India's No.1 Defence Magazine for Defence Aspirants

PARMANU
DEFENCE ACADEMY
सर्वदा शक्तिशाली

MAGAZINE   OCT 2023

Important Highlights of the Month

- ► BRICS & G20 Summit 2023: Know in detail
- ► Mahendragiri warship to be commission in Mumbai
- ► Aditya L1, India's mission to study the Sun explained
- ► Rustem Umerov became new Defence Minister of Ukraine
- ► ISRO' scientist's voice behind Chandrayaan-3 countdown dies
- ► India receives first C-295 MW transport aircraft for Indian Air Force

Defence Exercise:

- ► SIMBEX
- ► ASEX-01N
- ► YUDH ABHYAS
- ► BRIGHT STAR

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Dear Students,

Welcome to Parmanu Defence

You have entered the most crucial phase of your life. The next few years will shape your future. Every parent loves his child and wishes to provide him the best quality education to enable him reach his fullest potential. We at Parmanu Defence believe in providing uncompromised quality.

In the past 20 years, we have helped thousands of students to achieve their dream of getting into NDA, SSB, Airforce and Navy examinations. Our innovative pedagogy of learning, being followed at Parmanu Defence has evolved over the years and has enabled our students to achieve top ranks in NDA, SSB, Airforce, Navy and Board Exams.

At Parmanu Defence , we strive to get success for our young minds. Our Junior Division imparts knowledge to build a strong aptitude, analytical skills, personality full of positive attitude and confidence through right focus, direction and approach to ensure a successful life and career. As the child grows in age his mind start developing and we believe in developing these young minds from nascent state. We encourage students to prepare for NTSE, KVPY and other OLYMPIADS from middle school onwards.

At Parmanu Defence we have restructured our subject courses to incorporate the preparation of board exams along with the preparation of Defence exams. We believe that this approach will cut down duplicacy of effort of students and will maximize their efficiency. Our study material incorporate exercise based on defence exams type question along with the advance level questions. Periodic tests are held based on NDA/SSB/Airforce/Navy exam pattern along with the regular Board exam tests. Maths, Physics, Chemistry, GK, Reasoning and English classes are also held for the benefit of students. When our experience, expertise and efforts come together with sincere and wholehearted efforts by our students, miracle happens as is evident in Parmanu Defence. This defence institute was ranked amongst the top 10 coaching institute in North India by engineering watch.

Parmanu Defence with its unique teaching methodologies has always proved that we meet the expectations of thousands of students and parents to make their dreams come true. With changing patterns of various exams we have adapted ourselves to deliver the best and ensure better results. Upon induction to the Parmanu Defence, you become a part of this powerful system that propels you towards success. We wholeheartedly welcome you to the family of Parmanu Defence Dehradun.

THIS EDITION INCLUDES

ABOUT US:

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Braveheart: Story of India's unsung Hero

Ashok Kumar

Name	Ashok Kumar
Force	Central Reserve Police Force (CRPF)
Martyrdom Date	25/03/2021
Martyrdom Place	NH-44 UNDER PS PARIMPORA
Age on Date of Martyrdom	38 years
Native Place	Vill- Dehru, PO- Kahanphat, PS- Dheera, Teh-Palampur, Dist- Kangra, Himachal Pradesh-176101
Dependents	SUSHMA KUMARI (WIFE), ADITYA (SON) & RIDHIMA (DAUGHTER)

Brief of Incident:

On 25/03/2021, E/73 Bn has been deployed for routine ROP duty between Amity International school and Lawaypora to Narbal Crossing on NH- 44 under PS P Parimpora, Srinagar. One section was deployed with semi BP vehicle TATA-407 (SBP). At about 1545 hrs while this Section was changing the position to other side of road 2-3 unknown Militants who came from lateral to the highway suddenly fired on the vehicle. Troops immediately retaliated and responded with returning fire. No. 045232166 CT/Dvr Ashok Kumar also retaliated in befitting manner and forced the militants to flee from the incident place. During the exchange of fire No. 045232166 CT/Dvr Ashok Kumar sustained serious bullet injuries. Despite getting injured No. 045232166 CT/Dvr Ashok Kumar continued to effectively retaliate thus saved the weapons and life of his fellow personnels. He was immediately evacuated to nearby Noora Hospital and further referred to 92 Base (Army) Hospital, Srinagar for better treatment, where he succumbed to his injuries. Maintaining the highest tradition of CRPF, CT/Dvr Ashok Kumar displayed raw courage and made the supreme sacrifice in service of the Nation

CRPF

The Central Reserve Police Force (CRPF) is a reserve gendarmerie and internal combat force in India under the authority of the Ministry of Home Affairs (MHA) of the Government of India. It is one among the Central Armed Police Forces. The CRPF's primary role lies in assisting the State/Union Territories in police operations to maintain law and order and counter-insurgency. It is composed of Central Reserve Police Force (Regular) and Central Reserve Police Force (Auxiliary). It came into existence as the Crown Representative's Police on 27 July 1939. After Indian independence, it became the Central Reserve Police Force on the enactment of the CRPF Act on 28 December 1949. Besides law and order and counter-insurgency duties, the CRPF has played an increasingly large role in India's general elections.

Formed: 27 July 1939 (as Crown Representative's Police); 28 December 1949 (CRPF)
Annual budget: ₹29,324.92 crore (2022–23)
Governing body: Ministry of Home Affairs
Constituting instrument: Central Reserve Police Force Act, 1949
Headquarters: New Delhi, INDIA
Minister responsible: Amit Shah, Union Minister of Home Affairs
Director General: Dr. Sujoy Lal Thaosen
Child agencies: Commando Battalion for Resolute Action (COBRA), Rapid Action Force (RAF), Special Duty Group, CRPF Valley QAT, Parliament Duty Group

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Weapon of the Month

T-90S Main Battle Tank (MBT)

The T-90S main battle tank (MBT) is an advanced version of the T-series of Russian tanks, offering increased firepower, mobility and protection. It is manufactured by Uralvagonzavod, a Russian original equipment manufacturer, in Nizhny Tagil, Russia. It entered service with the Russian Army in 1992. In February 2001, the Indian Army signed a contract for 310 T-90S tanks; 124 were completed in Russia, and the rest were delivered in 'knocked down' form for final assembly in India. The Indian Ministry of Defence placed a $2.8bn contract with the Ordnance Factory Board (OFB) to licence-build 464 additional T-90S tanks at its heavy vehicle factory (HVF), Avadi, for the Indian Army in November 2019. Under the contract, Uralvagonzavod and Rosoboronexport, a state-owned Russian defence company, will receive $1.2bn for the technology transfer and OFB will receive $1.92bn for the domestic manufacturing of 464 T-90S tanks. The project is expected to be completed within four years, with an annual production rate of 120 T-90S tanks.

T-90S armament
The T-90S armament includes one 125mm 2A46M smoothbore gun that is stabilised in two axes and fitted with a thermal sleeve. The gun tube can be replaced without any dismantling inside the turret. The gun can fire a variety of ammunition, including Armour Piercing Discarding Sabot (APDS), high-explosive anti-tank (HEAT) and high-explosive fragmentation (HE-FRAG), as well as shrapnel projectiles with time fuses. The T-90S gun can also fire the 9M119 Refleks (NATO designation AT-11 Sniper) anti-tank guided missile system. The range of the missile is 100m to 4,000m and takes 11.7 seconds to reach maximum range.

Self-protection of T-90S
The T-90 tank is protected by both conventional armour-plating and ERA. It is fitted with the Shtora-1 defensive aids suite, which is produced by Electronintorg of Russia. This system includes an infrared jammer, laser warning system with four laser warning receivers, grenade discharging system that produces an aerosol screen, and computerised control system. It is also fitted with nuclear, biological and chemical (NBC) protection equipment.

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Variants of the T90 Tanks:

➢ T-90 – The first production version. Object 188 (1989), production 1992.

➢ T-90K – Commander's version of the T-90, with additional communication (R-163-50K station) and navigation equipment (TNA-4-3).

➢ T-90A – Russian army version with welded turret, V-92S2 engine and ESSA thermal viewer. Sometimes called T-90 Vladimir, in honor of its chief designer Vladimir Potkin.

➢ T-90AK – Command version of T-90A.

➢ T-90M – Latest version of the T-90A. The main features include the modernisation of the old turret design, which is equipped with the new advanced fire control system "Kalina" (with integrated combat information and control systems), improved armor on the ammo carousel, and a new upgraded gun 2A46M-5, as well as a remote-controlled anti-aircraft gun "UDP T05BV-1".

➢ T-90S – Export version of the T-90, later adopted by the Russian Armed Forces as the T-90A. These tanks were made by Uralvagonzavod and were updated with 1,000 hp (750 kW) engines made by the Chelyabinsk Tractor Plant.

➢ T-90SK – Commander's version of the T-90S, with additional communication and navigation equipment. It differs in radio and navigation equipment and in the Ainet remote-detonation system for HEF rounds.

➢ T-90S "Bhishma" – Modified T-90S in Indian service. India announced that they will be made in India until 2028

T-90 (1992)	T-72B3 (2011)	T-72B3 (2016)	T-72B2	T-90A	T-90M
840hp Engine	840hp Engine	1130hp Engine	1000hp Engine	1000hp Engine	1130hp Engine
No Thermals	2nd Gen Thermals	2nd Gen Thermals	2nd Gen Thermals	2nd Gen Thermals	2nd Gen Thermals CITV
Kontakt-5 ERA	Kontakt-5 ERA	Kontakt-5 Front Relikt Sides	Relikt ERA	Kontakt-5 ERA	Relikt ERA
Cast Turret	Cast Turret	Cast Turret	Cast Turret	Welded Turret	Welded Turret
Shtora APS	No APS	No APS	No APS	Shtora APS	No APS LWR
Can't use Svinets-1/2	Can use Svinets-1/2	Can use Svinets-1/2	Can use Svinets-1/2	Can use Svinets-1/2	Can use Svinets-1/2

Defence Exercise of the Month

SIMBEX

भारतीय नौसेना और सिंगापुर गणराज्य की नौसेना के बीच सिंगापुर-भारत वार्षिक नौसेना समुद्री द्विपक्षीय अभ्यास शुरू हो गया है। SIMBEX दो नौसेनाओं के बीच अंतरसंचालनीयता और आपसी समझ को बढ़ाता है। अभ्यास दो चरणों में आयोजित किया जाता है। हार्बर चरण में पेशेवर बातचीत, क्रॉस-डेक दौरे, विषय वस्तु विशेषज्ञ आदान-प्रदान और खेल फिक्स्चर की विस्तृत श्रृंखला शामिल है। SIMBEX के समुद्री चरण में वायु रक्षा, तोप फायरिंग, पनडुब्बी रोधी और अन्य समुद्री अभियानों के अभ्यास शामिल हैं। रणविजय, कवरत्ती और सिंधुकेसरी, लंबी दूरी के समुद्री गश्ती विमान P81 अभ्यास में भाग लेते हैं। SIMBEX भारतीय नौसेना का किसी अन्य देश के साथ किया गया सबसे लंबा नौसैनिक अभ्यास है। दोनों नौसेनाओं की इकाइयां समुद्री क्षेत्र में संयुक्त रूप से बहु-अनुशासनात्मक संचालन के साथ अपने युद्ध-लड़ने के कौशल को निखारेंगी।

ASEX-01N

दक्षिण चीन सागर क्षेत्र में चीन के साथ बढ़ते समुद्री तनाव के बीच इंडोनेशिया ने बाटम द्वीप पर दक्षिण पूर्व एशियाई राष्ट्र संघ (आसियान) ब्लॉक द्वारा पहला संयुक्त सैन्य अभ्यास शुरू किया। पांच दिवसीय आसियान एकजुटता अभ्यास-01 नातुना (ASEX-01N) अभ्यास, दक्षिण चीन सागर के पास इंडोनेशिया के नातुना द्वीप समूह में आयोजित किया जाएगा। पूर्वी तिमोर सहित सभी आसियान सदस्य देशों के सैन्यकर्मी भाग लेंगे। गैर-लड़ाकू अभ्यास का उद्देश्य सदस्य देशों के बीच सहयोग और रणनीतिक साझेदारी को मजबूत करना है।

इंडोनेशिया:
➢ राजधानी: जकार्ता
➢ राष्ट्रपति: जोको विडोडो
➢ उपराष्ट्रपति: मारुफ़ अमीन
➢ मुद्रा: इंडोनेशियाई रुपया

ब्राइट स्टार-23

भारतीय वायु सेना (IAF) मिस्र में अभ्यास 'ब्राइट स्टार-23' में भाग ले रही है। संयुक्त राज्य अमेरिका, सऊदी अरब, ग्रीस और कतर की टुकड़ियां भी इसका हिस्सा हैं। यह पहली बार है कि जब वायुसेना इस रक्षा अभ्यास में हिस्सा ले रही है। भारतीय वायुसेना के दल में पांच मिग-29, दो आईएल-78, दो सी-130 और दो सी-17 विमान शामिल होंगे।

भारत-इंडोनेशिया-ऑस्ट्रेलिया त्रिपक्षीय समुद्री अभ्यास

भारतीय नौसेना के स्वदेश निर्मित युद्धपोत आईएनएस सह्याद्री ने रॉयल ऑस्ट्रेलियाई नौसेना (आरएएन) और इंडोनेशियाई नौसेना के जहाजों और विमानों के साथ पहले त्रिपक्षीय समुद्री साझेदारी अभ्यास में भाग लिया। त्रिपक्षीय अभ्यास ने तीन समुद्री देशों को अपनी साझेदारी को मजबूत करने और एक स्थिर, शांतिपूर्ण और सुरक्षित भारत-प्रशांत क्षेत्र का समर्थन करने के लिए अपनी सामूहिक क्षमता में सुधार करने का अवसर प्रदान किया। इस अभ्यास ने भाग लेने वाली नौसेनाओं को एक-दूसरे के अनुभव और विशेषज्ञता से लाभ उठाने का अवसर भी प्रदान किया। चालक दल के प्रशिक्षण और अंतरसंचालनीयता को बढ़ाने के लिए जटिल सामरिक और युद्धाभ्यास अभ्यास, क्रॉस-डेक दौरे और इंटीग्रल हेलीकॉप्टरों की क्रॉस-डेक लैंडिंग आयोजित की गई। आईएनएस सह्याद्रि, स्वदेशी रूप से डिजाइन और निर्मित प्रोजेक्ट-17 श्रेणी के मल्टीरोल स्टील्थ फ्रिगेट्स का तीसरा जहाज, मझगांव डॉक लिमिटेड, मुंबई में बनाया गया था और इसकी कमान कैप्टन राजन कपूर के पास है।

युद्ध अभ्यास

युद्ध अभ्यास का 19वां संस्करण अमेरिका के अलास्का में आयोजित किया जाएगा। यह भारतीय सेना और अमेरिकी सेना द्वारा संयुक्त रूप से आयोजित एक वार्षिक अभ्यास है। अभ्यास के इस संस्करण में 350 कर्मियों वाली भारतीय सेना की टुकड़ी भाग लेगी। भारत की ओर से प्रमुख बटालियन मराठा लाइट इन्फैंट्री रेजिमेंट से संबद्ध है। दोनों पक्ष संयुक्त राष्ट्र शांति अभियानों के संचालन में अंतरसंचालनीयता बढ़ाने के लिए सामरिक अभ्यासों की एक श्रृंखला का अभ्यास करेंगे। इस अभ्यास में लड़ाकू इंजीनियरिंग, बाधा निवारण, खदान और इम्प्रोवाइज्ड एक्सप्लोसिव डिवाइसेस युद्ध सहित युद्ध कौशल के व्यापक स्पेक्ट्रम पर अभ्यास में विचारों और सर्वोत्तम प्रथाओं का आदान-प्रदान भी शामिल होगा।

संयुक्त राज्य अमेरिका:
➢ राजधानी वाशिंगटन, डी.सी.
➢ राष्ट्रपति: जो बिडेन
➢ उपराष्ट्रपति: कमला हैरिस
➢ मुद्रा: अमेरिकी डॉलर

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Carrom Masters Clash in Thrilling Finale at Parmanu Defence Academy Dehradun

In the heart of the picturesque Dehradun valley, nestled amidst the mighty Himalayas, the Parmanu Defence Academy witnessed the grand finale of the Carrom Championship that had carrom enthusiasts from far and wide holding their breath. It was a day filled with electrifying moments, jaw-dropping shots, and intense battles as the best carrom players competed for the coveted championship title.The final showdown took place in a specially arranged arena at the academy, where the tension was palpable. Two formidable players, Vanshaj Pandotra from Class XII and Amandeep Negi from Droppers Batch , each a maestro in their own right, took center stage. In mixed Double match the final clash took place between Krish thakur and Sonal Thakur of Class XII versus Kashish and Themneilam from Droppers Batch .The crowd fell into hushed anticipation as the first striker touched the carrom board, ready to make history.

The match began with the customary toss, and the first flick of the striker set the tone for what would be an extraordinary display of carrom skills. The players demonstrated impeccable precision, sending their carrom men gliding across the board.What made this championship so enthralling was not just the skill of the players but the strategies they employed. Every shot was a testament to their months of practice and dedication. From brilliant combinations to subtle defensive moves, the players revealed their game plans with each flick of the striker.

The audience was treated to masterful exhibitions of bank shots, pocketing the queen with surgical precision, and skillful positioning. It was a chess match on a wooden board, with players strategizing several moves ahead.As the match reached its climax, the room echoed with gasps and cheers. All players displayed nerves of steel, holding their own under pressure. The lead swung back and forth, adding to the excitement.

The moment of truth came when the players were almost tied, and the final flick of the striker decided the champion. With bated breath, the striker glided across the board, expertly potting the last carrom man and sealing the victory. The room erupted in applause as the champion Vanshaj Pandotra (Class XII) and Krish Thakur and Sonal thakur in mixed Double match were crowned and declared as carrom champions.

In the end, it wasn't just about winning or losing; it was about the spirit of sportsmanship that prevailed throughout the championship. Players congratulated each other with genuine smiles, acknowledging the effort and dedication it took to reach the final stage.

The Carrom Championship final at Parmanu Defence Academy, Dehradun, was more than just a sporting event; it was a celebration of passion, precision, and the indomitable spirit of competition. Against the backdrop of the majestic Himalayas, carrom enthusiasts had witnessed a spectacle that would be etched in their memories forever.The academy's commitment to promoting sportsmanship and camaraderie through such events was evident, and it served as a shining example of how sports can unite people and transcend boundaries. As the sun set behind the Himalayan peaks, it marked the end of a remarkable chapter in carrom history and the beginning of a new era of sportsmanship and excellence at Parmanu Defence Academy.

Burning Issues of the Month

2023 G20 New Delhi summit

The 2023 G20 New Delhi summit was the eighteenth meeting of G20 (Group of Twenty). It was held in Bharat Mandapam International Exhibition-Convention Centre, Pragati Maidan, New Delhi on 9–10 September 2023. It was the first G20 summit held in India.

What is G20?
The G20 or Group of 20 is an intergovernmental forum comprising 19 sovereign countries, the European Union (EU), and the African Union (AU). It works to address major issues related to the global economy, such as international financial stability, climate change mitigation and sustainable development.

Note: The G20 operates without a permanent secretariat or staff. The group's chair rotates annually among the members and is selected from a different regional grouping of countries.

Background
Originally, India was scheduled to host the G20 summit in 2021 and Italy in 2022. At the 2018 G20 Buenos Aires summit in Argentina, Prime Minister Narendra Modi said he had requested Italy to host the summit in 2021 and allow India to host it in 2022, on the occasion of the 75th year of India's independence. Italy agreed to let India host the G20 summit in 2022 in its place, owing to the momentum in bilateral ties. However, after a request made by Indonesian Foreign Minister Retno Marsudi, India exchanged its presidency of the G20 with Indonesia because Indonesia would also chair the Association of Southeast Asian Nations (ASEAN) in 2023.

Presidency
The G20 New Delhi Summit is chaired by the Indian Prime Minister, Narendra Modi. India's presidency began on 1 December 2022, leading up to the summit in the third quarter of 2023. The presidency handover ceremony was held, in which the G20 Presidency gavel was transferred from Indonesian President Joko Widodo to Indian Prime Minister Modi at the close of the Bali summit. Indonesia held the presidency in 2022. Indian Prime Minister Modi formally handed over the G20 presidency to Luiz Inácio Lula da Silva, the President of Brazil. India will continue to hold the position until 30 November 2023.

Participating Countries

Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, South Korea, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom, United States, European Union.

Guests Countries:

Bangladesh, Comoros, Egypt, Mauritius, Netherlands, Nigeria, Oman, Singapore, Spain, United Arab Emirates.

International Organization which participates

1. Asian Development Bank
2. International Monetary Fund
3. International Labour Organization
4. Organisation for Economic Co-operation and Development
5. United Nations
6. World Bank
7. World Health Organisation
8. World Trade Organisation
9. Coalition for Disaster Resilient Infrastructure

Conclusion:

➤ The African Union joined the G20 as a permanent member.
➤ A new organisation called the Global Biofuel Alliance (GBA) was launched, to promote the development and adoption of sustainable biofuels, and set relevant standards and certification.
➤ The New Delhi Leaders Declaration was adopted with consensus.
➤ A group of countries made a joint agreement to build a rail and shipping corridor linking India with the Middle East and Europe called the India-Middle East-Europe Economic Corridor. The group comprises India, Saudi Arabia, the United Arab Emirates, Jordan, Israel and the European Union.
➤ The 2023 summit in contrast to the previous year significantly resulted in no mention of the Russo-Ukrainian War in the final document.

2023 Summit at a glance

➤ Host country: India
➤ Date: 9–10 September 2023
➤ Theme: Vasudhaiva Kutumbakam (One Earth, One Family, One Future)
➤ Participants: G20 members, Invitee countries by Indian Government
➤ Chair: Narendra Modi, Prime Minister of India
➤ Budget allocated: Rs. 990 crore (120 million USD)
➤ Follows: 2022 G20 Bali summit
➤ Precedes: 2024 G20 Rio de Janeiro summit

15th BRICS Summit

The 2023 BRICS summit was the fifteenth annual BRICS summit, an international relations conference attended by the heads of state or heads of government of the five member states: Brazil, Russia, India, China, and South Africa. South African President Cyril Ramaphosa also invited the leaders of 67 countries to the summit.

2023 Theme: 'BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development and Inclusive Multilateralism.'

BRICS Expansion
The BRICS bloc of developing countries, comprising Brazil, the Russian Federation, India, China, and South Africa, decided to expand their alliance to include Argentina, Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates (UAE). Full membership will take effect on 1 January 2024.

Evolution
BRICS is a partnership of five leading emerging markets and developing countries, founded on historical bonds of friendship, solidarity and shared interests. Together, the Federative Republic of Brazil, the Russian Federation, the Republic of India, the People's Republic of China and the Republic of South Africa represent over 42% of the global population, 30% of the world's territory, 23% of GDP and 18% of global trade. In 2001, the British Economist Jim O'Neill coined the term BRIC to describe the four emerging economies of Brazil, Russia, India, and China. The grouping was formalized during the first meeting of BRIC Foreign Ministers in 2006. South Africa was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.

Controversies behind BRICS 2023 summit

Participation of Vladimir Putin
In March 2023, the International Criminal Court (ICC) issued an arrest warrant against Russian President Vladimir Putin for war crimes during the Russian invasion of Ukraine. South Africa is required as an ICC signatory to honour the warrant. But in May 2023, South Africa government, granted all invited leaders diplomatic immunity. It was unclear whether this would prevent Putin from being arrested if he attended. According to the Department of International Relations and Cooperation, it was standard practice in South Africa to confer such immunity to attendees of international conferences held in the country. By early June 2023, moving the summit to China was being considered to avoid the issue. In mid-July 2023, Vladimir Putin announced that he would not attend the summit "by mutual agreement" and would instead be sending Foreign Minister Sergei Lavrov.

Nonattendance by Xi Jinping
Despite meeting with host Cyril Ramaphosa, Chinese President Xi Jinping unexpectedly did not attend the BRICS business forum where he had been scheduled to speak and instead his speech was read out by Minister of Commerce of China Wang Wentao.

BRICS 2023
➢ Host country: South Africa
➢ City: Johannesburg
➢ Participants: Brazil, Russia, India, China, South Africa
➢ Invited bodies: African Union, Arab Maghreb Union, Organisation of Islamic Cooperation, United Nations, ASEAN
➢ Chair: Cyril Ramaphosa (South Africa)

Aditya L1: India's mission to study the Sun
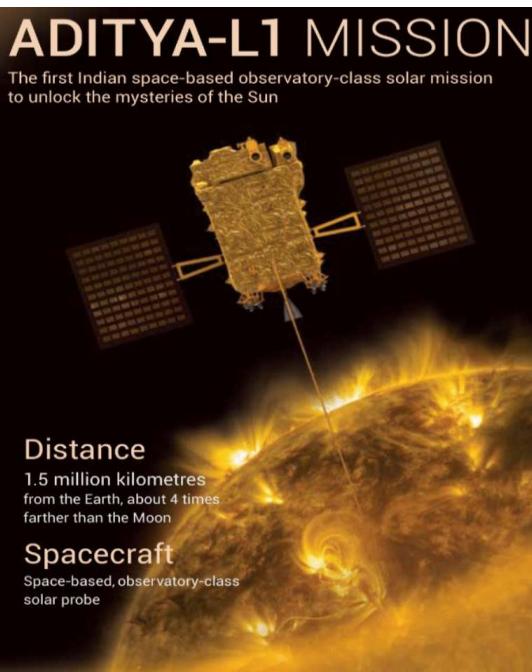
ISRO's spacecraft succesfully launched from Satish Dhawan Space Centre, Sriharikota on 02 Sept 2023. With this, India inched one step closer for the completion of its maiden Solar expedition. ISRO's trusted PSLV carried the Aditya L1 mission on a 125-day voyage to the Sun. The Aditya L1 spacecraft will stay in Earth's orbit for sixteen days. After four months of journey, the satellite will be placed on the L1 point in the halo orbit around the Sun. Aditya L1 is designed to provide remote observations of the Solar corona and conduct in-situ observations of the Solar wind at L1 (Sun-Earth Lagrangian point), which is about 1.5 million kilometres from the Earth.

Mission Details

Illustration of all five Lagrange points of Sun-Earth system. Aditya-L1 will be placed around Largrange point 1
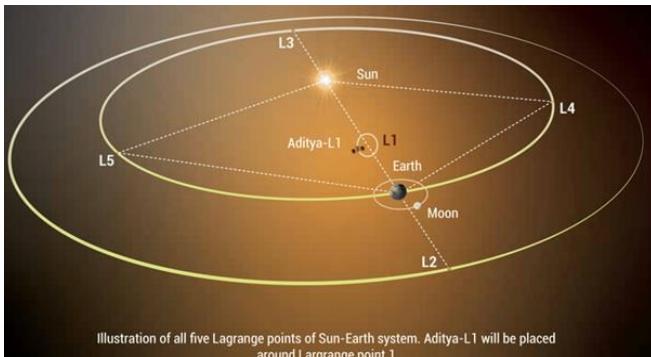
Aditya-L1 is a satellite dedicated to the comprehensive study of the Sun. It has 7 distinct payloads developed, all developed indigenously. Five by ISRO and two by Indian academic institutes in collaboration with ISRO. Aditya in Sanskrit means the Sun. L1 here refers to Lagrange Point 1 of the Sun-Earth system. For common understanding, L1 is a location in space where the gravitational forces of two celestial bodies, such as the Sun and Earth, are in equilibrium. This allows an object placed there to remain relatively stable with respect to both celestial bodies.

Following its launch on September 2, 2023, Aditya-L1 stays Earth-bound orbits for 16 days, during which it undergoes 5 maneuvres to gain the necessary velocity for its journey. Subsequently, Aditya-L1 undergoes a Trans-Lagrangian1 insertion maneuvre, marking the beginning of its 110-day trajectory to the destination around the L1 Lagrange point. Upon arrival at the L1 point, another maneuvre binds Aditya-L1 to an orbit around L1, a balanced gravitational location between the Earth and the Sun. The satellite spends its whole mission life orbiting around L1 in an irregularly shaped orbit in a plane roughly perpendicular to the line joining the Earth and the Sun.

The strategic placement at the L1 Lagrange point ensures that Aditya-L1 can maintain a constant, uninterrupted view of the Sun. This location also allows the satellite to access solar radiation and magnetic storms before they are influenced by Earth's magnetic field and atmosphere. Additionally, the L1 point's

gravitational stability minimizes the need for frequent orbital maintenance efforts, optimizing the satellite's operational efficiency.
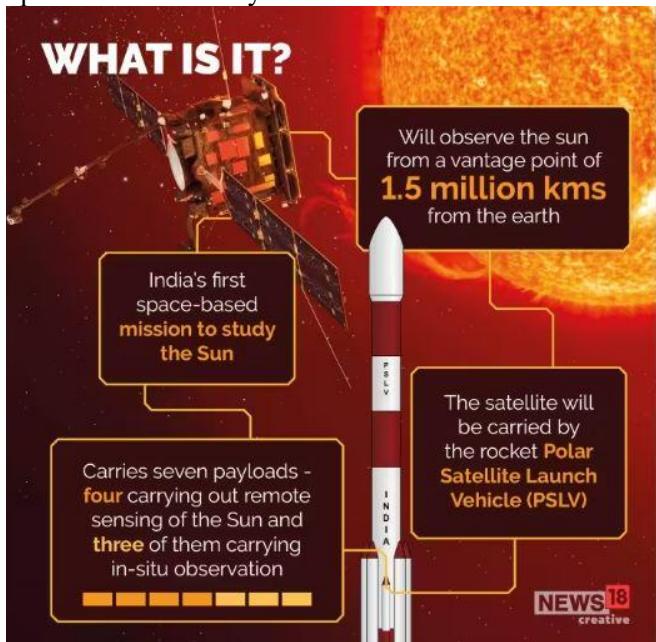
Quick Facts: Aditya-L1 will stay approximately 1.5 million km away from Earth, directed towards the Sun, which is about 1% of the Earth-Sun distance. The Sun is a giant sphere of gas and Aditya-L1 would study the outer atmosphere of the Sun. Aditya-L1 will neither land on the Sun nor approach the Sun any closer.

Mission Objective:
The suits of Aditya L1 payloads are expected to provide most crucial information to understand the problem of coronal heating, coronal mass ejection, pre-flare and flare activities and their characteristics, dynamics of space weather, propagation of particle and fields etc.

Payloads:
The instruments of Aditya-L1 are tuned to observe the solar atmosphere mainly the chromosphere and corona. In-situ instruments will observe the local environment at L1. There are total seven payloads on-board with four of them carrying out remote sensing of the Sun and three of them carrying in-situ observation.

> "There is a powerful driving force inside every human being that, once unleashed, can make any vision, dream, or desire a reality."

Nigar Shaji: Scientist behind ADITYA L1 Mission

Hailing from the greens of Sengottai, Tamil Nadu, Nigar Shaji is a graduate of the Madurai Kamaraj University. She joined ISRO in 1987 and currently resides in Bengaluru. Before joining the maiden solar mission, Shaji was transferred to UR Rao Satellite Centre in Bengaluru where she worked in different verticals building her expertise. She was also involved in the design of India's remote sensing, communication and interplanetary satellites in different capacities.

> "People Who Are Crazy Enough To Think They Can Change The World, Are The Ones Who Do."

Checkmate at the Summit: Chess Championship Final at Parmanu Defence Academy, Dehradun

Amidst the breathtaking beauty of Dehradun, where the towering Himalayas cast their majestic shadow, the Parmanu Defence Academy played host to a chess championship final that will be remembered for long time. As the sun bathed the academy arena in a warm glow, the chess lovers gathered for an epic showdown of intellect, strategy, and nerve.

The final chess battle unfolded in an atmosphere charged with anticipation. Two formidable minds, in boy's category Brijeshwar thakur (Class XII) & Anmol (Dropper Batch) while in Girls category Jhanavi (Dropper Batch) & Muskan Pathania (Class XII), each one of them possessing the strategic acumen of a grandmaster, faced off across the board. A hushed silence enveloped the room as the first piece was moved, signaling the commencement of a battle of wits.

The match was not just a contest; it was a duel between two individuals who had honed their skills to near perfection. With each move, the tension in the room escalated, and spectators were treated to a symphony of strategy and cunning.

What set this championship apart was not just the players' technical proficiency but their ability to outwit and outmaneuver their opponents. Every move was a masterpiece, and each decision reflected their profound understanding of the game.The audience marveled at the players' ability to plan multiple moves in advance, execute dazzling combinations, and capitalize on their adversaries' slightest missteps. It was a mental battlefield where sacrifices were made, traps were set, and daring gambits paid off.

As the championship neared its zenith, the tension became almost unbearable. The match seemed evenly poised, with neither player willing to yield an inch. Every piece was strategically placed, and every move carried immense weight.

The final moments were a testament to the players' nerves of steel. As the clock ticked down, the players made their decisive moves, leading to an extraordinary checkmate that sent waves of exhilaration through the room. The champion in boy's category Anmol and Girl's Category Jhanavi emerged, and the academy erupted in applause.

In the end, it wasn't just about the victor; it was about the spirit of sportsmanship and intellectual prowess that pervaded the entire championship. The players shared a moment of mutual respect and acknowledged the brilliance of their opponent.

The Chess Championship final at Parmanu Defence Academy, Dehradun, was not just a competition; it was a grand spectacle of intellect and strategy set against the backdrop of the Himalayan grandeur. The academy's commitment to nurturing and celebrating intellectual prowess was evident throughout the event.

As the sun dipped below the horizon, casting its golden glow on the Himalayas, it marked not just the end of a chess championship but a celebration of chessmanship, a testament to the power of the human mind, and a glorious moment in the academy's legacy of excellence. It was a day when the intellect reigned supreme, and checkmate echoed through the hills of Dehradun, leaving an indelible mark on all who witnessed this extraordinary event.

Current Affairs In Detail

Recent Appointments

Wipro appoints Aparna C Iyer as Chief Financial Officer

Wipro Limited announced that it is appointing Aparna C Iyer as Chief Financial Officer, effective immediately. Aparna will report to CEO Thierry Delaporte and will join the Wipro Executive Board. She succeeds Jatin Dalal, who is stepping down as CFO to pursue other career opportunities. Aparna C Iyer joined Wipro in April 2003. Over her 20 years with Wipro, she has held several finance roles.

Wipro:
- Founder: M. H. Hasham Premji
- Owner: Azim Premji
- Headquarters: Bengaluru
- Founded: 29 December 1945
- CEO: Thierry Delaporte
- Subsidiaries: Appirio, Topcoder, Capco, Designit

Dhananjay Joshi Appointed Chairman of Telecom Industry Body DIPA

Digital Infrastructure Providers Association (DIPA) has appointed Dhananjay Joshi as its new Chairman and Sandeep Girotra as Vice-Chairman. He currently serves as the Managing Director and CEO of Summit Digitel, and has previously held the position of COO at Bharti Infratel. He will be succeeding Akhil Gupta, Chairman of Bharti Enterprises. Sandeep Girotra, who currently serves as the current CEO of American Tower India takes over from Amit Sharma Vice-Chairman, DIPA & Former EVP at American Tower Corporation (ATC).

Digital Infrastructure Providers Association (DIPA):

The Digital Infrastructure Providers Association (DIPA) is a non-profit industry body that represents the digital infrastructure industry in India. It was founded in 2010 as the Tower and Infrastructure Providers Association (TIPA), but was renamed DIPA in 2020 to reflect the broader scope of its membership.

Indian-origin Nihar Malaviya named permanent CEO of Penguin Random House

Nihar Malaviya, an Indian-origin publishing executive, has been appointed as permanent CEO of New York-based international publishing group Penguin Random House. He had replaced Markus Dohle, who departed after Penguin Random House's failed bid for Simon & Schuster 2022. Prior to his appointment as interim CEO of Penguin Random House on January 1, 2023, Malaviya served as President and Chief Operating Officer of Penguin Random House US since 2014.

Penguin Random House:

Penguin Random House LLC is an Anglo-American multinational conglomerate publishing company formed on July 1, 2013, with the merger of Penguin Group and Random House. Penguin Books was originally founded in 1935 and Random House was founded in 1927.
- Founded: July 1, 2013
- Headquarters: New York City, United States
- Chairman: Thomas Rabe

HDFC Bank's Jagdishan gets 3-year extension

The Reserve Bank of India has approved the reappointment of Sashidhar Jagdishan as HDFC Bank managing director and chief executive officer for three more years till 26 October 2026. Jagdishan joined the bank in 1996 as a manager in the finance function and became business head of finance in 1999. He was later appointed chief financial officer in 2008.

HDFC Bank:
- Founded: 1st July 2023 (via the merger between HDFC-HDFC bank)
- Headquarters: Mumbai, Maharashtra, India
- Chairman: Atanu Chakraborty
- CEO: Sashidhar Jagdishan

Liberty General Insurance appoints Parag Ved as CEO

Liberty General Insurance announced the appointment of Parag Ved as its chief executive and a director on the board. Prior to joining Liberty, he was the president of consumer lines at Tata AIG General Insurance. Ved has over two decades of experience in the insurance industry, holding senior leadership roles in organizations including ICICI Lombard General Insurance. Ved takes on the role following the retirement of Roopam Asthana, who was instrumental in establishing Liberty's business operations.

Liberty General Insurance
- Industry: Insurance
- Founded: 2013
- Headquarters: Mumbai, India

- Parent: Liberty Mutual (48. 7%), DP Jindal Group (26%) & ENAM Securities (25. 32%)

Byju's elevates Arjun Mohan as India CEO

Edtech major Byju's elevated Arjun Mohan as the CEO of its India operations. Mohan succeeds Mrinal Mohit, founding partner and the outgoing head of India business at Byju's, who is embarking on a new journey to pursue personal aspirations. Mohan was a part of the founding team and last served as the Chief Business Officer, before rejoining the company recently. Raveendran, who is the cofounder of the edtech giant, will remain its group CEO, while Mohan will manage its India business.

Byju's:
- Founded: 2011
- Founders: Byju Raveendran, Divya Gokulnath
- Headquarters: Bangalore, Karnataka, India
- CEO: Byju Raveendran
- Director: Divya Gokulnath

RBI approves the reappointment of Sandeep Bakshi as MD & CEO of ICICI Bank

ICICI Bank Limited has received the Reserve Bank of India's (RBI) nod to reappoint Sandeep Bakhshi as Managing Director and CEO. Bakhshi has been reappointed for three years. Sandeep Bakshi has been leading ICICI Bank since October 15, 2018, and before that, he served as a full-time director and Chief Operating Officer (COO). Bakshi has a tenure of 36

years in ICICI Group and has held various important positions.

ICICI Bank:
➢ Headquarters: Mumbai
➢ CEO: Sandeep Bakhshi
➢ Founder: Industrial Credit and Investment Corporation of India
➢ Founded: 1994, Vadodara

Indian-origin Tharman Shanmugaratnam wins Singapore's presidential election

Elected as the ninth president of Singapore, Tharman Shanmugaratnam, a distinguished economist, became the third Indian-origin person to head the prosperous city-state for the next six years. Tharman beat Ng Kok Song, a former chief investment officer with the Government of Singapore Investment Corp (GIC), and Tan Kin Lian, the former chief of the NTUC Income, a state-owned union-based insurance group by a huge margin. Incumbent President Halimah Yacob's six-year term will end on September 13. The elected president serves a six-year term. Tharman has served as Singapore's Deputy Prime Minister between 2011 and 2019 and as Senior Minister in the Cabinet between 2019 and 2023.

R Madhavan Appointed as New President of the Film and Television Institute of India

The Ministry of Information and Broadcasting (MIB) appointed actor R Madhavan as the president of the Film and Television Institute of India (FTII) Society and chairperson of the governing council. The tenure of former president director Shekhar Kapur ended on 3 March, 2023. The FTII Society, headed by the FTII chairperson, has 12 nominees, of whom eight are nominated under the 'Persons of Eminence' category while four are FTII alumnus.

Zimbabwean president Mnangagwa re-elected

Zimbabwean President Emmerson Mnangagwa was re-elected for a second and final term. This was the second election in Zimbabwe since authoritarian leader Robert Mugabe was deposed by the military in 2017. In that election, in 2018, Mnangagwa won 51% of the total ballots, while Chamisa took 44%.

Zimbabwean:
➢ Capital: Harare
➢ Currency: United States Dollar
➢ President: Emmerson Mnangagwa

Justice Qazi Faez Isa sworn in as 29th Chief Justice of Pakistan
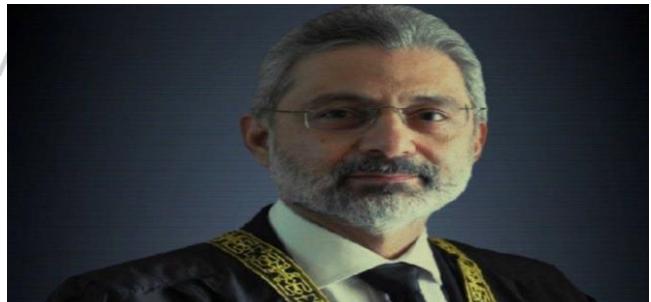
Justice Qazi Faez Isa was sworn in as the 29th Chief Justice of Pakistan. He served as chief justice of the Balochistan High Court from 2009 to 2014 and was elevated to the Supreme Court in 2014.

Pakistan:
➢ Capital: Islamabad
➢ President: Arif Alvi
➢ Prime Minister: Anwar ul Haq Kakar (Caretaker)

Rahul Navin appointed in-charge director of Enforcement Directorate

Enforcement Directorate Special Director Rahul Navin was appointed the agency's in-charge director as the term of Sanjay Kumar Mishra ended. With his appointment, Navin becomes the most senior officer within the ED. The appointment will be valid till a regular ED Director is appointed.

ED:

The Directorate of Enforcement (ED) is a domestic law enforcement agency and economic intelligence agency responsible for enforcing economic laws and fighting economic crime in India.

- Formed: 1 May 1956
- Headquarters: New Delhi, India
- Minister: Nirmala Sitharaman, Minister of Finance

Veteran banker Rajnish Kumar appointed as Chairman of Mastercard India

Former State Bank of India (SBI) Chairman Rajnish Kumar has been appointed as chairman of Mastercard India. Kumar will guide Mastercard's South Asia executive leadership team led by Gautam Aggarwal, Division President for South Asia & Country Corporate Officer, India, in navigating the domestic payments landscape.

Mastercard:

- President: Michael Miebach
- Headquarters: New York, United States
- Established: 1966

China becomes first country to name new Afghan ambassador under Taliban

China became the first country to formally name a new ambassador to Afghanistan since Taliban takeover, after its envoy Zhao Sheng presented credentials at a ceremony in Kabul. The Taliban have not been officially recognised by any foreign government. The Taliban seized power in August 2021 after the withdrawal of US-led NATO forces followed by two decades of war. Since then, Taliban leaders have been put under sanctions and no country has recognised their rule as legitimate. China's previous ambassador to Afghanistan, Wang Yu, took up the role in 2019 and finished his tenure last month.

China:

- Capital: Beijing
- President: Xi Jinping
- Currency: Renminbi

AIBI appointed Mr. Mahavir Lunawat of Pantomath Capital as Chairman

The Association of Investment Bankers of India (AIBI) appointed Mahavir Lunawat, Managing Director of Pantomath Capital Advisors Pvt Ltd. as its Chairman. The Chairperson of AIBI represents Investment Bankers on the Primary Market Advisory Committee (PMAC) of SEBI and has been active in representing the members' views, and comments. AIBI also announced the appointment of Arjun Mehra, MD of J.

M. Financial, and Prem D'Cunha, SVP & Head – ECM Execution at ICICI Securities as its Vice Chairmen.

Ukraine appoints new Defence Minister

The Ukrainian Parliament has approved a legislation to appoint Rustem Umerov as the country's new Defence Minister. Umerov, 41, served as the head of the country's main privatisation fund between September 2022 and September 2023. Umerov is a Crimean Tatar, a Turkic people from the Black Sea Ukrainian peninsula that was annexed by Russia in 2014. Since 2020, Rustem Umerov has been a member of a Ukrainian government task force working on the strategy to end the Russian occupation of Crimea.

Ukraine :
➢ Capital: Kyiv
➢ President: Volodymyr Zelenskyy
➢ Prime Minister: Denys Shmyhal

Vanuatu parliament elects Sato Kilman as prime minister
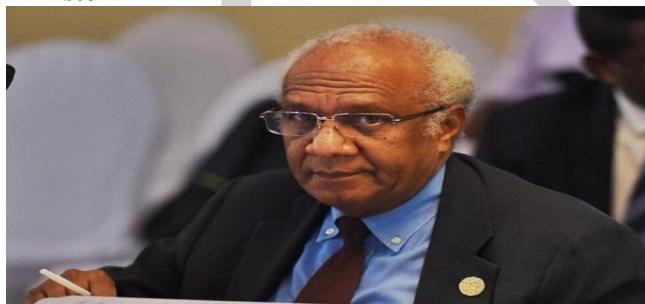
Vanuatu's parliament elected Sato Kilman as the nation's new prime minister after a court upheld a vote of no-confidence in the nation's former leader and amid China-US rivalry in Pacific Islands. Kilman, a former prime minister and leader of the People's Progressive Party, was elected prime minister 27/23 in a secret ballot by lawmakers. He has previously served two stints as prime minister, in 2012 and in 2015 for eight months.

Vanuatu is an archipelago of 83 islands, of which 16 are inhabited. The largest islands are Espiritu Santo, Malakula, Efate, Erromango, Ambrym, Tanna, Pentecost, Epi, Ambae or Aoba, Gaua, Vanua Lava, Maewo, Malo and Aneityum or Anatom.

Vanuatu:
➢ Capital: Port Vila
➢ President: Nikenike Vurobaravu
➢ Currency: Vatu

Nasscom appoints Cognizant chairman, MD Rajesh Nambiar as new chairperson

Technology industry body National Association of Software and Services Companies (Nasscom) announced the appointment of Rajesh Nambiar, Chairman and Managing Director, Cognizant India, as its chairperson. Nasscom members include various industry stakeholders, ranging from startups to multinational firms and from products to services, global capability centers to engineering companies. Nambiar has previously served as the vice-chairperson of Nasscom and will succeed Anant Maheshwari, former president of Microsoft India as its new chairperson.

Nasscom :
➢ Formation: 1988
➢ Headquarters: Noida, Uttar Pradesh, India & New Delhi, Delhi, India
➢ President: Debjani Ghosh

Gabon's military leader Brice Oligui Nguema sworn in as interim President

Brice Oligui Nguema, the leader of Gabon's military junta, has been sworn in as the nation's interim President. This comes after military officers led by Gabonese General Nguema seized power of the Central African nation last week, ousting Gabon President Ali Bongo, minutes after he was named winner of a disputed election. Gabon is the sixth Francophone country to fall under military rule in the last three years as former colonial power France struggles to maintain its influence on the continent.

Gabon:
➢ Capital: Libreville
➢ Currency: Central African CFA franc (XAF)

Govt appoints Jaya Verma Sinha as Chairperson, CEO of Railway Board

The Government appointed Jaya Verma Sinha as the Chairperson and Chief Executive Officer of the Railway Board. She is the first woman appointed to the post. Ms Sinha, currently posted in the Railway Board as a Member (Operations and Business Development) will succeed Anil Kumar Lahoti. She will assume charge on or after the 1st of September and her tenure will be till the 31st of August next year.

FIDC announces appointment of Umesh Revankar as chairman

The Finance Industry Development Council (FIDC) has appointed Umesh Revankar as its chairman. He currently holds the position of executive vice chairman for Shriram Finance and brings with him decades of experience and expertise in the financial services industry.

Geetika Srivastava to be first woman chargé d'affaires in Indian mission in Pak

Geetika Srivastava is set to become the first woman diplomat to hold the post of chargé d'affaires in the Indian high commission in Islamabad. Geetika Srivastava will replace Suresh Kumar. Srivastava is currently a Joint Secretary in Ministry of External Affairs Indo-Pacific division and was previously Director of the ministry's Indian Ocean Region division. She served in Indian embassy in China during 2007-09. Meanwhile, Pakistan has appointed Saad Warraich as Charged' Affaires in New Delhi. Relationship between India and Pakistan was downgraded in 2019.

Nita Ambani steps down, Isha, Akash & Anant to join Reliance board

Nita Ambani stepped down from the Board of Directors of Reliance Industries Limited, Isha, Akash and Anant to become the non-executive directors on the RIL Board. Meanwhile, Nita Ambani will continue to be the chairperson of Reliance Foundation. Nita Ambani will continue to attend all the RIL Board meetings as a permanent invitee to the Board.

Reliance Industries:
➢ Founded: 1958
➢ Founder: Dhirubhai Ambani

PARMANU
DEFENCE ACADEMY
सर्वदा शक्तिशाली

An Adventure by the Riverside: A Day of Exploration, Laughter, and a Refreshing Dip in Nature's Pool

In the heart of the Himalayan foothills, where nature's grandeur reigns supreme, students from Parmanu Defence Academy in Dehradun embarked on an invigorating journey to the riverside. This excursion was more than just an escape from the rigors of academia; it was a day of exploration, camaraderie, and the sheer delight of taking a refreshing dip in the river's pristine waters.

The adventure began with a sense of anticipation as the students departed from the santula mata temple. The road led them through picturesque landscapes, with the grandeur of the Himalayas as a backdrop. The promise of the riverside's tranquility and the thrill of adventure hung in the air.As the students reached their destination, they were greeted by the enchanting sight of the meandering river. The crystal-clear waters shimmered under the sun's gentle caress, beckoning them to partake in the magic of nature. A sense of awe enveloped the group as they took in the tranquil beauty that surrounded them.

The day's adventure involved not only the river's cool embrace but also playful moments along its banks. Students engaged in activities like frisbee, stone-skipping, and even a friendly water game. Laughter echoed through the air as they reveled in the joy of nature's playground.No riverside trip is complete without a riverside picnic. The students laid out their picnic blankets, savoring a delicious food, fresh juice, and snacks. The sound of laughter and the aroma of food wafting through the air created a memorable dining experience.

With the sun's warmth enveloping them, the students couldn't resist the allure of the river's cool waters. The sensation of the water against their skin was invigorating, refreshing their spirits.Amidst the serenity of the riverside, students took a moment to connect with nature on a deeper level. Some chose to simply sit by the riverbanks, soaking in the sights and sounds, while others explored the nearby woods, admiring the vibrant flora and fauna.

The riverside trip was a testament to the power of nature to refresh the body, mind, and spirit. It was a day of adventure and laughter, of camaraderie and reflection, and of immersing oneself in the beauty of the natural world.As the students returned to the academy, they carried with them the memories of a day filled with joy and rejuvenation. This riverside sojourn underscored the academy's commitment to holistic growth and the recognition that sometimes, the greatest lessons and moments of self-discovery occur when one is immersed in nature's embrace by the riverside.

National News

K'taka's Hoysala temples added to UNESCO's World Heritage site list

Sacred Ensembles of the Hoysalas, the group of Hoysala temples in Karnataka have made it to the list of UNESCO's World Heritage List. Hoysala architecture was a building style of the Hoysala empire in the 12th and 13th centuries. Temples built during this era include the Channakeshava Temple at Belur and the Hovsaleshwara Temple at Halebidu. The Hoysaleswara temple, also known as the 'Halebidu' temple, stands as a magnificent 12th-century architectural masterpiece dedicated to Lord Shiva, the God of Destruction.

Karnataka:
➢ Chief minister: Siddaramaiah
➢ Capital: Bengaluru (Executive Branch)
➢ Governor: Thawar Chand Gehlot
➢ Districts: 31 (4 divisions)

Shantiniketan included in UNESCO World Heritage list

Shantiniketan has been included in the UNESCO World Heritage list. The decision to include Santiniketan in the list was taken during the 45th session of the World Heritage Committee currently underway in Saudi Arabia. Santiniketan becomes the 41st UNESCO World Heritage Site in India and the third in West Bengal, after the Sundarbans National Park and the Darjeeling Mountain Railways. Last year, the state's Durga Puja got space in "Intangible Cultural Heritage of humanity" under UNESCO.

Shantiniketan:
Santiniketan was established by poet and Nobel Laureate Rabindranath Tagore' father Maharshi Debendranath Tagore as a meditation centre. It was later expanded by Rabindranath into a university town, with the establishment of the Visva-Bharati University in 1921.

Madhya Pradesh CM unveils Adi Shankaracharya statue at Omkareshwar

MP Chief Minister Shivraj Singh Chouhan unveiled the 108-foot-tall 'Statue of Oneness' of Adi Shankaracharya at Omkareshwar. The statue depicts Shankaracharya as a 12-year-old child when he is said to have visited Omkareshwar. The government has invested Rs 2,200 crore to develop the temple town located on the Mandhata island of Khandwa district, which will form an important tourism circuit, along with Ujjain, Maheshwar and Mandu religious towns.

About the statue:
The multi-metal Adi Shankaracharya statue is installed atop Mandhata Parvat hill, facing southwards towards the Narmada river. The idol weighs 100 tons and has been installed on a 75-foot-high platform. It is made up of bronze that contains 88% copper, 4% zinc and 8% tin and its internal structure is made up of high-quality steel. At the base of the statue is the Shankar Stambh, which features wooden domes and stone pillars with "carvings depicting 32 stories related to Acharya Shankar. "Award-winning painter Vasudeo Kamath, created the conceptual sketch and painting of the statue.

Andhra Pradesh: GI tag for 'Atreyapuram Pootharekulu'

The Department for Promotion of Industry and Internal Trade has announced the issuance of the Geographical Indication tag to "Atreyapuram Pootharekulu. "The 'Atreyapuram Pootharekulu', a sweet made of rice and jaggery. The production of the sweet is confined only to the Atreyapuram village on the banks of the Godavari in Andhra Pradesh. The tag was allotted after Sir Arthur Cotton Pootharekula Sahakara Sangham, a cooperative society, applied for securing a GI tag for the Pootharekulu sweet.

Andhra Pradesh:
➢ Capital: Amaravati
➢ Governor: S. Abdul Nazeer
➢ Chief Minister: Y.S. Jagan Mohan Reddy

Centre launches three game-changing initiatives for farmers focusing on agri-credit and crop insurance

The government will launch a series of transformative initiatives, aimed at revolutionizing agriculture in the country in New Delhi. The transformative initiatives, include Kisan Rin Portal (KRP), Door to Door KCC Campaign, and Weather Information Network Data

Systems (WINDS) Manual. These initiatives aim to amplify financial inclusion, streamline data utilization, harness technology, and enhance the livelihoods of the agricultural community.

KRP:

The Kisan Rin Portal (KRP), developed in collaboration with multiple government departments, is poised to revolutionize access to credit services under the Kisan Credit Card (KCC). This digital platform offers a comprehensive view of farmer data, loan disbursement specifics, interest subvention claims, and efficient agriculture credit.

KCC:

The Ghar Ghar Kisan Credit Card (KCC) Abhiyaan is an ambitious campaign to extend the benefits of the Kisan Credit Card (KCC) Scheme to every farmer across India. This campaign aims to achieve universal financial inclusion, ensuring that every farmer has unhindered access to credit facilities. The Ministry said total number of operative KCC accounts as of March 2023 is 7. 35 Crores with total sanctioned limit of 8. 85 lakh crores rupees.

WINDS:

The Weather Information Network Data Systems (WINDS) initiative is an instrumental innovation, that leverages advanced weather data analytics to provide stakeholders with actionable insights on weather.

Social welfare scheme "Kalaignar Magalir Urimai Thogai Thittam" to be launched by Tamil Nadu Government

Tamil Nadu government will provide monthly assistance of Rs 1,000 to more than 1 crore female family heads through Kalaignar Magalir Urimai Thogai Thittam. Chief Minister MK Stalin officially announced the scheme, with the launch date set for September 15. The scheme aims to provide Rs 1,000 per month to 1. 06 crore eligible women who are heads of families.

Tamil Nadu:
- Capital: Chennai
- Chief minister: M. K. Stalin
- Language: Tamil
- Governor: R. N. Ravi

India declares August 23 as National Space Day in honor of Chandrayaan-3's moon landing

Prime Minister Narendra Modi announced the designation of 23 August as National Space Day in honor of India's Chandrayaan-3 moon landing. The specific spot where Chandrayaan-3 landed on the Moon will be named 'Shivshakti', and the spot where Chandrayaan-2 landed will be called 'Tiranga Point'.

Women's Reservation Bill passed in Parliament

The Women Reservation Bill seeking to guarantee 33% quota for women in Lok Sabha and state assemblies was passed in Parliament. The Union law minister Arjun Ram Meghwal introduced the bill as the 128th Constitutional Amendment Bill.

What does the Bill say

The bill mandates the reservation of seats for women in the Lok Sabha, the lower house of the Parliament. Also the bill extends its provisions to the Legislative Assembly of the National Capital Territory of Delhi in which one-third of the total number of seats filled by direct election in the Delhi Assembly (including those reserved for women belonging to Scheduled Castes) are also reserved for women. The bill specifies that the provisions related to the reservation of seats for women in the Lok Sabha, State Assemblies, and the Delhi Assembly will come into effect after a delimitation exercise is conducted. The bill allows for the rotation of reserved seats for women in the Lok Sabha, State Assemblies, and the Delhi Assembly after each subsequent delimitation exercise.

6 Creatures Guard 6 Gates Of New Parliament Building, What They Symbolise

The six gates of new Parliament building are named after real and mythological creatures. Each door boasts a sculpture of the creature it is named after.

Gaja Dwar

Named after the majestic animal, elephant which represents intellect, memory, wealth and wisdom, this gate is on the north side of the building. According to vaastu shastra, sculptures of elephants on gates bring prosperity and happiness.

Ashwa Dwar

Ashwa Dwar is named after the horse. A horse symbolises power, strength and courage -- qualities desirable in governance.

Garuda

The third gate, which is also the eastern entrance to the new Parliament building, is named after Garuda, the king of birds. Garuda is mythologically believed to be the mount of Lord Vishnu, symbolising power and dharma (duty).

Makara Dwar

Facing the entrance to the old Parliament building, this gate is named after the legendary sea creature, which is a combination of different animals. Makara sculptures at the entrance are commonly seen in Hindu and Buddhist monuments and are associated with protectors.

Shardula

The fifth gate is named after another mythological creature - Shardula, which has the body of a lion, but the head of a horse, elephant or parrot. The government note says the presence of Shardula on the new parliament building's gate symbolises the power of the people of the country.

Note : The six gates are Gaja Dwar, Ashwa Dwar, Garuda Dwar, Makar Dwar, Shardula Dwar and Hamsa Dwar

PM Modi launches PM Vishwakarma Scheme

In commemoration of 'Vishwakarma Jayanti', Prime Minister Narendra Modi launched the 'PM Vishwakarma' scheme for the benefit of traditional artisans. Under the PM Vishwakarma scheme, the government will provide up to ₹3 lakhs loan without any (bank) guarantee. It has also been ensured that the interest rate is also very low. Govt has decided that ₹1 lakh loan will be given in the beginning and when it is repaid, govt will provide additional ₹2 lakhs loan to the Vishwakarma partners.

Salem sago gets GI tag

The Salem Starch and Sago Manufacturers Service Industrial Cooperative Society Ltd (popularly called as SAGOSERVE) received Geographical indication tag or GI tag for Salem sago recently. Sago, derived from raw tapiocas, is in the form of small hard globules or pearls and is pearl white in colour. Tapioca is a major horticulture crop cultivated on nearly 3 lakh hectares in Tamil Nadu, producing 60 lakhs tonnes of the crop. Sago was produced first in Salem district, which is the main centre for sago production in the country, on a cottage scale basis. Sago is manufactured from the wet starch powder crushed from tapioca roots. The wet starch powder is used for producing sago and the dry powder has been used as a raw material for industrial purposes.

Himachal CM Sukhu launches SABAL Yojna to empower specially-abled children

Himachal Pradesh CM Sukhvinder Singh Sukhu launched the Mukhya Mantri Sporting Abilities, Rebuilding Aspirations and Livelihood Scheme (SABAL). The SABAL scheme intends to take care of specially-abled children in around 400 schools across Hamirpur, Solan and Shimla districts.

Himachal Pradesh:
- Capital: Shimla, Dharamshala (winter)
- Governor: Shiv Pratap Shukla
- Chief minister: Sukhvinder Singh Sukhu

Koraput Kalajeera Rice Gets GI Tag

Odisha's 'Koraput Kalajeera Rice', which is famous for its unique aroma and nutritional value, was granted the Geographical Indications (GI) status. The ancestors of the present tribal communities of Koraput district have domesticated the rice in the region for thousands of years, contributing to the conservation of the crop.

Govt forms high-level committee to examine One nation, One election

The Government of India has constituted an eight-member high-level committee to examine One Nation, One Election. Former President Ram Nath Kovind has been appointed as Chairman of the committee. Other members are HM Amit Shah, Congress MP Adhir Ranjan Chowdhury, Former Rajya Sabha member Ghulam Nabi Azad, Former Chairman 15th Finance Commission N. K. Singh and others. Law and Justice Minister Arjun Ram Meghwal will attend the meetings of the committee as special invitee.

Working:

The high level committee will examine and make recommendation for holding simultaneous elections of Lok Sabha, State Legislative Assemblies, Municipalities and Panchayats, keeping in view the existing framework under the Constitution and other statutory provisions.

Bhaderwah Rajma & Ramban Sulai Honey of Jammu and Kashmir get GI Tag

Two world-famous local specialty products of Jammu and Kashmir, namely Bhaderwah Rajma and Ramban Sulai Honey have earned coveted Geographical Indication (GI) Tag. The Department of Agriculture & Farmers Welfare, Jammu, initiated the process for GI Tagging of these products. GI tagging will also promote the economic prosperity of locals in the geographical territory and will act as a tool for social economic growth of the producer. A Geographical Indication Tags is a trade name or label applied to a particular product that designates a particular geographic region or country of origin. The tag's primary feature is its uniqueness, which guards against any form of third-party misuse.

Jammu and Kashmir:
➢ Union territory: 31 October 2019
➢ Capitals: Srinagar (May–October), Jammu (November–April)
➢ Lieutenant Governor: Manoj Sinha

Karnataka CM Siddaramaiah launched 'Gruha Lakshmi' scheme

The Karnataka government launched the 'Gruha Lakshmi' women's financial aid scheme in Mysuru. Under this scheme, about 1. 1 crore women heads of family will get ₹2,000 each at a function in Mysuru. The Karnataka government has earmarked ₹17,500 crore for 'Gruha Lakshmi' programme in the current financial year. 'Gruha Lakshmi' scheme is one of the five pre-poll 'guarantees' of the Congress. Karnataka government has already implemented three of the five 'guarantees' (pre-poll promises) -- 'Shakti', 'Gruha Jyothi' and 'Anna Bhagya' -- and 'Gruha Lakshmi' is the fourth one. The fifth one is the 'Yuva Nidhi' scheme that promises to provide unemployment allowance to the state's youth.

Gruha Lakshmi Scheme:
For this scheme, Karnataka has allocated a substantial ₹32,000 crore annually to support this scheme. Women listed as family heads on Antyodaya, Below Poverty Line (BPL), and Above Poverty Line (APL) ration cards are eligible for the Gruha Lakshmi Scheme. Only one woman in a family will be the beneficiary of this scheme. Women government employees taxpayers and families whose husbands pay income tax or file GST returns are not eligible for the scheme.

Gujarat government announces 27% reservation for OBCs in local bodies like panchayats, municipalities & civic corporations

The Gujarat government announced a 27 percent reservation for Other Backward Classes in local bodies like panchayats, municipalities, and civic corporations. In the Panchayats Extension to Scheduled Areas notified areas, the reservation for OBCs will continue to be 10 percent to protect the interest of tribals. The existing quota for Scheduled Castes and Scheduled Tribes will remain unchanged and there has been no breach of the 50 percent reservation ceiling.

Gujarat:
➢ Capital: Gandhinagar
➢ Chief minister: Bhupendrabhai Patel
➢ Governor: Acharya Devvrat

MP announced Ladli Behna Yojana aid hike, 35% job reservation for women

Madhya Pradesh Chief Minister Shivraj Singh Chouhan raised the financial aid given to women in the Ladli Behna scheme from Rs 1,000 to Rs 1,250 per month. He also announced 35 percent reservation for them in government jobs and provided gas cylinders for Rs 450. Under the programme, women between the ages of 23 and 60, who do not pay income taxes and whose families make less than Rs 2. 5 lakh annually, receive Rs 1,000 every month. Women will be given free land in villages and plots in cities that have been cleared of encroachments.

Madhya Pradesh:
➢ Capital: Bhopal
➢ Governor: Mangubhai Chhaganbhai Patel
➢ Chief Minister: Shivraj Singh Chouhan

Mukhyamantri Atmanirbhar Asom Scheme launched by the Chief Minister of Assam

Mukhyamantri Atmanirbhar Asom Scheme is a government initiative launched by the Chief Minister of Assam, Dr. Himanta Biswa Sarma. It aims to provide employment opportunities and financial assistance to the unemployed youth of the state. Its primary goal is to connect 2 lakh eligible individuals in two years, with a focus on assisting 1 lakh people in the financial year 2023-2024 and another 1 lakh people in the financial year 2024-2025. The scheme has an online registration portal launched on September 23, 2023.

Mukhyamantri Atmanirbhar Asom Scheme:

➢ Financial assistance for 2 lakh recipients with interest-free loan and training:-

➢ Assam Atmanirbhar Yojana aims to provide assistance to 2 lakh individuals in the next two years.

➢ In the financial year 2023-2024, 100,000 recipients will receive an amount of Rs 1 lakh, and an additional 100,000 will receive the same amount in the next financial year, depending on their performance.

➢ Since the government funds the loan, no interest will be charged on the principal amount.

➢ Beneficiaries are not required to repay the loan for a period of five years. The specific loan tenure and repayment schedule have not yet been determined.

➢ Selected applicants will undergo a one-month training program to enhance their skills in management, accounting, and business.

PM Narendra Modi to lay foundation stone for new state-of-the-art cricket stadium in Varanasi

The nation is all set to get another stadium added to its long list as Prime Minister Narendra Modi will lay the foundation stone for the state-of-the-art international cricket stadium in the Ganjari Area of Varanasi. The cost of the stadium is estimated to be around INR 450 crore which will be full of modern amenities with a seating capacity of around 30,000. The stadium has been designed by Larsen & Toubro (L&T) and drawings of the project has been finalised. In the next steps, UPCA (Uttar Pradesh Cricket Association) will approve the project and attain no-objection certificates from various departments such as forest and ground water. The stadium's architectural design will draw inspiration from Lord Shiva. It will incorporate elements such as floodlights in the shape of tridents, roofing with crescent-shaped covers, seating arrangements resembling steps found in ghats, and metallic sheets on the facade shaped like Bilvipatra leaves. The government has allocated INR 120 crore for land acquisition. The Uttar Pradesh government has disclosed that they allocated ₹121 crore for the land acquisition required for this project. The construction of the stadium, which will have a seating capacity for 30,000 spectators, will be funded by the Board of Control for Cricket in India (BCCI) at a cost of ₹330 crore.

The real test is not whether you avoid this failure, because you won't. It's whether you let it harden or shame you into inaction, or whether you learn from it; whether you choose to persevere.

"Don't be distracted by criticism. Remember—the only taste of success some people get is to take a bite out of you."

A Journey of Faith and Adventure -Trip to Santula Mata Temple with Parmanu Defence, Dehradun

Nestled within the embrace of the awe-inspiring Himalayan range lies the Santula Mata Temple, a place of immense spiritual significance and natural beauty. A group of students from the esteemed Parmanu Defence Academy in Dehradun embarked on a memorable trip to this sacred destination. This journey combined reverence for the divine with a taste of adventure amidst the pristine Himalayan landscape.The adventure began with a picturesque drive through the winding mountain roads that offered panoramic views of the Himalayas. As the bus meandered through lush forests and serene valleys, the students marveled at the breathtaking scenery that unfolded before them. The journey itself was a testament to the splendor of nature.

Upon reaching the temple, the students were greeted by the tranquil surroundings and the aura of spirituality that hung in the air. The Santula Mata Temple is situated on a hill, offering a commanding view of the Himalayan peaks. It is dedicated to the goddess Santula, revered by locals and pilgrims alike.The students participated in the temple rituals, offering their prayers and seeking blessings.The atmosphere was filled with devotion as they joined the local devotees in the age-old customs and traditions that have been preserved for generations. The experience was a blend of faith and cultural immersion.

The adventure didn't stop at the temple; it extended to a scenic hike through the Himalayan trails. Led by staff members , the students trekked through lush forests, crossing streams and embracing the serenity of the mountains. Along the way, they encountered the diverse flora and fauna that call this region home.

The trip included a delightful picnic amidst nature's bounty. Students relished local cuisine and shared stories, strengthening the bonds of camaraderie. The sound of laughter and the sight of young minds connecting with nature added an element of joy to the day's journey.As the group descended from the mountains, they reflected on the importance of resilience and the harmony of nature. The trip had not only deepened their spiritual connection but also instilled a profound appreciation for the beauty of the natural world.

The students' trip to Santula Mata Temple with Parmanu Defence, Dehradun, was more than a simple excursion; it was a transformative experience that blended spirituality, adventure, and the awe-inspiring Himalayan landscape. It reaffirmed the academy's commitment to holistic growth and a deep connection with both culture and nature.As the students returned to Dehradun, they carried with them not only the blessings of Santula Mata but also the memories of a journey that had enriched their souls and broadened their horizons. This adventure will be cherished as a chapter of spiritual exploration and an embrace of the Himalayan mystique that will resonate in their hearts for years to come.

International Events

Britain, France, Germany to retain ballistic missile and nuclear proliferation-related sanctions on Iran

Britain, France and Germany said that they would retain ballistic missile and nuclear proliferation-related sanctions on Iran that were set to expire in October under the 2015 Iran nuclear deal. In a joint statement, the three European allies known as E3 that had helped negotiate the nuclear deal, said they would retain their sanctions in a "direct response to Iran's consistent and severe non-compliance" with the accord, also known by its official name as Joint Comprehensive Plan of Action or JCPOA. The sanctions ban Iran from developing ballistic missiles capable of delivering nuclear weapons and bar anyone from buying, selling or transferring drones and missiles to and from Iran. They also include an asset freeze for several Iranian individuals and entities involved in the nuclear and ballistic missile program. Iran has violated the sanctions by developing and testing ballistic missiles and sending drones to Russia for its war on Ukraine.

US affirms to host 2026 G20 Summit

The US has reaffirmed that it will host the 2026 G20 Summit. The US said it is committed to the G20 and to building on the progress made in India's G20 Presidency, starting with Brazil's Presidency in 2024 and South Africa's Presidency in 2025. The US "will host the G20 in 2026 to show its steadfast commitment to the G20 initiatives for a global geopolitical and economic order based on equity and justice".

India becomes 13th country that can issue internationally accepted OIML Certificates

India has become the 13th country in the world that can issue Internationally Accepted OIML (International Organisation of Legal Metrology) Certificates. Domestic manufacturers can now get their weighing and measuring instruments tested in the country and sell in the International market. It is a single certificate accepted worldwide and reduces redundancy, and saves resources. He added that this system ensures uniformity and trust in measurement worldwide and saves resources by avoiding repeated certifications.

Now Indian manufacturers or their agents can obtain OIML Certificates for their measuring instruments from the Indian OIML Issuing Authority which is Legal Metrology Division, Department of Consumer Affairs.

US State Georgia officially declares October as 'Hindu Heritage Month'

In an official proclamation, Governor of Georgia, Brian Kemp has declared October as 'Hindu Heritage' month. This declaration highlights the intention to celebrate Hindu heritage by emphasizing its rich culture and the diverse spiritual traditions that originate from India. Hindu Heritage Month (HHM) serves as a worldwide endeavor with the objective of spotlighting Hinduism as a longstanding tradition. The proclamation further read that Hinduism is the third-largest religion in the world with one billion devotees worldwide and around three million in the United States.

Georgia:
➢ Capital: Tbilisi
➢ President: Salome Zourabichvili
➢ Prime Minister: Irakli Garibashvili
➢ Currency: Georgian lari

India hand over B20 presidency to Brazil to host G20 in 2024

India has handed over the B20 presidency to Brazil to host G20 in 2024. According to B20 India Chair N Chandrasekaran, India's B20 Presidency under the its G20 Presidency worked under the theme of Vasaudeva Katumbakam (One Earth, One Family, One Future). During this period India worked on nine important themes which included empowerment of women and youth, transition towards an Artificial Intelligence world, building a global resilient supply chain and financing for the global economic recovery. The presidency of India's B20 has been recognized for its effective process, engagement, and consensus-building in generating 54 policy recommendations over the last nine months.

Brazil:
➢ Capital: Brasília
➢ President: Lula da Silva

Banking & Economy

Adani Group receives certification for India's largest wind turbine

Adani Wind, the wind energy solutions division of Adani New Industries Limited (ANIL) announced that its 5. 2 MW Wind Turbine Generator (WTG), which is India's largest, has received type certification from WindGuard GmbH. The certification enables Adani Wind to start series production for global markets.

RBI to discontinue Incremental Cash Reserve Ratio

The Reserve Bank decided to discontinue the Incremental Cash Reserve Ratio (I-CRR), which was put in place to absorb surplus liquidity following the withdrawal of Rs 2,000 currency notes, in a phased manner beginning. On August 10, the RBI mandated banks to maintain an incremental cash reserve ratio (I-CRR) of 10 per cent on the increase in their net demand and time liabilities (NDTL) between May 19, 2023 and July 28, 2023. The measure was intended to absorb the surplus liquidity generated by various factors, including the return of Rs 2,000 notes to the banking system.
RBI:
- Governor: Shaktikanta Das
- Founded: 1 April 1935
- Headquarters: Mumbai

RBI directs banks to release property documents within 30 days of loan repayment

India's central bank, The Reserve Bank of India (RBI), has said that banks and financial institutions will have to return all original property documents within 30 days of full repayment of a loan by a borrower. In case of delay, the lender will have to compensate the borrower at the rate of Rs 5,000 per day of delay. The RBI said a borrower will have the option of collecting the original property documents either from the banking outlet or the branch where the loan account was serviced, or any other office of the RE where the documents are available, as per their preference.
Why the new directives?
The RBI observed that the REs follow divergent practices in the release of property documents, which leads to customer grievances and disputes. The

directions have been issued to address these issues and to promote responsible lending conduct.

Hitachi Payment Services launches India's first-ever UPI-ATM with NPCI

Hitachi Payment Services, a subsidiary of Japan-based Hitachi Ltd, announced the launch of India's first-ever UPI-ATM as a White Label ATM (WLA) named Hitachi Money Spot UPI ATM, with the National Payments Corporation of India (NPCI). The ATM will offer cardless cash withdrawals, eliminating the need for physical cards. A UPI-ATM allows users to withdraw cash from multiple accounts using the United Payments Interface app. WLAs are operated by non-banking entities. It will drive financial inclusion by facilitating easy access to banking services in areas where traditional banking infrastructure and card penetration is limited.
Note: Hitachi Payment Services is the only White Label ATM operator to offer a cash deposit facility.

IDFC First Bank makes digital rupee app interoperable with UPI QR codes

IDFC FIRST Bank has unveiled a new enhancement, the integration of UPI QR Codes with its Central Bank Digital Currency app, the IDFC FIRST Bank Digital Rupee. This step aimed to enhance the adoption of digital rupee and boost its utilisation. The new feature simplifies the process for merchants to accept payments made with the digital rupee. This development allows individuals to easily use digital rupees for payments through existing UPI QR codes at various merchant outlets. The digital rupee is an initiative by the Reserve Bank of India launched last year. This digital form of legal tender is issued by the central bank and shares the essential attributes of physical currency, such as trustworthiness, security, and transaction finality with instantaneous settlement in the digital realm.
IDFC First Bank:
IDFC FIRST Bank (formerly IDFC Bank) is an Indian private sector bank formed by the merger of the banking arm of Infrastructure Development Finance Company and Capital First, an Indian non-bank financial institution.
- Founded: October 2015

➤ Headquarters: Mumbai, Maharashtra, India
➤ MD & CEO: V. Vaidyanathan

RBI expands scope of UPI by including credit lines as funding account

Reserve Bank of India (RBI) has expanded the scope of UPI by including credit lines as a funding account. Under this facility, payments through a pre-sanctioned credit line issued by a scheduled commercial bank to individuals, with prior consent of the individual customer, are enabled for transactions using the UPI system. Banks may, as per their board approved policy, stipulate terms and conditions for use of such credit lines. The terms may include, among other items, credit limit, period of credit, rate of interest, etc. This initiative can help in development of unique products for Indian markets. .

RBI:
The bank's current governor is Shaktikanta Das. There are currently four deputy governors Mahesh Kumar Jain, M. Rajeshwar Rao, Michael Patra and T. Rabi Shankar.
➤ Headquarters: Mumbai, Maharashtra, India
➤ Established: 1 April 1935

Axis Bank launches 'Infinity Savings Account' with zero domestic transaction fees

Axis Bank launched a new savings account variant – 'Infinity Savings Account' to cater to digitally savvy customers who are frequent adopters of subscription-based models. This savings account offers Axis Bank's customers with exclusive privileges, such as waived Average Monthly Balance (AMB) requirement, complimentary debit cards and waiver of all the domestic charges against a small monthly recurring fee of Rs 150 or annual fee of Rs 1,650.

Axis Bank:
➤ MD & CEO: Amitabh Chaudhry
➤ Chairperson: Shri Rakesh Makhija

RBI approves merger of Akola Merchant Co-operative Bank with Jalgaon Peoples Co-operative Bank

The Reserve Bank of India has given the green light to the amalgamation of Akola Merchant Co-operative Bank Ltd, located in Akola, Maharashtra, with The Jalgaon Peoples Co-operative Bank Ltd, situated in Jalgaon, Maharashtra. This merger has been sanctioned by the RBI, exercising its powers as per Sub-Section (4) of Section 44A in conjunction with Section 56 of the Banking Regulation Act, 1949. The branches of Akola Merchant Co-operative Bank will continue operations as branches of The Jalgaon Peoples Co-operative Bank. This move is expected to contribute to the strengthened banking landscape in the region and enhance the services offered to customers of both institutions.

RBI Policy Rates:
➤ Repo Rate: 6. 50%
➤ Bank Rate: 5. 15%
➤ Reverse Repo Rate: 3. 35%
➤ Marginal Standing Facility Rate: 6. 75%

Axis Bank launches NEO for Business transaction banking platform for MSMEs

Axis Bank has launched a transaction banking platform for the Indian Micro, Small and Medium Enterprises (MSMEs) called NEO for Business. It will cater to the "real, current, and emerging" transaction needs of Indian MSMEs. The NEO for Business platform offers features like digital self on-boarding, bulk payments, GST compliance invoicing, payment gateway integration, end-to-end transaction tracking, auto reconciliation, cash flow reports, and recurring collections, among others. NEO by Axis Bank' offers a range of products and services for its corporate customers and clients, including internet banking, mobile app and APIs.

S&P retains India's FY24 growth forecast at 6% on slowing world economy

S&P Global Ratings retained India's growth forecast for current fiscal at 6 per cent citing slowing world economy, rising risk of subnormal monsoons and delayed effect of rate hike. The US-based agency sees the recent spike in vegetable price inflation as being temporary, but revised up the full fiscal retail inflation forecast to 5.5 per cent, from 5 per cent earlier, on higher global oil prices. Indian economy grew 7.2 per cent in 2022-23 fiscal year which ended March 2023. While retaining its growth forecast for the current fiscal at 6 per cent, S&P also maintained that India's economy will grow 6.9 per cent in both 2024-25 and 2025-26 fiscal years.

A Journey of Devotion and Discovery Amidst the Mystical Aura of Tapkeshwar Mahadev

In the heart of the Himalayan foothills, where the Tamsa River gurgles and the forests echo with ancient whispers, a group of students from the Parmanu Defence Academy embarked on a sacred pilgrimage to the revered Tapkeshwar Mahadev Temple in Dehradun. This spiritual expedition was not only a testament to their reverence for the divine but also an opportunity for self-discovery in the mystical surroundings of this sacred abode.

A Divine Destination:
The journey began with a sense of anticipation and reverence. The Tapkeshwar Mahadev Temple, nestled in the lap of the Shivalik range, is renowned for its deep spiritual significance. Dedicated to Lord Shiva, this temple is unique for its location within a natural cave, with the Tamsa River flowing gently nearby.

Spiritual Awakening:
Upon entering the temple complex, the students were enveloped in an aura of tranquility and devotion. The cave temple itself was adorned with age-old Shiva lingams and illuminated by the soft glow of oil lamps. The rhythmic chants of prayers filled the air as the students joined the congregation in seeking the blessings of Lord Shiva.

Exploring the Mysteries:
After the religious ceremonies, the students had the opportunity to explore the cave's inner sanctum, which housed naturally formed stalactites and stalagmites, adding an element of wonder to their spiritual journey. It was a chance to witness the divine forces of nature intertwined with their faith.

Nature's Harmony:
Beyond the temple's spiritual significance, the surrounding natural beauty was awe-inspiring. The students took a moment to sit by the banks of the Tamsa river, where the crystal-clear waters flowed serenely. The symphony of rustling leaves and flowing water provided a serene backdrop for introspection and contemplation.

Local Culture and Cuisine:
The trip also allowed the students to engage with the local culture. They interacted with the friendly locals, sampled regional cuisine, and learned about the rich history and legends associated with the temple. The fusion of spirituality and culture added depth to their experience.

Reflection and Unity:
As the day drew to a close, the students gathered to share their thoughts and reflections. They spoke of the sense of peace and unity they had experienced, not only with each other but with the divine forces that seemed to embrace them throughout the journey.
The pilgrimage to Tapkeshwar Mahadev Temple was more than a physical journey; it was a spiritual odyssey that deepened the students' connection with the divine and with each other. It underscored the Parmanu Defence Academy's commitment to nurturing not only physical prowess but also the inner strength and character of its students.

As we departed from this sacred place, the students carried with them not only the blessings of Lord Shiva but also the memories of a journey that had enriched their souls and renewed their sense of purpose. This spiritual expedition was a testament to the power of faith and the transformative effect of a pilgrimage to a place as sacred and mystical as Tapkeshwar Mahadev Temple.
Om Namah Shivaay !!!!!!!!

MOU's Signed

Sri Lanka's Transport Ministry signs contract with India's IRCON International Limited for Signalling system

Sri Lanka's Transport and Highways Ministry has signed a contract with India's IRCON International Limited for the Design, Installation, Testing, and Commissioning of a Signalling system along the Sri Lanka Railways' Maho to Anuradhapura route, spanning 66 kilometers. The contract, valued at 14. 90 million USD. The project, which will be executed under an Indian Line of Credit of 318 million USD, is set to bolster transportation links and foster economic growth.

IRCON International Limited:
➤ Industry: Railway infrastructure
➤ Founded: 27 April 1976
➤ Headquarters: New Delhi, India
➤ Chairman & MD: Yogesh kumar Mishra

Nabard partners with UNDP India to boost data-driven innovations in agriculture

UNDP India and the National Bank for Agriculture and Rural Development (Nabard) signed a Memorandum of Understanding to co-create data-driven innovations in agriculture and food systems to support smallholder farmers. The partnership aims at enhancing and disseminating collaborative digital public goods like DiCRA (Data in Climate Resilient Agriculture).

Nabard:
➤ Chairman: Shri Shaji K V
➤ Established: 12 July 1982
➤ Headquarters: Mumbai

India-Saudi Arabia sign MoU in several areas including energy, digitalization, and investment

India and Saudi Arabia have signed eight agreements in several areas including energy, digitalization, and investment. Both sides extended their full support to the early implementation of the west coast refinery projects. India and Saudi Arabia have also agreed to expedite the India-GCC Free Trade Agreement negotiations which they felt would act as a catalyst for further strengthening economic cooperation between the two sides. India and Saudi Arabia also agreed to strengthen cooperation in the FinTech field and explore trading in the local currencies.

Saudi Arabia
➤ Capital: Riyadh
➤ Currency: Saudi Riyal
➤ King: Salman bin Abdulaziz Al Saud
➤ Founded: 23 September 1932

Saudi Arabia, US sign MoU to establish Asia-Europe green transit corridors

Saudi Arabia has announced the signing of a memorandum of understanding (MoU) with the US to establish intercontinental green transit corridors. The MoU, signed, provides a framework for developing a protocol for establishing green transit corridors through the kingdom to connect Asia and Europe. This project aims to facilitate the transit of renewable electricity and clean hydrogen via transmission cables and pipelines, as well as constructing rail linkages. It will also help enhance energy security, promote the digital economy, trade and transport of goods. '

Saudi Arabia:
➤ Capital: Riyadh
➤ Currency: Saudi Riyal
➤ King: Salman bin Abdul Aziz Al Saud

UK PM Rishi Sunak signs new strategic pact with Singapore in India

British Prime Minister Rishi Sunak has agreed on a new strategic partnership with Singapore during a meeting with Prime Minister Lee Hsien Loong on the margins of the G20 Summit in New Delhi. The pact is expected to give Singaporean companies more confidence to invest in the UK and vice-versa, creating jobs and growth for both economies.

Singapore:
➤ Prime Minister: Lee Hsien Loong
➤ Capital: Singapore
➤ Currency: Singapore dollar (S$)

Viacom18 secures exclusive media rights for BCCI in India for Rs 5,963 cr

Leading media & entertainment firm Viacom18 has bagged streaming and broadcast rights for all domestic

and international cricket in India for five years from September 2023 to March 2028 for a consideration of Rs 5,963 crore. Reliance-backed Viacom18 had earlier acquired digital rights for IPL for the 2023-27 cycle for a whopping Rs 20,500 crore. This addition of BCCI International and Domestic Cricket includes International Men's, Women's matches, and domestic first-class competitions like the Ranji Trophy, Duleep Trophy, Deodhar Trophy, and Syed Mushtaq Ali Trophy, among others.

Viacom18:
- CEO: Jyoti S. Deshpande
- Parent organization: TV18
- Subsidiaries: Reliance Storage Limited, Viacom18 Studios
- Headquarters: Mumbai
- Founded: November 2007

Apple-backed Globalstar signs $64 mn launch pact with SpaceX

Apple is reimbursing Globalstar for 95 per cent of the capital expenditures related to the satellites, including the launch costs. The tech giant would use 85 per cent of Globalstar's network capacity to provide emergency satellite connectivity for iPhones outside of cellular networks. The Globalstar launches are scheduled for 2025 and will send at least 17 new satellites to the low-Earth orbit. Globalstar entered into a $327 million purchase agreement with MDA for those satellites in February last year.

Globalstar:
Globalstar, Inc. is an American satellite communications company that operates a low Earth orbit satellite constellation for satellite phone and low-speed data communications. The Globalstar second-generation constellation consists of 25 low Earth orbiting satellites.
- Headquarters: United States
- CEO: David Kagan
- Founded: 24 March 1991

Vistara-Air India merger gets CCI approval

The Competition Commission of India (CCI) approved the merger of Vistara-owner Tata Singapore Airlines Limited (SIA) Airlines with Air India. The Tata group had announced last November that as part of the merger, SIA will invest ₹2,059 crore in Air India. Post the consolidation, SIA will hold 25. 1% shareholding in Air India. The deal is to be completed by March 2024. TSAL is a joint venture between the Tata Group and the Singapore Airlines with the former holding 51% and the latter 49%. Vistara is a joint venture of Tata Sons and SIA. Tata Sons holds 51 per cent, and Singapore Airlines own 49 per cent. Talace Private Limited, a fully owned subsidiary of Tata Sons, owns air India.

Vistara:
- CEO: Vinod Kannan
- Parent organization: Tata Sons
- Headquarters: Gurugram
- Founders: Singapore Airlines, Tata Sons
- Founded: 5 November 2013, New Delhi

Amazon's AWS ties up with ISRO to advance its AI capabilities

Cloud behemoth Amazon Web Services has signed a strategic MoU with the ISRO and Indian National Space Promotion and Authorization Centre (IN-SPACe) to support space-tech innovations through cloud computing. this collaboration will give space start-ups, research institutes and students access to cutting edge cloud technologies that accelerate the development of new solutions in the space sector.

IN-SPACe:
- Formed: 2020
- Headquarters: Ahmedabad, Gujarat, India
- Minister: Narendra Modi, Prime Minister of India and Minister of Space
- Deputy Minister: Jitendra Singh, Minister of State for Space

IREDA signs MoUs with Union Bank of India and Bank of Baroda

Indian Renewable Energy Development Agency (IREDA) has signed an MOU with the Union Bank of India and Bank of Baroda to co-finance renewable energy (RE) projects. Through the agreement, IREDA will collaborate with the banks in co-lending and loan syndication of emerging and established RE projects. IREDA recently have signed MOU with India Infrastructure Finance Company to co-finance RE projects.

Indian Bank collaborates with IBM to deploy new front-end banking apps

Indian Bank has collaborated with Nasdaq-listed IBM to deploy future ready infrastructure to enhance scalability and agility. IBM has collaborated with Indian Bank, to accelerate its modernisation path with flexible and secure infrastructure for deploying new front-end banking applications. The city-headquartered bank wanted to consolidate its front branch servers for better manageability and availability at Data Centres and Disaster Recovery centres under their 'Project Paradise' initiative. To simplify and improve the security for their private cloud, Indian Bank is using IBM PowerSC for all AIX endpoints to get better support for compliance audits.

Indian Bank :
➢ Founded: 15 August 1907
➢ Founder: S. Rm. M. Ramaswami Chettiar
➢ Headquarters: Chennai, India
➢ MD & CEO: Shanti Lal Jain

Center signs MoU with Adobe to help children learn AI

Union Ministry of Education Dharmendra Pradhan signed an MoU with global software major Adobe to help children develop creative expression in classrooms using the application Adobe Express. Under the programme, Adobe will provide schools across the country with free access to Adobe Express Premium and the professional development of educators.

Adobe Inc.:
➢ Founded: December 1982
➢ Founders: John Warnock, Charles Geschke
➢ Headquarters: California, U. S.
➢ Chairman & CEO: Shantanu Narayen

Israel, Japan agree to promote economic, innovation cooperation

Israel and Japan have signed a document of understanding to promote economic and innovation cooperation. The main Israeli exports to Japan are machinery, electrical equipment, optical and medical devices, chemical products and food products, while Japan mainly exports machinery, electrical equipment, and vehicles to Israel.

Israel:
➢ Capital: Jerusalem
➢ President: Isaac Herzog
➢ Prime Minister: Benjamin Netanyahu
➢ Currency: New shekel

Japan:
➢ Capital: Tokyo
➢ Prime Minister: Fumio Kishida
➢ Currency: Japanese yen

Education ministry partners with Meta to provide Digital and marketing skills to students, and entrepreneurs

Union Minister for Education Dharmendra Pradhan launched a 3-year partnership of his Ministry with Meta to provide Digital and marketing skills to students, educators, and entrepreneurs in New Delhi. Three Letters of Intent (LoI) were exchanged between Meta and NIESBUD, AICTE and CBSE. This will build capacities of the talent pool, and seamlessly connect students, youth, workforce, and micro-entrepreneurs, with futuristic technologies. Under the partnership with NIESBUD, five lakh entrepreneurs will get access to digital marketing skills by Meta over the next three years.

ADB and Fourth Partner Energy Collaborate for Solar Power Plant in Tamil Nadu

The Asian Development Bank and Fourth Partner Energy Private Limited signed a long-term loan of up to 1. 2 billion Rs to construct and operate a 25-megawatt solar photovoltaic-based power plant. The aim is to increase clean and low-cost energy supply to commercial and industrial customers. The power plant, located in Tirunelveli district in the state of Tamil Nadu in India, is expected to generate about 50. 7 gigawatt-hours of electricity annually and will directly sell power to commercial and industrial users.

Asian Development Bank:
➢ Formation: 19 December 1966
➢ Headquarters: Mandaluyong, Philippines
➢ Membership: 68 countries
➢ President: Masatsugu Asakawa

India and Kenya agree to deepen cooperation in maritime security

India and Kenya have agreed to deepen cooperation in maritime security in the Indian Ocean region and joint training in counter insurgency. A Memorandum of Understanding was signed between Goa Shipyard Limited and Kenya Shipyard Limited in the field of capacity building and for collaboration in ship design and construction. Rajnath Singh presented 15 pairs of parachutes manufactured by the Gliders India Limited for the Kenyan Forces. India also extended support towards setting up of an advanced CT scan facility in Kenya.

India and New Zealand signs a Memorandum of Understanding to boost cooperation in civil aviation

India and New Zealand have signed a Memorandum of Understanding (MoU) to boost cooperation in civil aviation. This will cover the scheduling of new routes, code share services, traffic rights and capacity entitlement.

New Zealand:
➢ Capital   Wellington
➢ Governor-General: Cindy Kiro
➢ Prime Minister: Chris Hipkins
➢ Currency: New Zealand dollar

LIC Partners with Saraswat Cooperative Bank to Increase the life Insurance

Life Insurance Corporation of India has recently tied up with Saraswat Cooperative Bank Ltd in its effort to increase the penetration of life insurance through Bancassurance channel in Mumbai. Saraswat Cooperative Bank is the India's largest Urban Cooperative Bank.

LIC:
➢ Chairperson: Siddharth Mohanty
➢ Managing Director: R Doraiswamy, M Jagannath, Tablesh Panday

Maharashtra Govt signs MoU with Germany's professional association football league to help young players

The Maharashtra Government has signed a memorandum of understanding (MoU) with Germany's professional association football league, 'Bundesliga', to build a football team for players under the age of 14. The Bundesliga stands as Germany's premier professional football league, renowned for its rich history and exhilarating football encounters. This partnership holds the potential to rejuvenate the sports landscape, particularly in domains such as under-14 age competitions, comprehensive training programs, and the establishment of a state-of-the-art sports science center.

Nepal and China sign 12 agreements during Prachanda's visit

Nepal and China have signed 12 different agreements and one memorandum of understanding (MoU) during the official visit of Prime Minister Pushpa Kamal Dahal 'Prachanda' to China. The agreements and MoU were signed between the two governments in the presence of PM of both countries.

Highlights of the agreements include:
➢ For collaboration in Planning Commission
➢ For collaboration in green and low carbon development.
➢ For collaboration in agriculture, livestock and fisheries development.
➢ To translate and publish ancient texts of each other.
➢ To cooperate in the fields of science, technology and innovation.
➢ An MoU to review and amend the China Nepal Trade and Payment Agreement reached in 1981.

Education Ministry, AICTE & Microsoft partner to equip Indian students with skills

In an ongoing effort to empower students to be future-ready, the Ministry of Education, All India Council for Technical Education (AICTE) and Microsoft signed a Memorandum of Understanding (MoU) to equip students with skills and exposure to new technologies in the country. This collaboration is aimed at creating skilling and job readiness for students and educators associated with AICTE in areas including AI, Cloud, data science, data analytics, and security. Under the MoU, the tech giant will incorporate Microsoft Learn, the company's centralised training and skilling platform to complement AICTE's curriculum and offer students hands-on experience with Microsoft technologies. Microsoft will also provide students exposure to the Azure Developer Community in India for industry insights and mentorship.

AICTE
➢ Headquarters: New Delhi
➢ Chairman: T. G. Sitharam

PARMANU
DEFENCE ACADEMY
सर्वदा शक्तिशाली

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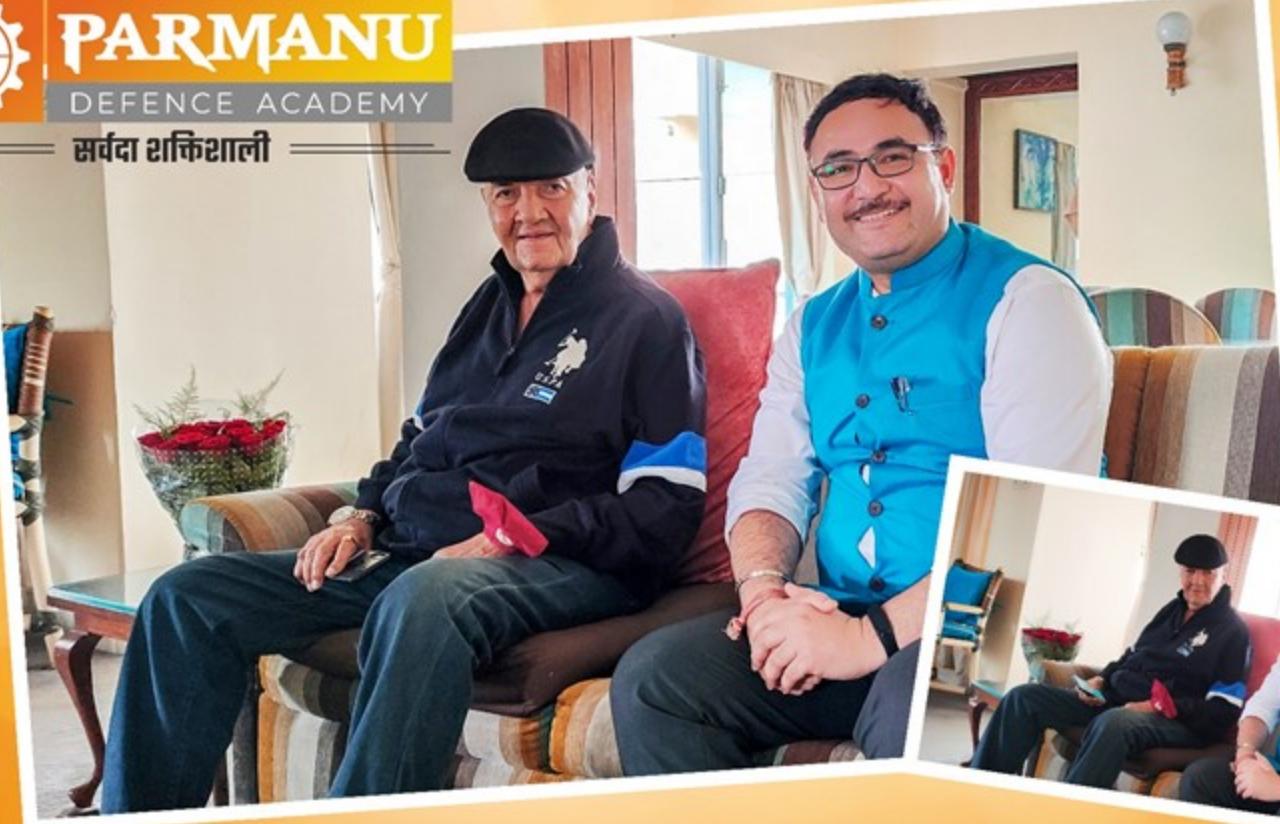
An unforgettable rendezvous with the legendary Bollywood icon
Shri Prem Chopra Ji

Awards & Recognitions

Government comes out with a new set of National Awards in the field of Science, Technology and Innovation known as "Rashtriya Vigyan Puraskar''

The objective of the Rashtriya Vigyan Puraskar (RVP) is to recognize the notable and inspiring contribution made by the scientists, technologists, and innovators individually or in teams in various fields of science, technology and technology- led innovation. The Rashtriya Vigyan Puraskar shall be one of the highest recognitions in the field of science, technology, and innovation in India. Scientists working in any sector who have made distinguished contributions in terms of path-breaking research in any field of science shall be eligible for the awards. People of Indian Origin staying abroad with exceptional contributions benefiting the Indian communities or society shall also be eligible for the awards.

The awards shall be given in following four categories: -
1. Vigyan Ratna (VR) award will recognize lifetime achievements & contributions made in any field of science and technology.
2. Vigyan Shri (VS) award will recognize distinguished contributions in any field of science and technology.
3. Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB) award will recognize & encourage young scientists up to the age of 45 years who made an exceptional contribution in any field of science and technology.
4. Vigyan Team (VT) award to be given to a team comprising of three or more scientists/researchers/innovators who have made an exceptional contribution working in a team in any field of science and technology.

Veteran toastmaster Ronald Olivera Honored with 'Meritorious Diamond Award' in Dubai

Veteran toastmaster, internationally awarded public speaker, motivational speaker, most sought after keynote speaker, student counselor and career coach Ronald Olivera was honoured with 'Meritorious Diamond Award' in Dubai by District 127 of Toastmasters International for his 25 plus years of dedicated service as a Toastmaster. The award was bestowed on him during District 127 Leadership Conclave Organized, at the massive auditorium of Sunmarke School, Jumeira, Dubai. Ronald Olivera is a founder and CEO of Zillion Pathways Coaching Institute, Dubai which nurtures and grooms young adults. Ronald Olivera joined the world renowned Organization Toastmasters International, in the year 1992 as a member of Oasis Toastmaters Club in Al Khobar, Saudi Arabia. In 1993, he won the "Humours Speech Conest" in the Gulf level competition held at Gulf Toastmaster Annual Convention in Bahrain. He went on to win three more Gulf level contests in 1994, 1995 and 1996 in Table Topic (Improptu Speech) Contest, International Speech Contest and Speech evaluation Contest, thus making him the only toastmaster to win four Gulf level contests in four consecutive years. He is also the only toastmaster in the Gulf to win awards in the International Taped Speech Contest held in Toastmasters International, USA.

12 scientists selected for Shanti Swaroop Bhatnagar Awards for year 2022

Country's top annual science prize, Shanti Swaroop Bhatnagar Awards were announced after a gap of two years. his year 12 scientists will get the awards in seven categories. Named after Shanti Swarup Bhatnagar, the first director of CSIR, these awards are given every in seven scientific disciplines - physics, biology, engineering, mathematics, medicine, chemistry, and earth sciences. These awards recognise exceptional researchers under the age of 45 and come with a cash prize of ₹5 lakh.

The list of awardees for SSB awards 2022 includes:
Biology
➤ Ashwani Kumar, CSIR – Institute of Microbial Technology, Chandigarh
➤ M Maddika Subba Reddy, Centre for DNA Fingerprinting and Diagnostics, Hyderabad
Chemistry
➤ Akkattu Biju, Indian Institute of Science, Bengaluru
➤ Debabrata Maiti, IIT Bombay
Earth, Atmosphere, Ocean, and Planetary Sciences

- Vimal Mishra, IIT Gandhinagar

Engineering
- Dipti Ranjan Sahoo, IIT Delhi
- Rajnish Kumar, IIT Madras

Mathematics
- Apoorva Khare, Indian Institute of Science, Bengaluru
- Neeraj Kayal, Microsoft Research Lab, India

Medicine
- Dipyaman Ganguli, CSIR Indian Institute of Chemical Biology

Physics
- Anindya Das, Indian Institute of Science, Bengaluru
- Basudeb Dasgupta, TIFR Mumbai

Assam-based oncologist Ravi Kannan wins 2023 Ramon Magsaysay award.

Assam-based oncologist and a Padma Shri awardee, Ravi Kannan has been named as one of the four recipients of the 2023 Ramon Magsaysay Award, considered Asia's Nobel Prize. He joins other past esteemed winners including Satyajit Ray, MS Subbalaxmi, Mother Teresa and the Dalai Lama. Kannan has been serving as director of Assam's Cachar Cancer Hospital and Research Centre (CCHRC) since 2007. Before that, he was a surgeon at Chennai's Adyar Cancer Institute. To make cancer treatment affordable to poor people, Dr. Kannan has taken many steps in the last few years. One of these was to establish remote clinics in a few districts in the state. Others who received the award this year include Korvi Rakshand from Bangladesh, Eugenio Lemos from Timor-Leste and Miriam Coronel-Ferrer from the Philippines.

Ramon Magsaysay award:
The Ramon Magsaysay Award (Filipino: Gawad Ramon Magsaysay) is an annual award established to perpetuate former Philippine President Ramon Magsaysay's example of integrity in governance, courageous service to the people, and pragmatic idealism within a democratic society. The prize was established in April 1957 by the trustees of the Rockefeller Brothers Fund based in New York City with the concurrence of the Philippine government. It is often called the "Nobel Prize of Asia".

PM Modi becomes first Foreign Head of Government to be awarded 'The Grand Cross of the Order of Honour' by Greece.

Prime Minister Narendra Modi has become the first Foreign Head of Government to be honored with 'The Grand Cross of the Order of Honour' by the Greek government. This prestigious accolade was bestowed during Prime Minister Modi's official visit to Greece.
The Order of Honour, established in 1975, depicts the head of the goddess Athena on its front side, with the inscription "ONLY THE RIGHTEOUS SHOULD BE HONOURED. " The Grand Cross of the Order of Honour is granted by the President of Greece to Prime Ministers and notable figures who, by virtue of their esteemed positions, have contributed to enhancing Greece's stature.

Greece:
- President: Katerina Sakellaropoulou
- Capital: Athens
- Currency: Euro (€) (EUR)

Nobel Prize award raised to 78 crore for 2023

Winners of this year's Nobel Prizes will get extra 1 million crowns, taking the reward to 11 million Swedish crowns ($986,000 or 78 crore). The prize money has been adjusted up and down in recent years and the award-givers said it was increasing the amount this year to reflect the Foundation's stronger financial position. In 2012, prize money was reduced from 10 million crowns to 8 million as the Foundation looked to shore up its finances. The prize amount was increased to 9 million in 2017 and in 2020 to 10 million - where it was prior to 2012.

Nobel Prize:
- Awarded for: Contributions that have conferred the greatest benefit to humankind in the areas of Physics, Chemistry, Physiology or Medicine, Literature, Economics and Peace.
- Country: Sweden (all prizes except the Peace Prize), Norway (Peace Prize only)
- Presented by: Royal Swedish Academy of Sciences (Physics, Chemistry and Economic Sciences, Nobel Assembly at the Karolinska Institute (Physiology or Medicine), Swedish Academy (Literature), Norwegian Nobel Committee (Peace)
- Reward: A gold-plated green gold medal, a diploma, and a monetary award
- First awarded: 1901

Journalists and litterateurs of 18 Indian languages honoured with Bharatiya Bhasha Samman 2023

Journalists and litterateurs of 18 Indian languages were honoured with Bharatiya Bhasha Samman 2023 during the Bharatiya Bhasha Samman Diwas program organized by the multilingual news agency Hindusthan Samachar on the occasion of Hindi Diwas. Hitesh Shankar, editor of 'Panchjanya', Dr. K. , senior journalist for Telugu language Vikram Rao, senior journalist Shri Ram Joshi for Marathi, Padmashree Dr. Vishnu Pandya for Gujarati, senior journalist Dr. Bhai Paramjit Singh for Punjabi, Dr. Suman Chandra Das for Bengali, Arun Jyoti Bora for Assamese, and Dilli Ram for Nepali. Dular and Kamal Kishore Khatri of Sindhi were honored. Similarly, senior journalist Kavalam Sasikumar was honoured for Malayalam language, V. Srinivasan for Tamil language, Swati Chandrashekhar and Pannag Raj Ramchandra Rao Kulkarni for Kannada language, Dr. Samanvay Nand for Odia language, and Keshav Mohan Pandey for Bhojpuri language. Apart from this, two journalists from Hindusthan Samachar, Dr. Sharda Vandana and Gunjan Kumar, were honoured with the 'Kalamveer' award.

Shanta Thoutam honored with World Innovation Award at BRICS

Telangana Chief Innovation Officer Shanta Thoutam received the World Innovation Award at the first BRICS Innovation Forum hosted in Moscow. The award is given for outstanding contribution to Sustainable Development Goal-4 which ensures inclusive and equitable quality education and promotes lifelong opportunities for all. The award, organised by World Organisation for Development, an international NGO with special consultative status with the UN Economic and Social Council, honours leaders from the developing world that have made an outstanding personal contribution to the achievement of sustainable development goals (SDG).

BRICS:
BRICS is a grouping of the world economies of Brazil, Russia, India, China, and South Africa formed by the 2010 addition of South Africa to the predecessor BRIC. The BRICS mechanism aims to promote peace, security, development and cooperation.

P V Satyanarayana receives Dr. M. S. Swaminathan Award

P.V. Satyanarayana, principal scientist at the Agricultural Research Station, Acharya N. G. Ranga Agricultural University Andhra Pradesh was presented 8th Dr M. S. Swaminathan award. He received the award in recognition of his contribution to the development of high-yielding rice varieties that exhibit resilience against pests and environmental challenges. He has also contributed to fine-grain varieties and hybrid rice that have revolutionized agriculture across India. The award includes a cash prize of `2 lakh and a gold medal.

Dr. M. S. Swaminathan Award:
Mankombu Sambasivan Swaminathan (born 7 August 1925) is an Indian agronomist, agricultural scientist, plant geneticist, administrator and humanitarian. Swaminathan is a global leader of the green revolution. He has been called the main architect of the green revolution in India for his leadership and role in introducing and further developing high-yielding varieties of wheat and rice.

"Success seems to be connected with action. Successful people keep moving. They make mistakes, but they don't quit."

The real test is not whether you avoid this failure, because you won't. It's whether you let it harden or shame you into inaction, or whether you learn from it; whether you choose to persevere.

Sports

Germany wins FIBA World Cup for first time, Schroder awarded MVP'

Germany have won their first-ever FIBA Basketball World Cup title by beating undermanned Serbia in a slugfest of the two European powerhouses in Manila. Germany became the first team to win a FIBA World Cup crown in their final debut since Spain in 2006. Germany's previous best showing at the men's World Cup was in 2002, when MVP Dirk Nowitzki led them to the bronze medal at the International Basketball Federation (FIBA) event. Germany went 8-0 in the tournament, becoming the fifth consecutive World Cup champion to go unbeaten.

FIBA World Cup:

The FIBA Basketball World Cup is an international basketball competition between the senior men's national teams of the members of the International Basketball Federation, the sport's global governing body. It takes place every four years and is considered the flagship event of FIBA.

➢ Founded: 1950
➢ No. of teams: 32 (finals)
➢ Most recent champion(s): Germany (1st title)
➢ Inaugural season: 1950

FIBA:

➢ Founded: 18 June 1932
➢ Headquarters: Mies, Switzerland
➢ President: Hamane Niang

Cricketer Deepak Chahar launches own sports brand DNINE

Indian cricketer Deepak Chahar announced the launch of his homegrown brand DNINE Sports, to cater to the growing sports and fitness goods market in India. This is less than a year after he launched his fantasy sports app. The sports line will have an investment of ₹2. 5 crore and will retail products like shoes for cricket, clothing and accessories, etc. The company will be incorporated under the entity LCDC Athletics Private Limited and will have the cricketer and his father Lokendra Singh Chahar as co-founders.

In Wrestling, India's Antim Panghal wins bronze medal at World Championships in Serbia

Young Indian wrestler Antim Panghal secured a bronze medal in the women's 53 kg category at the ongoing World Championships in Belgrade, Serbia. He also secured Paris Olympics 2024 quota for India. 19-year-old Antim beat two-time European Champion Emma Jonna Denise Malmgren in the bronze medal bout by 16-6. This is India's first medal at the ongoing edition of the tournament. Antim has captured India's 23rd medal in the World Championships till date, which includes one gold, five silver and 17 bronze medals.

Indian pacer Mohammed Siraj grabs top spot in ICC bowler's rankings

Indian pacer Mohammed Siraj has grabbed the top spot in the latest ICC bowler's rankings. His latest match-winning performance against Sri Lanka in the Asia Cup final provided eight spot leaps to take him to the top. Kuldeep Yadav is another Indian bowler who made it into the top ten. Jasprit Bumrah, who has come back after a long injury break, climbed up two places to the 27th position.

ICC ODI Rankings for Bowlers:

1. Mohammed Siraj   694
2. Josh Hazlewood   678
3. Trent Boult   677
4. Mujeeb Ur Rahman   657
5. Rashid Khan   655

ICC releases official Anthem 'Dil Jashn Bole' for Men's Cricket World Cup

International Cricket Council released the official Anthem for the Men's Cricket World Cup beginning on the 5th of next month. The theme of the anthem is Dil Jashn Bole and it features Bollywood superstar Ranveer Singh. The music for the anthem has been prepared by Pritam, and the singers are Pritam, Nakash Aziz, Sreerama Chandra, Amit Mishra, Jonita Gandhi, AKASA, and Charan.

ICC:
- Formation: 15 June 1909
- Headquarters: Dubai, United Arab Emirates (2005–present), London, England (1909–2005)
- Chairman: Greg Barclay
- CEO: Geoff Allardice
- General Manager: Wasim Khan

R Praggnanandhaa secures third place in Tata Steel Chess India 2023 Open Blitz

World Cup runner-up R Praggnanandhaa secured the highest position among the Indian participants, finishing third overall. Meanwhile, the reigning world champion, Alexander Grischuk, dominated the Open Blitz category to claim the title at the Tata Steel Chess India 2023 event in Kolkata. India's No. 1 D Gukesh suffered six defeats from nine rounds on the final day that included one against his closest rival Praggnanandhaa in the penultimate round, to end with a disappointing eighth place finish.

The winners:
1. Women's, Rapid: 1. Divya Deshmukh, 2. Ju Wenjun;
2. Blitz: 1. Ju Wenjun, 2. Koneru Humpy
3. Open, Rapid: 1. Maxime Vachier-Lagrave, 2. Teimour Radjabov;
4. Blitz: 1. Alexander Grischuk, 2. Nodirbek Abdusattorov.

SAFF Under-16 Championship: India won fifth title by defeating Bangladesh 2-0

Defending champions India retained their title at the SAFF U-16 Championship, defeating Bangladesh 2–0 in the final, winning the cup for the fifth time in the tournament's history. The Indians doubled the lead in the 73rd minute when Lewis Jangminlun's brilliant finish gave the Blue Colts their second goal and put the tie in control. n the final, Bharat Larenjam gave the Indian boys an early lead in the 8th minute and then Lewis Zangminlun sealed the win in the 74th minute.

Under the guidance of head coach Ishfaq Ahmed, the Blue Colts performed brilliantly throughout the championship. India topped Group A by defeating Bangladesh and Nepal with 1-0 wins both times. Their semi-final encounter with the Maldives was a masterclass in attack, resulting in an 8–0 victory. In the final against Bangladesh, Ishfaq Ahmed's team displayed tactical skill and control. Bangladesh came

close with several attempts in the 85th minute but India's defense remained strong and thwarted them and eventually won the match 2–0.

SAFF Under-16 Championship:
The 2023 SAFF U-16 Championship was the 8th edition of the SAFF U-16 Championship, an international football competition organized by the South Asian Football Federation (SAFF) for men's under-17 national teams. It was held from 2-10 September 2023 in Thimphu, Bhutan. India are the defending champions, having won their fourth title in 2022 by defeating Nepal in the final.

Archery World Cup Final: Prathamesh Jawkar wins silver in men's compound event

Indian archer Prathamesh Jawkar narrowly missed out on a top spot on the podium in the men's compound event and settled for a silver after going down to Mathias Fullerton of Denmark in the gold medal match at the Archery World Cup Final 2023. Ace archer Abhishek Verma, men's compound archer missed out on a medal after losing the bronze medal match 150-147 to the Schloesser. In the women's compound event, reigning world champion Aditi Gopichand Swami suffered an upset in the quarterfinals against Dane Tanja Gellenthien. Jyothi Surekha Vennam, who was part of the team that won gold medal at the world championships in Berlin earlier this year, also bowed out in the last eight after losing 144-149 to defending champion Sara Lopez of Colombia, who went on to win her eighth world title, beating Tanja Gellenthien in the final.

Badminton: An Se-young, Viktor Axelsen claim singles titles at China Open

South Korean standout An Se-young defeated Japan's Akane Yamaguchi to take the women's singles crown at the Badminton China Open, while world No. 1 Viktor Axelsen of Denmark clinched the men's singles gold by overcoming China's Lu Guangzu. For the women's doubles final, World No. 1 duo Chen Qingchen and Jia Yifan of China clinched a victory over the South Korean team of Baek Ha-na and Lee So-hee. Earlier, Seo Seung-jae and Chae Yu-jung of South Korea outperformed French pair Thom Gicquel and Delphine Delrue, securing the mixed doubles title.

China Open:

The China Open is an annual badminton tournament held in People's Republic of China. It became part of the BWF Super Series tournaments in 2007. BWF categorised China Open as one of the three BWF World Tour Super 1000 events in the BWF events structure since 2018.

➤ Prize money: USD$2 million (2023)
➤ Location: Changzhou (2023); China
➤ Most titles (female): 3; Zhao Yunlei; Liliyana Natsir; Huang Yaqiong
➤ Most titles (male): 3; Zhang Nan; Chen Xingdong; Zheng Siwei

In tennis, Novak Djokovic beat Daniil Medvedev in US Open final to win record 24th Grand Slam title

Novak Djokovic defeated Daniil Medvedev in straight sets to win his fourth US Open and a record-tying 24th Grand Slam singles championship. Novak Djokovic holds the all-time record of 24 major singles titles, including a record 10 Australian Open titles. He is the only man in history to be the reigning champion of all four majors at once across three different surfaces (2016), and the only to complete a triple Career Grand Slam (2023). Djokovic won a prize maney of $3 Million (around 25 Crore) for his victory.

Note: Rafael Nadal holds an all-time record of 14 French Open titles, the most at a single Grand Slam tournament in tennis history.

He is the second man in the Open Era to complete a double Career Grand Slam (2022).

Maharashtra beat Karnataka to win National Wheelchair Rugby

Maharashtra beat Karnataka in the finals at the recently concluded 5th National Wheelchair Rugby Championship 2023 held at Balewadi. The championship was conducted by The Indian Rugby Football Union (Rugby India), the sole governing body for the sport of rugby in India, in association with the Wheelchair Rugby Federation of India and Mitsubishi Corporation.

Indian Rugby Football Union (Rugby India)
➤ President: Rahul Bose
➤ Founded: 1998
➤ Sport: Rugby union
➤ Vice-presidents: Sanya Mehta; Parvinder Kumar
➤ World Rugby affiliation: 1999

India beat Pakistan in thrilling shootout, win inaugural Hockey5s Asia Cup

India emerged champions in the Men's Hockey5s Asia Cup, beating arch-rivals Pakistan 2-0 in a shootout after both teams were locked at 4-4 in regulation time. With the win, India have booked their place in the FIH Men's Hockey5s World Cup 2024. Following the conquest, Hockey India announced a cash prize of Rs 2 lakh to the players and Rs 1 lakh each for the support staff.

Pakistan:
➤ Capital: Islamabad
➤ President: Arif Alvi
➤ Currency: Pakistani rupee

India win Asia Cup for record-extending 8th time, break multiple records

India defeated Sri Lanka by 10 wickets to win Asia Cup for a record-extending eighth time across formats. Sri Lanka were bowled out for 50, the lowest-ever OD total against India. Pacer Mohammed Siraj became the first-ever Indian to take four wickets in an over in international cricket. He also became the joint-quickest bowler to take an OD five-wicket haul. It is India's fastest win in ODI cricket history. India won the match with 263 balls remaining. India's previous biggest ODI win in terms of ball remaining came on October 12, 2001, when they beat Kenya with 231 balls remaining.

Asia Cup 2023 final award winners:
India all-rounder Ravindra Jadeja won the Catch of the Match award in Asia Cup 2023 final against Sri Lanka. He received prize money of $3,000. Mohammed Siraj was named Player of the Match and received $5,000 cash prize. Kuldeep Yadav won Player of the Series award and received $15,000. India won prize money of $150,000 for clinching Asia Cup 2023.

2023 Asia Cup:
➤ Host: Pakistan
➤ Champions: India (8th title)
➤ Runners-up: Sri Lanka
➤ Player of the series:Kuldeep Yadav
➤ Most runs: Shubman Gill (302)
➤ Most wickets: Matheesha Pathirana (11)

Neeraj Chopra finishes second in men's event at Diamond League Final in Eugene, US

Indian javelin thrower Neeraj Chopra finished second in the men's event at the Diamond League Final in Eugene, Oregon, USA. The Indian's best throw of 83. 80 meter came in his second attempt. However, Czech Republic's Jakub Vadlejch, won his third title with a best throw of 84. 24 meter.

Indian men's team finishes with bronze medal at Asian Table Tennis Championships 2023

In Table Tennis, Indian men's team finished with a bronze medal at the Asian Table Tennis Championships 2023 following a semi-final defeat to Chinese Taipei in Pyeongchang, the Republic of Korea. The Indian men's table tennis team comprising Sharath Kamal, Harmeet Desai and Sathiyan Gnanasekaran lost in their final four match.

Max Verstappen creates history, becomes first-ever F1 driver to win 10 races in a row

Red Bull's 25-year-old Dutch driver Max Verstappen created history by becoming the first-ever driver to win 10 F1 races in a row. Verstappen set the record after clinching Italian Grand Prix. Sebastian Vettel, who had won nine straight races in 2013, held the previous record for most consecutive wins. Max Emilian Verstappen is a Belgian-Dutch racing driver and the 2021 and 2022 Formula One World Champion.

Mohun Bagan Super Giant beat East Bengal to win Durand Cup for 1st time after 23 years

Ten-man Mohun Bagan Super Giant beat East Bengal 1-0 in the final to clinch Durand Cup title for the first time after 23 years. Meanwhile, Mohun Bagan, who are the reigning ISL champions, last won the tournament back in 2000. They made since reached the finals on three occasions (2004, 2009 and 2019) but failed to cross the line.

Nandhakumar Sekar wins Golden Ball

East Bengal forward Nandhakumar Sekar wins the Golden Ball award for the Durand Cup. He won three Player of the Match awards and had also scored the winner in the previous Kolkata derby.

David Lalhlansanga wins Golden Boot!

Mohammedan Sporting's David Lalhlansanga is presented with the Golden Boot. He was just unlucky as his team failed to make it to the knockouts with a one goal margin.

Vishal Kaith wins Golden Glove:

Mohun Bagan Super Giant Vishal Kaith wins the Golden Glove in this tournament after winning the same in the ISL last season. He is awarded a cheque of three lakh rupees as well.

India's 17-year-old Diva Deshmukh wins Tata Steel Chess India Rapid title

India's 17-year-old Woman Grandmaster Diva Deshmukh won Tata Steel Chess India Rapid (Women) title. Divya won the competition with seven points after nine rounds. Women's chess world champion Ju Wenjun came second in the tournament.

Neeraj Chopra finishes second in men's javelin event in Zurich Diamond League

Newly-crowned world champion Neeraj Chopra finished second with a final round throw of 85. 71 m in the men's javelin event of the Diamond League Meeting at Zurich. Neeraj, who became the first-ever Indian athlete to win a gold medal at World Athletics Championships in Budapest, finished behind Czech Republic's Jakub Vadlejch in the men's javelin throw event. Vadlejch had won a bronze in the World Championships.

Kunlavut and An Se-young make history at Badminton World Championships

Thailand's Kunlavut Vitidsarn became the first Thai to win the men's singles title at the World Championships 2023 and became the badminton world champion after a victory over Japan's Kodai Naraoka in Copenhagen.

Earlier, world No. 1 An Se-young also became the first South Korean to win the women's singles gold at the World Championships 2023 after defeating Carolina Marin.

2023 BWF World Championships winners:

➢ Men's singles: Kunlavut Vitidsarn (Thailand)
➢ Women's singles: South Korea An Se-young (South Korea)
➢ Men's doubles: Kang Min-hyuk (South Korea), Seo Seung-jae (South Korea)

➢ Women's doubles: Chen Qingchen (China), Jia Yifan (China)
➢ Mixed doubles: Seo Seung-jae (South Korea), Chae Yoo-jung (South Korea)

FIFA lifts ban on Sri Lanka Football Federation

World governing body FIFA has lifted its suspension of the Sri Lanka Football Federation. On January 21, the global apex body banned the Lankan FA for violations of FIFA rules in administration. FIFA said they would closely monitor the scheduled Lankan FA's election on September 29. Factional fighting and political interference in the sport's body's administration caused the suspension. FIFA had significantly called for the exclusion of local football administration from the existing national sports law, which empowers the minister of sports to interfere in the process.

Neeraj Chopra becomes first Indian to win Gold medal at World Athletics Championships

Javelin thrower Neeraj Chopra won India's first-ever gold at the World Athletics Championships in Budapest, Hungary. In the men's javelin final, Neeraj Chopra wins Gold medal with a throw of 88. 17 metres. Pakistan's Arshad Nadeem clinched Silver with a throw of 87. 82 metres.

In badminton, HS Prannoy wins bronze medal at BWF World Championships in Copenhagen

In badminton, India's ace shuttler HS Prannoy had to settle for a bronze medal as he registered a loss to Kunlavut Vitidsarn in the semifinals of the ongoing Badminton World Federation (BWF) World Championships. Prannoy went down to world number three and three-time Junior champion Vitidsarn. This is India's 14th medal at the World Championships. This includes one gold, four silvers and nine bronze medals. China is the most successful team in the tournament's history, with 196 medals, including 69 gold, 48 silver and 79 silvers.

Prize money for ODI World Cup 2023 announced

The 2023 men's world cup, scheduled to take place in India, will have a total prize pool of USD 10 million (approx. INR 84 crore). The victors of the marquee tournament will claim USD 4 million (approx. INR 33 crore) from the aforementioned pool. Meanwhile, the runners-up in the final, which is set to be held on November 19th at the Narendra Modi Stadium in Ahmedabad, will be awarded USD 2 million (approx. INR 16.5 crore). The two losing semi-finalists will be rewarded a prize money of $800 000 each. Overall, a sum of 810 million will be allocated for the tournament which will be shared by all the 10 participating teams. Note: This will be the first men's World Cup not to feature two-time champions West Indies.

India bags Gold medal in Men's 10-meter air rifle event at Asian Games in Hangzhou, China

India has secured six medals - one gold, three silver, and two bronze - in Asian Games at Hangzhou in China so far. Indian trio Rudrankksh Patil, Divyang Panwar, and Aishwary Tomar clinched gold in the Men's 10m air rifle event. India won its first medal in shooting as the trio of Ramita Jindal, Mehuli Ghosh, and Ashi Chouksey earned a Silver in the women's 10m air rifle event. Shortly after the first medal, Indian duo Arjun Lal Jat and Arvind Singh won a silver in men's lightweight double sculls in the rowing discipline. Rowing fetched India further medals, with the men's eight team adding another silver, while Babu Lal Yadav and Lekh Ram secured bronze in the men's pair. In the women's 10m air rifle final, India's Ramita won a bronze medal, taking the overall tally up to 5. The Indian women's cricket team clinched gold in the women's cricket as they defeated Sri Lanka by 19 runs.

Marco scripts history, becomes 1st MotoGP racer to win Indian GP

Italian racer Marco Bezzecchi scripted history by becoming the first MotoGP racer to win an edition of Indian Grand Prix, following his triumph in the inaugural edition of the Indian Grand Prix. Spain's Jorge Martin finished second and France's Fabio Quartararo became the third to cross the finish line. Bezzecchi made a comeback during the race after initially being on the third spot, going on to reach the finish line eight seconds before the others. South Africa's Brad Binder, who represented Red Bull KTM Factory Racing, took the fourth position. While Spain's Joan Mir of Spain finish 5th as he represented Repsol Honda Team.

Science & Technology

Union minister Chauhan launches C-DOT's cyber threat detection, resolution system

Union Minister of State for Communications Devusinh Chauhan launched the indigenously developed cyber threat detection and resolution system TRINETRA, which has been developed by the Centre for Development of Telematics (C-DOT). It was launched on the 40th Foundation Day of C-DOT. TRINETRA is a combination of multiple Security systems like Security information and Event Management (SIEM), Security Orchestration and Automated Response (SOAR), Data Loss Prevention (DLP), User Entity and Behaviour Analytics (UEBA), Multi-Source Threat Intelligence and others. The solution provides 24x7 near real-time actionable cyber-security status and detection and resolution of cyber-threats (Virus, Malware, Ransomware, Spyware).

Assam Governor Gulab Chand Kataria unveils 'Sarpanch Samvaad' mobile app

Assam Governor Gulab Chand Kataria unveiled 'Sarpanch Samvaad' , a mobile application app of the Quality Council of India (QCI) in Raj Bhavan. QCI launched the Sarpanch Samvaad is an initiative aimed at connecting approximately 2. 5 lakh Sarpanchs across India, which serves as a holistic platform for networking, knowledge dissemination, and collaboration. Through this initiative, Sarpanchs can spotlight developmental activities in their villages, learn about best practices, and foster connections nationwide.

Assam:
➤ Capital: Dispur
➤ Governor: Gulab Chand Kataria
➤ Chief minister: Himanta Biswa Sarma

India receives first C-295 MW transport aircraft for Indian Air Force

India received the first C-295 MW transport aircraft. According to the Indian Air Force, the aircraft was formally handed over by Airbus to the IAF. India has formalised the acquisition of 56 Airbus C-295 aircraft to replace the Indian Air Force AVRO fleet. Forty

aircraft will be manufactured and assembled by Tata Advanced Systems in India as part of an industrial partnership between the two companies. All the C-295 aircraft will be handed over in transport configuration and equipped with an indigenous Electronic Warfare Suite. The C-295 is used for tactical transport of up to 71 troops or 50 paratroopers, and for conducting logistic operations to locations that are not accessible for heavier aircraft.

After Aditya and Chandrayaan, now India aims to scale depth of oceans with Samudrayaan

In the wake of a triumphant lunar expedition, Indian scientists are poised for another audacious endeavor -- Project Samudrayaan. This ambitious project aims to plunge three individuals 6,000 meters beneath the ocean's surface in a homegrown submersible, all in the pursuit of precious metals and minerals, notably cobalt, nickel, and manganese. Beyond the quest for nickel, cobalt, manganese, hydrothermal sulphides, and gas hydrates, Matsya 6000 is poised to delve into the enigmatic realm of chemosynthetic biodiversity within hydrothermal vents and the frigid depths where methane seeps emerge.

Features of India's first manned submersible Matsya 6000:

India's first manned submersible Matsya 6000, capable of taking three personnel to 6,000 metres underwater, is being prepared for deep sea exploration missions. The spherical vessel has a 2. 1 metre diametre and an endurance of 12 hours under normal operation. It's built from an 80 mm-thick titanium alloy, enabling it to withstand extreme pressures underwater.

NASA's Oxygen-Generating Experiment MOXIE Completes Mars Mission

NASA said that its oxygen-generating experiment aboard the Perseverance rover has successfully completed its mission. The device called MOXIE (Mars Oxygen In-Situ Resource Utilization Experiment) generated oxygen for the 16th and final time. CO2 into oxygen, which could help pave the way for future human missions to Mars. Since Perseverance landed on Mars in 2021, MOXIE has generated a total

of 122 grams of oxygen – about what a small dog breathes in 10 hours. At its most efficient, MOXIE was able to produce 12 grams of oxygen an hour – twice as much as NASA's original goals for the instrument – at 98% purity or better. On its 16th run, the instrument made 9. 8 grams of oxygen.

Japan launches 'Moon Sniper mission, will land on Moon next year

Japan launched the SLIM (Smart Lander for Investigating Moon), nicknamed "Moon Sniper, aboard an H-IIA rocket. The mission, whose cost is pegged at $100 million, is expected to reach the Moon by February. Japan LAerospace Exploration Agency (JAXA) said the rocket took off from Tanegashima Space Center. Japan aims to become the fifth nation to land on the Moon. Two earlier lunar landing attempts by Japan failed in the last year. JAXA lost contact with the OMOTENASHI lander and scrubbed an attempted landing in November. The Hakuto-R Mission 1 lander, made by Japanese startup ispace (9348. T), crashed in April as it attempted to descend to the lunar surface.

Japan:
- Capital: Tokyo
- Prime Minister: Fumio Kishida
- Currency: Japanese yen

Hyderabad Firm Unveils India's First AI-Powered Anti-Drone System

A Hyderabad-based robotics firm has unveiled a state-of-the-art autonomous anti-drone system, powered by artificial intelligence. The system can protect not just vital installations like nuclear installations and oil rigs, but also a wide area encompassing even an entire city, from multiple drones of any kind. This is the first time such a system has been developed in India. Named Indrajaal, it is said to be the world's only wide-area Counter-Unmanned Aircraft System (C-UAS). It can provide a comprehensive and integrated security mechanism against moving threats that cannot be tackled with static defence systems. Indrajaal is designed to defend against all classes and levels of autonomous drones over an area of 4,000 square kilometres.

India's largest home-built nuclear plant starts operations at full capacity

Prime Minister Narendra Modi announced that the 700 MW nuclear power plant, developed entirely within India, located in Kakrapar, Gujarat, has commenced its operations at maximum capacity. While the reactor at the Kakrapar Atomic Power Project (KAPP) had started commercial operations on June 30, it was operating only at 90 per cent of its capacity. Now, it started operating at its full capacity. The Nuclear Power Corporation of India Limited (NPCIL) is building two 700 MW pressurised heavy water reactors (PHWRs) at Kakrapar, which is also home to two 220 MW power plants. The NPCIL currently holds the operations of 23 commercial nuclear power reactors. Nuclear power plant projects with a capacity of 700 MW are currently in progress at two locations: Rawatbhata in Rajasthan (RAPS 7 and 8) and Gorakhpur in Haryana (GHAVP 1 and 2)

NPCIL:
- Founded: September 1987
- Headquarters: Mumbai, Maharashtra
- Chairman & MD: B. C. Pathak

NASA to test end-to-end laser communication in space

NASA is launching a groundbreaking technology demonstration known as the Integrated LCRD Low Earth Orbit User Modem and Amplifier Terminal (ILLUMA-T) to the Space Station. ILLUMA-T is scheduled to launch on SpaceX's 29th Commercial Resupply mission. The ILLUMA-T, along with the Laser Communications Relay Demonstration (LCRD) launched in December 2021, will complete NASA's first two-way, end-to-end laser relay system. ILLUMA-T, approximately the size of a standard refrigerator, will be secured to an external module on the ISS to conduct its demonstration with LCRD. The LCRD is currently showcasing the benefits of a laser relay in geosynchronous orbit by beaming data between two ground stations and conducting experiments to refine Nasa's laser capabilities.

NASA:
- Formed: July 29, 1958
- Headquarters: Washington, D. C.
- Administrator: Bill Nelson
- Deputy Administrator: Pamela Melroy

Mahendragiri warship to be commission in Mumbai

The warship 'Mahendragiri' being built at Mazagon Dock Shipbuilders Limited in Mumbai. The newly christened Mahendragiri is a technologically advanced warship and stands as a symbol of India's determination to embrace its rich naval heritage.

Features of India's new warship Mahendragiri
- Displacement: 6,670 tonnes
- Length: 149 metres
- Width: 17. 8 metres
- Draft: 5. 22 metres
- Speed: 28 knots
- Range: 10,200 km
- Crew: 226 sailors
- Engines: 2 General Electric LM2500

ISRO-developed device for fishers' safety successfully tested at Neendakara

'Nabhmitra', a device developed by ISRO-Space Applications Centre (Ahmedabad) for the safety of fishermen, was tested at Neendakara. It is a satellite-based communication system developed for the safety of fishermen. It enables two-way messaging services from and to the sea. The weather and cyclone warnings will be communicated in the local language, the boats can also send distress messages to the authorities. In emergency situations like capsizing and fire, fishers can press a button on the device and get in touch with the control centre. Neendakara is a suburb of Kollam city in Kerala, India.

Indian Space Research Organisation (ISRO):
- Formed: 15 August 1969
- Headquarters: Bangalore, Karnataka
- Chairman: Sreedhara Somanath

Second phase of Gaganyaan mission will launch a female space-faring humanoid robot Vyommitra

The trials for the Indian Space Research Organisation's (ISRO)'s Gaganyaan missions will start in October. Also the second phase of the mission will launch a female space-faring humanoid robot Vyommitra.

Who is Vyomitra and what can it do:
Vyommitra is a combination of two Sanskrit words Vyoma (Space) and Mitra (Friend). Vyommitra is the prototype of the half-humanoid and has been made for the first unmanned Gaganyaan mission. Female humanoid Vyommitra first made her appearance at the opening session of the 2021 event 'Human Spaceflight and Exploration - Present Challenges and Future Trends'. Vyommitra can monitor through module parameters, send alerts and perform life support operations. It can perform activities like switch panel operations. The robot can also be a companion and converse with the astronauts, recognise them and can also respond to their queries. The half-humanoid will simulate human functions in space and also interact with the environment control life support system.

What is Gaganyaan Mission:
Gaganyaan project aims to demonstrate human spaceflight capability. It plans to launch a crew of 3 members to an orbit of 400 km for a 3 days mission and bring them back safely to earth, by landing in Indian sea waters.

"The ones who are crazy enough to think they can change the world, are the ones that do."

People who succeed have momentum. The more they succeed, the more they want to succeed, and the more they find a way to succeed.

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LEADERSHIP

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CADET SHINES
AGAIN

Divya Mehta

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FOR CLEARING AIRFORCE EXAM

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CADET SHINES
AGAIN

Bhavya Thapa

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YET ANOTHER PROOF OF
LEADERSHIP

PARMANU
CADET SHINES
AGAIN

Gourav Kumar

Congratulations
FOR CLEARING NDA EXAM

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Obituary

PowerPoint software co-creator Dennis Austin dies at 76
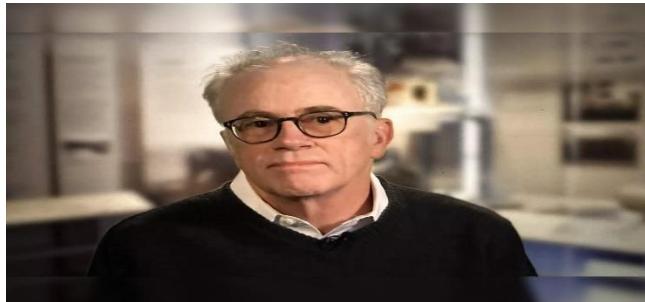
Dennis Austin, who co-created the PowerPoint software almost 36 years ago has passed away in the US. Released in 1987 by software firm Forethought, PowerPoint was the digital successor to overhead projectors, "transforming the labour-intensive process of creating slides". The company released the software in 1987, and Microsoft bought the company just a few months later for $14 million. By 1993, PowerPoint was generating more than $100 million in sales. Microsoft integrated PowerPoint to its suite of Office products, including Word. Austin served as PowerPoint's primary developer from 1985 to 1996 when he retired. After Microsoft acquired Forethought, Austin continued to lead development of PowerPoint. He retired in 1996.

Eminent author Gita Mehta passes away

Gita Mehta, renowned writer-filmmaker passed away in New Delhi. Mehta, who died at 80, was the sister of Odisha's Chief Minister Naveen Patnaik and daughter of Biju Patnaik. Gita Mehta will be remembered for her coverage of Bangladesh's 1971 liberation war for NBC and her acclaimed documentary "Dateline Bangladesh". She has penned books including 'Karma Cola', 'Snake and Ladders', 'A River Sutra', 'Raj' and 'The Eternal Ganesha'. Though she was conferred India's fourth highest civilian honour, the Padma Shri, in the field of literature and education in 2019, she declined the award. She has produced and directed at least 14 television documentaries for UK, European and US networks. She was also a television journalist for the US television network NBC.

Chak De! India Actor Rio Kapadia Passes Away

Bollywood actor Rio Kapadia, who starred in films like Chak De! India, Happy New Year, Dil Chahta Hai, among others, passed away. Kapadia played numerous memorable roles in some of the biggest Bollywood films. He is famously remembered as the commentator in Shah Rukh Khan's Chak De! India. In 2013, he essayed the role of King Gandhar in the serial, Mahabharat, and he was praised for his role of the mighty king.

Creator of world's 1st cloned mammal 'Dolly the Sheep' dies

British scientist Ian Wilmut, one of the creators of the world's first cloned mammal Dolly the Sheep', has died at the age of 79. The University of Edinburgh, where

he worked, announced the death of Wilmut, who was diagnosed with Parkinson's disease. Dolly (5 July 1996 – 14 February 2003) was a female Finn-Dorset sheep and the first mammal that was cloned from an adult somatic cell. Before him, the process involved cloning the animal from embryonic cells, but Dolly was created from a culture mammary cell.

How he did it:

The process involved putting DNA from the adult cell into an empty sheep's egg. Researchers then stimulated it with electricity and added chemicals - which had the effect of rejuvenating the adult DNA into an embryo. That was then implanted into a surrogate sheep until it came to term.

Himmatwala Producer Mukesh Udeshi passes away

Bollywood film producer Mukesh Udeshi passed away in Chennai. Mukesh Udeshi has been the line producer for Bollywood films like Ek Villain, Himmatwala, Chashme Baddoor and Go Goa Gone among others. Udeshi also co-produced Ram Gopal Varma's Kaun which starred Urmila Matondkar and Manoj Bajpayee in the lead roles. He also produced Allu Arvind's film which featured Chiranjeevi. Notably, he had also bankrolled some of the popular Telugu films, featuring Chiranjeevi in the lead role.

Sholay actor comedian Birbal dies at 85

Renowned comedian and actor Satinder Kumar Khosla, who was popularly known as Birbal, passed away at the age of 85. The late actor was best known by his stage name Birbal. He made his debut in Hindi cinema with Manoj Kumar's 1967 film, Upkar. He appeared in more than 500 films, spanning across Hindi, Punjabi, Marathi, and Bhojpuri cinema. Some of his memorable work includes Mere Gaon Mera Des (1971), Sholay (1975), Tapasya (1976), Sadma (1983), Dil (1990), and Phir Kabhi (2008). In the film Sholay starring Amitabh Bachchan and Dharmendra, he played the role of a prisoner, sporting a half-cut mustache. His character garnered a lot of praise at that time.

ISRO scientist N Valarmathi, voice behind Chandrayaan-3 countdown, dies

N Valarmathi, the scientist and distinctive voice behind the ISRO's launch countdowns passed away. She voiced the launch of India's first successful mission, Chandrayaan-3, which ultimately became her final one. During the July 14 event, Valarmathi was heard giving the countdown for the rocket launch and had been the voice for ISRO launches for almost six years. Her last announcement, was on July 30 when the PSLV-C56 rocket lifted off carrying 7 Singaporean satellites.

Poet-writer Jayanta Mahapatra dies at 95
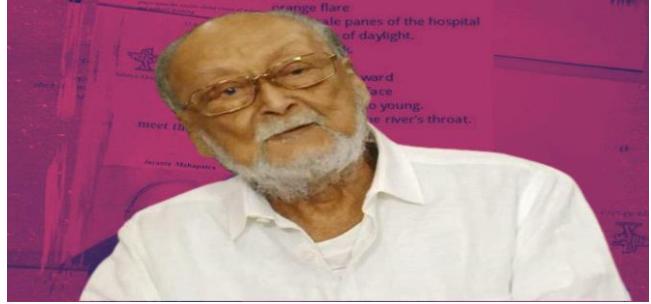
Eminent littérateur and poet Jayanta Mahapatra passed in Cuttack. He was 95. Mahapatra was the first Indian poet to win a Sahitya Akademi award for English poetry. He was also conferred with the Padma Shri award in 2009. However, he returned it in 2015 to

protest against "rising intolerance in India". The author of 'Indian Summer' and 'Hunger', considered as classics in modern Indian English literature, Mahapatra penned 27 books of poems, of which seven are in Odia language and the rest in English.

Amar Akbar Anthony Writer Prayag Raj Passes Away

Veteran screenwriter Prayag Raj, best known for his work in Amitabh Bachchan's blockbuster hits "Amar Akbar Anthony", "Naseeb" and "Coolie", has died due to age-related issues. He was 88. He also wrote the Bachchan, Rajinikanth and Kamal Haasan-starrer "Geraftaar", apart from contributing to the screenplays of Rajesh Khanna's "Roti", Dharmendra-Jeetendra's "Dharam Veer" and "Amar Akbar Anthony". His last film as a writer was the unreleased "Zamanat", directed by the late S Ramanathan.

The real test is not whether you avoid this failure, because you won't. It's whether you let it harden or shame you into inaction, or whether you learn from it; whether you choose to persevere.

"There are two types of people who will tell you that you cannot make a difference in this world: those who are afraid to try and those who are afraid you will succeed."

SEP 02

COCONUT DAY

Importance: To commemorate the formation of Asian Pacific Coconut Community (APCC) under the aegis of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP).

Motto: To highlight the importance and uses of coconuts.

Edition: 25th

Note: This Day helps to create awareness for the importance of this fruit in poverty reduction.

APCC:
- Type: Inter-governmental organization
- Headquarters: Jakarta, Indonesia
- Membership: 18 countries

Miscellaneous Events

RBI governor Shaktikanta Das ranked top central banker globally

Reserve Bank of India (RBI) Governor Shaktikanta Das has been ranked as the top central banker globally by US-based Global Finance magazine. He has been rated 'A+' in the Global Finance Central Banker Report Cards 2023. He has been placed at the top of the list of three central bank governors who have been rated A+. Grades are based on a scale from A to F for success in inflation control, economic growth goals, currency stability, and interest rate management. Switzerland Governor Thomas J Jordan and central bank chief of Vietnam Nguyen Thi Hong follow Das.

The central bank governors who earned an 'A' grade:

Roberto Campos Neto of Brazil, Amir Yaron of Israel, Harvesh Kumar Seegolam of Mauritius and Adrian Orr of New Zealand.

Note: Shaktikanta Das was conferred on the award of 'Governor of the Year' at London's Central Banking Awards 2023 in June.

Bhargav Dasgupta steps down as MD & CEO of ICICI Lombard General Insurance

ICICI Lombard General Insurance Company announced the resignation of its MD & CEO Bhargav Dasgupta. Dasgupta, who was appointed as the MD & CEO of the general insurer in May 2009, served the company for over 14 years. Following the Asian Development Bank (ADB) announced the appointment of Bhargav Dasgupta as vice-president for Market Solutions for three years. In his new role at ADB, Dasgupta will oversee the operations of its Private Sector Operations Department and the Office of Markets Development and Public–Private Partnerships.

ADB:
➢ Headquarters: Mandaluyong, Philippines
➢ Founded: 19 December 1966
➢ President: Masatsugu Asakawa
➢ Membership: 68 countries

Fox News founder Rupert Murdoch steps down

Rupert Murdoch has resigned as chairman of Fox Corp and News Corp marking the end of an over 70-year career during which he built a business empire stretching from Australia to the US. His older son, Lachlan Murdoch, 52, will become sole chairman of News Corp and will continue as Fox Corp's executive chair and CEO which finally settles all questions of succession within the Murdoch family. The Fox founder's decision to step down comes just months after his news network paid over $787. 5 million to settle a defamation suit filed by voting equipment company Dominion. Murdoch is also the owner of the Wall Street Journal and the New York Post.

Fox Corporation:
➢ Founded: March 19, 2019
➢ Founder: Rupert Murdoch
➢ Headquarters: New York City, U. S.

Ex-Alibaba CEO Daniel Zhang quits as cloud division head

Alibaba's former chief executive Daniel Zhang has unexpectedly stepped down as head of the company's cloud computing division. The move comes as part of a leadership transition at Alibaba, which had already said that Zhang would cede the position of group chair to co-founder Joseph Tsai and would hand over the role of group chief executive to Eddie Yongming Wu. Zhang, who was Alibaba's chief executive for eight years. Wu will now take over as head of the cloud division, one of China's largest by market share. Zhang took over from Alibaba's charismatic co-founder Jack Ma as chief executive in 2015, and as chair in 2019.

Uday Kotak resigns as CEO of Kotal Mahindra Bank

Uday Kotak, the founder and promoter of Kotak Mahindra Bank, has stepped down from his role as Managing Director & CEO. Kotak, who has played a pivotal role in the institution's growth over the past 38 years, will continue to be associated with the bank as a Non-Executive Director. His term as Non-Executive

Director will extend for a period of five years, not liable to retire by rotation. Dipak Gupta, who has been a full-time director of the bank since January 1999 and was designated as the Joint Managing Director on January 1, 2012, will take on the duties of Managing Director & CEO as an interim arrangement. This arrangement is set to continue until December 31, 2023, subject to the approval of the Reserve Bank of India and the bank's members.

Indore has been adjudged the best Smart City while Madhya Pradesh has been chosen as the top state in the Smart Cities Mission.

The Union Housing and Urban Affairs Ministry named Indore the best city and Madhya Pradesh the best state in the Smart Cities Mission in its India Smart Cities Awards 2022. Surat and Agra were named second and third best among cities and Tamil Nadu second in states, with the third prize being shared by Rajasthan and Uttar Pradesh. A total of 66 winners in different categories were announced the awards would be presented by President Droupadi Murmu at a ceremony in Indore on September 27. The cities were selected based on their ranking in terms of progress of projects, project outcomes and presentations submitted for the awards. Indore has topped the cleanliness rankings under the Swachh Bharat Mission, being named the cleanest city for the past six years in a row. Madhya Pradesh, too, won the tag of the cleanest state in the Swachh Survekshan 2022. In the Smart Cities awards, Indore had shared the first place with Surat last time. In the Smart Cities Awards 2022, Coimbatore's project of model roads, restoration and renovation of lakes was ranked the best in the category of built environment, while Jabalpur won the award for its incubation centre in the economy category. Chandigarh's public bike sharing and e-governance services won in the mobility and governance categories, respectively. Chandigarh also won the overall award in the Union Territory category.

Prosus & Naspers CEO Bob van Dijk steps down

Bob van Dijk, the CEO of Prosus and Naspers, is stepping down as CEO and board member of both companies. He is stepping down effective immediately after almost 10 ears of leadership. He will continue as a consultant to the group until September 30 2024.

Meanwhile Ervin Tu has been named interim CEO of Naspers and Prosus.

Prosus & Naspers:
➢ Industry: Investments
➢ Headquarters: Amsterdam, Netherlands
➢ Chairman: Koos Bekker
➢ CFO: Basil Sgourdos

Microsoft's Chief Product Officer Panos Panay Quits Company After 19 Years

Panos Panay, Microsoft's Chief Product Officer (CPO) who leads Windows development and the Surface line, is leaving the company after 19 years. Notably, Mr. Panay joined Microsoft in 2004 as one of the company's group program managers and became the person in charge of supervising the Surface hardware division as well as other products. He was named the company's chief product officer in 2018 and was promoted to executive vice president after a successful Windows 11 launch in 2021.

Infosys only Indian firm in TIME magazine's World's 100 Best Companies list

IT giant Infosys is the only Indian company in TIME magazine's World's 100 Best Companies of 2023 list. Infosys has been placed at the 64th spot in the list that is topped by tech companies like Microsoft, Apple, Alphabet and Meta Platforms. Infosys, which has an overall score of 88. 38, has an employee satisfaction rank of 103. Founded by seven engineers in 1981, Infosys is today the second-largest Indian IT company by 2020 revenue figures. TIME looked at three dimensions to identify the top-performing companies in the world: Employee Satisfaction, Revenue Growth, and Sustainability (ESG). Another Indian professional services company was featured among the top 200 on TIME's World's Best Companies 2023 list – Wipro ranked at 174.

The 10 best companies in the world accore to TIME:
Microsoft has been ranked 1st among 10 best companies in the world, according to TIME magazine. Apple, Alphab Meta Platforms, Accenture, Pfizer, American Express, Electricite de Franc, BMW Group and Dell Technologies follow the tech giant.

Important Days of the Month

Day	Observed/Celebrated As	Motto/Importance
1 October	International Day of the Older Persons	Fulfilling the Promises of the Universal Declaration of Human Rights for Older Persons: Across Generations
2 October	International Day of Non-Violence	To mark the birth anniversary of Mahatma Gandhi, leader of the Indian independence movement
4 October	World Animal Welfare Day	This day was started in 1931 to highlight the plight of endangered species.
5 October	World Teacher's Day	The Transformation of Education Begins with Teachers
8 October	Indian Air Force Day	To mark the foundation of the Indian Air Force on 8 October 1932
9 October	World Post Day	To Mark the establishment of the Universal Postal Union in 1874 in the Swiss Capital, Bern.
10 October	World Mental Health Day	To raise awareness of mental health issues around the world
11 October	International Day of the Girl Child	To highlight and address the needs and challenges girls face
12-October	World Arthritis Day	To bring awareness to the growing prevalence of arthritis
13 October	International Day for Disaster Risk Reduction	To raise awareness of how people are taking action to reduce their risk to disasters.
14 October	World Standards Day	SHARED VISION FOR A BETTER WORLD
15 October	World Students' Day	To mark the birth anniversary of A.P.J. Abdul Kalam
16 October	World Food Day	Water is life, water is food. Leave no one behind.
17 October	International Poverty Eradication Day	To acknowledge the effort and struggle of people living in poverty
20 October	World Statistics day	Connecting the world with data we can trust
24 October	United Nations Day	To mark the establishment of United Nations which officially came into existence on 24 October 1945.
31 October	National Unity Day	To mark the birth anniversary of Sardar Vallabhbhai Patel also known as Iron Man of India.

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Books and Authors
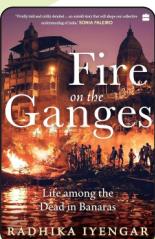
Book: Fire on the Ganges: Life among the Dead in Banaras

Author: Radhika Iyengar

About: The book explores the city of Banaras, particularly its relationship with death and the afterlife. Also is the first attempt to chronicle the everyday realities of the Doms in Banaras.
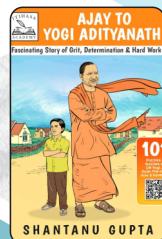
Book: Ajay to Yogi Adityanath

Author: Shantanu Gupta

About: This book traces the journey of UP CM Yogi Adityanth from his humble beginnings to the pinnacle of political leadership.
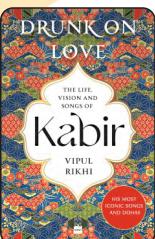
Book: The Life, Vision and Songs of Kabir

Author: Vipul Rikhi

About: The book brings into one place stories from Kabir's life, his most famous songs, "as well as his fiercely iconoclastic and inspiring vision".
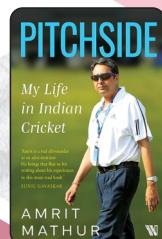
Book: Pitchside: My Life in Indian Cricket

Author: Amrit Mathur

About: In the book, Mr. Mathur brings alive insightful first-person accounts of some of Indian Cricket's most memorable moments.
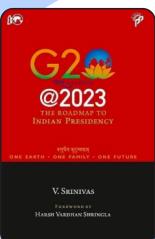
Book: G20 @ 2023: The Roadmap to Indian Presidency

Author: V. Srinivas

About: The book lists several achievements of G20 such as the IMF quota reform, establishment of the FSB and success in handling past financial and pandemic crises.

Book: India & the G20: Legacy & Prospects for Multilateralism amidst a Polycrisis

Author: Patrick Bond and Sonal Raghuvanshi

About: This book analyses the diverge from the mainstream narratives and attempt to provide a much needed grounded analysis of the G20 framework.
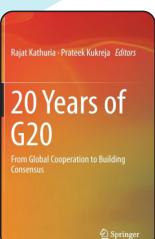
Book: 20 Years of G20: From Global Cooperation to Building Consensus

Author: Rajat Kathuria and Prateek Kukreja

About: This book reviews the past 20 years of the G20, since it was conceptualized as a replacement for the G-7.
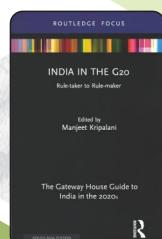
Book: India in the G20: Rule-taker to Rule-maker

Author: Manjeet Kripalani

About: This book analyses the importance of the G20 to India, its role so far, and how it can leverage its presidency year to be an influential author of new global rules.
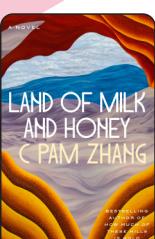
Book: Land of Milk and Honey

Author: C Pam Zhang

About: This book delivers a powerful rebuke of how far the privileged will go to retain a level of comfort amid climate catastrophe.
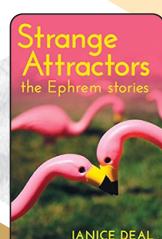
Book: Strange Attractors: The Ephrem Stories

Author: Janice Deal

About: Strange Attractors features a memorable cast of everyday characters with troublingly complex and traumatic inner lives.

Mathematics Practice Set

1. What is the simplified value of $(2 + 1)(2^2 + 1)$ $(2^4 + 1)(2^8 + 1)$?

(A) $2^8 - 1$ (B) $2^{16} - 1$
(C) $2^{32} - 1$ (D) $2^{64} - 1$

Ans: **(B)**
Multiplying and dividing by $(2 - 1)$
$(2 + 1)(2^2 + 1)(2^4 + 1)(2^8 + 1)(2 - 1) / (2 - 1)$
$\Rightarrow (2^2 - 1)(2^2 + 1)(2^4 + 1)(2^8 + 1)/1$ $[(a - b)(a + b) = a^2 - b^2]$
Solving further, we get
$(2^2 - 1)(2^2 + 1)(2^4 + 1)(2^8 + 1)$
$\Rightarrow (2^4 - 1)(2^4 + 1)(2^8 + 1)$
$\Rightarrow (2^8 - 1)(2^8 + 1) = 2^{16} - 1$

2. Which one among $\sqrt{10} + \sqrt{4}$, $\sqrt{11} + \sqrt{3}$, $\sqrt{7} + \sqrt{7}$ is the smallest number?

(A) $\sqrt{10} + \sqrt{4}$ (B) $\sqrt{11} + \sqrt{3}$
(C) $\sqrt{7} + \sqrt{7}$ (D) All are equal

Ans: **(B)**
We compare the squares of the given numbers. Since the numbers are all greater than 1, the order of the squares of sums will follow the same order as the sum.
$(\sqrt{10} + \sqrt{4})^2 = 10 + 4 + 4\sqrt{10} = 14 + 4\sqrt{10}$
$(\sqrt{11} + \sqrt{3})^2 = 11 + 3 + 2\sqrt{33} = 14 + 2\sqrt{33}$
$(\sqrt{7} + \sqrt{7})^2 = 7 + 7 + 2\sqrt{7^2} = 14 + 14$
Clearly, $2\sqrt{33} = (\sqrt{11} + \sqrt{3})^2 = $ is the smallest of all.

3. What is the smallest value that must be added to 709, so that the resultant is a perfect square?

(A) 8   (B) 12
(C) 20   (D) 32

Ans: **(C)**
$25^2 = 625$
$26^2 = 676$
$27^2 = 729 > 709$
Therefore, $729 - 709 = 20$ must be added to make it a perfect square.

4. If 34N is divisible by 11, then what is the value of N?

(A) 1   (B) 3
(C) 4   (D) 9

Ans: **(A)**
For a number to be divisible by 11, the alternate sum must be a multiple of 11.
$\Rightarrow 3 - 4 + N = 11k$
$\Rightarrow -1 + N = 11k$
$\Rightarrow N = 11k + 1$
$\Rightarrow N_{min@k=0} = 1$.

5. What is the value of $2^2 + 6^2 + 10^2 + 14^2 - 1^2 - 5^2 - 9^2 - 13^2$?

(A) 0   (B) 15
(C) 30   (D) 60

Ans: **(D)**
$2^2 + 6^2 + 10^2 + 14^2 - 1^2 - 5^2 - 9^2 - 13^2$
$= 4 + 36 + 100 + 196 - 1 - 25 - 81 - 169$
$= 336 - 276$
$= 60$

6. The sum of three consecutive natural numbers is always divisible by _____.

(A) 3   (B) 9
(C) 15   (D) 21

Ans: **(A)**
Let three consecutive number be x, (x + 1), (x + 2)
Sum $= x + x + 1 + x + 2 = 3x + 3 = 3(x + 1)$
$\therefore$ Sum of three consecutive natural number will be always divisible by 3

7. A boy added all natural numbers from 1 to 20, however he missed one number due to which the sum becomes 190. What is the number which the boy missed?

(A) 5   (B) 10
(C) 15   (D) 20

Ans: **(D)**
Sum of natural numbers 1 to 20 $= 20 / 2[(2 \times 1 + (20 - 1)1]$
$10 \times 21 = 210$
$\therefore$ Missing natural number $= 210 - 190 = 20$

8. If 142N is divisible by 12, then what is the value of N?

(A) 2   (B) 4

(C) 6   (D) 8

Ans: **(D)**

For 142N to be divisible by 12 it must be divisible by 3 and 4 both

For divisible by 4 last 2 digits divisible by 4

For that N = 0, 4, 8

For divisible by 3 Sum of number will be divisible by 3

For that N = 2, 5, 8

∴ For both N = 8

9. 3/4 part of a tank is filled with oil. After taking out 60 litres of oil the tank is 2/3 part full. What is the capacity(in litres) of the tank?

(A) 240   (B) 360

(C) 600   (D) 720

Ans: **(D)**

Let capacity of tank be x

According to Question,

$\Rightarrow 3x / 4 - 60 = 2x / 3$

$\Rightarrow 3x / 4 - 2x / 3 = 60$

$\Rightarrow x / 12 = 60$

$\Rightarrow x = 720$

∴ Capacity of tank = 720 litres

10. If $N = (\sqrt{6} - \sqrt{5})/(\sqrt{6} + \sqrt{5})$, then what is the value of N +(1/N)?

(A) 10   (B) 11

(C) 12   (D) 22

Ans: **(D)**

$N = (\sqrt{6} - \sqrt{5})/(\sqrt{6} + \sqrt{5})$

$1/N = (\sqrt{6} + \sqrt{5})/(\sqrt{6} - \sqrt{5})$

$N + (1/N) = (\sqrt{6} - \sqrt{5})/(\sqrt{6} + \sqrt{5}) + (\sqrt{6} + \sqrt{5})/(\sqrt{6} - \sqrt{5}) = ((6 + 5 - 2\sqrt{30}) + (6 + 5 + 2\sqrt{30}))/(6 - 5) = 22$

11. What is the value of $(3 + 1)(3^2 + 1)(3^4 + 1)(3^8 + 1)(3^{16} + 1)$?

(A) $(3^{32} - 1)/2$ (B) $(3^{16} - 1)/2$

(C) $(3^{64} - 1)/2$ (D) $(3^{128} - 1)/2$

Ans: **(A)**

$(a + 1)(a^2 + 1)(a^4 + 1)(a^8 + 1)(a^n + 1) = (a^{2n} - 1)/(a - 1)$

$(3 + 1)(3^2 + 1)(3^4 + 1)(3^8 + 1)(3^{16} + 1) = (3^{32} - 1)/(3 - 1) = (3^{32} - 1)/2$

12. Which value among $\sqrt{11} + \sqrt{5}$, $\sqrt{14} + \sqrt{2}$ and $\sqrt{8} + \sqrt{8}$ is the largest?

(A) $\sqrt{11} + \sqrt{5}$ (B) $\sqrt{14} + \sqrt{2}$

(C) $\sqrt{8} + \sqrt{8}$ (D) All are equal

Ans: **(C)**

$\sqrt{11} + \sqrt{5}$ is equal to 5.55

$\sqrt{14} + \sqrt{2}$ is equal to 5.16

$\sqrt{8} + \sqrt{8}$ is equal to 5.66

$\sqrt{8} + \sqrt{8}$ is largest among the all

13. What is the value of $\frac{((0.5)^3 - (0.1)^3)}{(0.5)^2 + 0.5 \times 0.1 + (0.1)^2}$?

(A) 0.1   (B) 0.4

(C) 0.5   (D) 0.6

Ans: **(B)**

$a^3 - b^3 = (a-b)(a^2 + ab + b^2)$

$$\frac{((0.5)^3 - (0.1)^3)}{(0.5)^2 + 0.5 \times 0.1 + (0.1)^2}$$

$$= \frac{(0.5 - 0.1)((0.5)^2) + 0.5 \times 0.1 + (0.1)^2}{(0.5)^2 + 0.5 \times 0.1 + (0.1)^2}$$

$= 0.4$

14. How many positive factors of 36 are there?

(A) 4   (B) 6

(C) 9   (D) 12

Ans: **(C)**

The factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, 36

So there are total 9 positive factors of 36

15. If $P = (\sqrt{7} - \sqrt{6})/(\sqrt{7} + \sqrt{6})$, then what is the value of P +(1/P)?

(A) 12   (B) 13

(C) 24   (D) 26

Ans: **(D)**

$\Rightarrow P = \frac{\sqrt{7} - \sqrt{6}}{\sqrt{7} + \sqrt{6}} = \frac{(\sqrt{7} - \sqrt{6})^2}{7 - 6} = 7 + 6 - 2\sqrt{42} = 13 - 2\sqrt{42}$

$\Rightarrow \frac{1}{P} = \frac{\sqrt{7}+\sqrt{6}}{\sqrt{7}-\sqrt{6}} = \frac{(\sqrt{7}+\sqrt{6})^2}{7-6} = 7 + 6+2\sqrt{42} =$

$13 + 2\sqrt{42}$

$\Rightarrow P +\frac{1}{P} = 13 - 2\sqrt{42} + 13 + 2\sqrt{42} = 26$

$\therefore$ P+(1/P) =26

16. Which value among 3200, 2300 and 7100 is the largest?

(A) 3200   (B) 2300

(C) 7100   (D) All are equal

Ans: **(C)**

2300 < 3200 < 7100

7100 is the largest

17. What is the value of 32 + 72 + 112 + 132 + 172 – 12 – 52 – 92 – 112 – 152?

(A) 5   (B) 72

(C) 92   (D) 100

Ans: **(D)**

$\Rightarrow$ 32 + 72 + 112 + 132 + 172 - 12 - 52 - 92 - 112 - 152

$\Rightarrow$ 32 - 12 + 72 - 52 + 112 - 112 + 132 - 92 + 172 - 152

$\Rightarrow$ 20 + 20 + 40 + 20

$\therefore$ Sum = 100

18. What is the value of $\frac{(0.7)^3-(0.4)^3}{(0.7)^2+0.7\times 0.4(0.4)^2}$?

(A) 0.3   (B) 0.4

(C) 0.7   (D) 1.1

Ans: **(A)**

Let a = 0.7 and b = 0.4

$\Rightarrow$ The expression is $\frac{a^3-b^3}{a^2+ab+b^2}$

)<=a-b((a²+ab+b²)=(a²+ab+b²)-b(a²+ab+b²)

=>a3+a²b+ab²-a²b-ab-b3

=>(a-b)(a²+ab+b²)=a³-b³

$\Rightarrow \frac{(a-b)(a^2+ab+b^2)}{a^2+ab+b^2} = a - b = 0.7 - 0.4$

= 0.3

19. How many positive factors of 40 are there?

(A) 3   (B) 4

(C) 6   (D) 8

Ans: **(D)** 40 can be factorised as:

$\Rightarrow$ 40 = 1 × 2 × 4 × 5 × 8 × 10 × 20 × 40

$\therefore$ 40 has 8 positive factors.

20. If $1/N = (\sqrt{6} + \sqrt{5})/(\sqrt{6} - \sqrt{5})$, then what is the value of N?

(A) $6 - \sqrt{30}$ (B) $6 + \sqrt{30}$

(C) $11 - 2\sqrt{30}$ (D) $11 + 2\sqrt{5}$

Ans: **(C)**

1/N = ($\sqrt{6}$ + $\sqrt{5}$)/($\sqrt{6}$ - $\sqrt{5}$)

N = ($\sqrt{6}$ - $\sqrt{5}$)/($\sqrt{6}$ + $\sqrt{5}$) × ($\sqrt{6}$ - $\sqrt{5}$)/($\sqrt{6}$ - $\sqrt{5}$)

N = ($\sqrt{6}$ - $\sqrt{5}$)²/1 = 6 + 5 - 2$\sqrt{30}$

$\therefore$ N = 11 - 2$\sqrt{30}$

21. What is the value of positive square root of 69 + 28√5?

(A) $7 + 2\sqrt{5}$ (B) $7 - 2\sqrt{5}$

(C) $2 + 7\sqrt{5}$ (D) $2 - 7\sqrt{5}$

Ans: **(A)**

$\sqrt{(69 + 28\sqrt{5})}$

$\sqrt{(49 + 20 + 28\sqrt{5})}$

$\sqrt{(7^2 + (\sqrt{20})^2 + 2 \times 7 \times \sqrt{20})}$

$\sqrt{(7 + \sqrt{20})^2}$

$(7 + \sqrt{20})$

$7 + 2\sqrt{5}$

22. $3^{11} + 3^{12} + 3^{13} + 3^{14}$, is divisible by _____.

(A) 7   (B) 8

(C) 11   (D) 14

Ans: **(B)**

$3^{11} + 3^{12} + 3^{13} + 3^{14}$

$3^{11}(1 + 3 + 9 + 27)$

$3^{11} \times 40$

$3^{11} \times 8 \times 5$

$\therefore 3^{11} + 3^{12} + 3^{13} + 3^{14}$ is divisible by 8

23. A boy added all natural numbers from 1 to 12, however he added one number twice due to which the sum becomes 80. What is the number which he added twice?

(A) 3   (B) 2

(C) 7   (D) 8

Ans: **(B)**

Sum of all natural numbers from 1 to 12 = 78

By adding a number twice sum becomes 80

∴ the number which is added twice = 80 - 78 = 2

24. What smallest value must be added to 508, so that the resultant is a perfect square?
(A) 4   (B) 9
(C) 18   (D) 21

Ans: **(D)**
The square of 23 is 529
∴ the value added to make 508 a perfect square = 529 - 508 = 21

25. Which value among $\sqrt[4]{7}, \sqrt[3]{11}$ and $\sqrt[12]{1257}$ is largest?
(A) $\sqrt[3]{11}$ (B) $\sqrt[4]{7}$,
(C) $\sqrt[12]{1257}$ (D) All are equal

Ans: **(A)**
Given 3 number can be written as:,
$11^{\frac{3}{4}}, 11^{\frac{3}{4}}, 1257^{\frac{1}{12}}$
It can also written as:
$(7^3)^{\frac{1}{3\times4}}, (11)^{\frac{1}{4\times3}}$ and $(1257^1)^{\frac{1}{1\times12}}$,
$= (343)^{\frac{1}{12}}, (14641)^{\frac{1}{12}}$ and $(1257)^{\frac{1}{12}}$,
∴ largest number is $\sqrt[3]{11}$

26. What is the value of
$$\sqrt{1+\frac{1}{2^2}+\frac{1}{3^2}} + \sqrt{1+\frac{1}{3^2}+\frac{1}{4^2}} + \sqrt{1+\frac{1}{4^2}+\frac{1}{5^2}}$$
(A) 18/5   (B) 4/3
(C) 7/3   (D) 33/10

Ans: **(D)**
$$\sqrt{1+\frac{1}{2^2}+\frac{1}{3^2}} + \sqrt{1+\frac{1}{3^2}+\frac{1}{4^2}} + \sqrt{1+\frac{1}{4^2}+\frac{1}{5^2}} +$$
$$= \sqrt{\frac{36+9+4}{36}} + \sqrt{\frac{144+16+9}{144}} + \sqrt{\frac{400+25+16}{400}}$$
$$\sqrt{\frac{49}{36}} + \sqrt{\frac{169}{144}} + \sqrt{\frac{441}{400}}$$
: 7/6 + 13/13 + 21/20 = 198/60 = 33/10

27. What is the value of $(203 + 107)^2 - (203 - 107)^2$?

(A) 85886   (B) 86884
(C) 43442   (D) 87884

Ans: **(B)**
$(203 + 107)^2 - (203 - 107)^2 = (310)^2 - (96)^2$
We know $(a)^2 - (b)^2 = (a + b)(a - b)$
$(310)^2 - (96)^2 = (310 + 96)(310 - 96) = (406)(214) = 86884$

28. If 46N is divisible by 18, then what is the value of N?
(A) 2   (B) 4
(C) 7   (D) 8

Ans: **(D)**
To be divisible by 18, 46N must be divisible by 2, 3, 6 and 9.
As per divisibility rule,
⇒ to be divisible by 2, value of N should be either 2, 4, 6, 8 or 0
⇒ to be divisible by 3, value of N can be 2, 5 or 8 as sum of the digit (4 + 6 + N) must be divisible by 3.
⇒ to be divisible by 6, value of N should be divisible by 2 and 3.
⇒ to be divisible by 9, value of N should be 8 as sum of the digit (4 + 6 + N) must be divisible by 9.
∴ 468 is divisible by 18

29. Which is the smallest four digit number that is a perfect square?
(A) 1024   (B) 1048
(C) 1021   (D) 1010

Ans: **(A)**
Smallet 4 digit number - 1000
∴ 1000 ---- √2 = 31.62 ∴ 10002 = 31.62
∴ Smallest perfect 4 digit number will be $(32)^2 = 1024$

30. $4^{11} + 4^{12} + 4^{13} + 4^{14}$ is divisible by _____.
(A) 3   (B) 7
(C) 17   (D) 9

Ans: **(C)**
$4^{11} + 4^{12} + 4^{13} + 4^{14} = 4^{11}(1 + 4 + 4^2 + 4^3) = 4^{11}(1 + 4 + 16 + 64) = 85 \times 4^{11}$

Which is divisible by 17.

31. What is the value of $\frac{(1.1)^3+(0.7)^3}{(1.1)^2-1.1\times0.7+(0.7)^2}$

(A) 0.4 (B) 0.7

(C) 1.1 (D) 1.8

Ans: **(D)**

$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

$(a^3 + b^3)/ (a^2 - ab + b^2) = (a + b)$

here, a = 1.1, b = 0.7

∴ $[(1.1)^3 + (0.7)^3]/[(1.1)^2 - 1.1 \times 0.7 + (0.7)^2] =$

1.1 + 0.7 = 1.8

32. For what value of N, 270N will be a perfect square, where 270N is a 4 digit number??

(A) 1 (B) 6

(C) 4 (D) 9

Ans: **(C)**

Checking options, we get,

$2704 = (52)^2$

33. What least value should be added to 2505, so that it becomes a perfect square?

(A) 5 (B) 20

(C) 70 (D) 96

Ans: **(D)**

Nearest perfect square = $(51)^2 = 2601$

Hence, (2601 - 2505) = 96 should be added to become a perfect square.

34. What is the value of $999\frac{1}{2} + 999\frac{1}{6} + 999\frac{1}{12} + 999\frac{1}{20} + 999\frac{1}{30}$

(A) $999\frac{1}{6}$ (B) $999\frac{5}{6}$

(C) $4995\frac{1}{6}$ (D) $4995\frac{5}{6}$

Ans: **(D)**

$999\frac{1}{2} = 999 + \frac{1}{2}$

∴ $999\frac{1}{2} + 999\frac{1}{6} + 999 + 999\frac{1}{20} + 999\frac{1}{30}$

$= 5 \times 999$

$+\left(\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \frac{1}{20} + \frac{1}{30}\right)$

$= 4995 + \frac{30+10+5+3+2}{60} = 4995 + \frac{5}{6} = 4995\frac{5}{6}$

35. If N =(√7 – √5)/(√7 + √5), then what is the value of 1/N?

(A) 6 – √35 (B) 6 + √35

(C) 7 + √35 (D) 7 – √35

Ans: **(B)**

$N = \frac{(\sqrt{7}-\sqrt{5})}{(\sqrt{7}+\sqrt{5})}$

$\frac{1}{N} = \frac{(\sqrt{7}+\sqrt{5})}{(\sqrt{7}-\sqrt{5})}$

On rationalizing, we get,

$\frac{1}{N}\frac{(\sqrt{7}+\sqrt{5})(\sqrt{7}+\sqrt{5})}{7-5} = \frac{7+5+2\sqrt{35}}{2} = 6 + \sqrt{35}$

36. The sum of three consecutive even numbers is always divisible by _____.

(A) 12 (B) 6

(C) 18 (D) 24

Ans: **(B)**

Sum of three consecutive integers is always divisible by 6.

For ex:

Let three consecutive integers be 21, 22 and 23.

Sum = 66, which is divisible by 6.

37. How many positive factors of 24 are there?

(A) 3 (B) 4

(C) 6 (D) 8

Ans: **(D)**

$24 = 2^3 \times 3$

Formula:

Number = $a^x \times b^y \times c^z$, where a, b and c are prime factors

Total number of positive factors = (x + 1) × (y + 1) × (z + 1)

Hence, Total number of positive factors = (3 + 1) × (1 + 1) = 8

38. 4/5 part of a tank is filled with oil. After taking out 42 litres of oil the tank is 3/4 part full. What is the capacity(in litres) of the tank?

(A) 420 (B) 630

(C) 840 (D) 1680

Ans: **(C)**

Part of tank filled with oil = 4/5

Taking out quantity = 42 litres
New Part of tank filled with oil = 3/4
CALCULATION:
Let the capacity of the tank be x.
Given that,
4x/5 - 42 = 3x/4
4x/5 - 3x/4 = 42
x/20 = 42
x = 840 L
∴ Capacity of the tank is 840L

39. What is the largest four digit number which is a perfect square?
(A) 9704   (B) 9801
(C) 9901   (D) 9999
Ans: **(B)**
Checking options, we find that,
Only option 2 is a perfect square.
Hence, option 2 is correct.

40. The sum of three consecutive odd numbers is always divisible by _____.
(A) 3   (B) 9
(C) 15   (D) 21
Ans: **(A)**
Let, three consecutive odd numbers are x – 1, x and x + 1
∴ Sum of three consecutive odd numbers,
⇒ x – 1 + x + x + 1 = 3x
∴ Sum of three consecutive odd numbers is always divisible by 3

41. A boy added all natural numbers from 1 to 20. However he added one number twice, due to which the sum becomes 215. What is the number which he added twice?
(A) 5   (B) 7
(C) 11   (D) 15
Ans: **(A)**
Let, the number he added twice = x
Sum of all natural numbers from 1 to 20,
⇒ 20 × (20 + 1)/2
⇒ 10 × 21
⇒ 210 According to problem,

⇒ 210 + x = 215
⇒ x = 5

42. 6/7 part of a tank is filled with oil. After taking out 60 litres of oil the tank is 4/5 part full. What is the capacity(in litres) of the tank?
(A) 350   (B) 700
(C) 360   (D) 1050
Ans: **(D)**
Let, capacity of the tank = x lit.
According to problem,
⇒ 6x/7 – 60 = 4x/5
⇒ 6x/7 – 4x/5 = 60
⇒ (30x – 28x)/35 = 60
⇒ 2x = 60 × 35
⇒ x = 2100/2
⇒ x = 1050
∴ The capacity of the tank = 1050 liter

43. For what value of N, 34N will be a perfect cube, where 34 N is a 3 digit number?
(A) 2   (B) 3
(D) 4   (D) 5
Ans: **(B)**
We know, $7^3 = 343$
∴ For N = 3, 34 N will be a perfect cube.

44. What is the value of
$111\frac{1}{2} + 111\frac{1}{6} + 111\frac{1}{12} + 111\frac{1}{20} + 111\frac{1}{30}$?
(A) $111\frac{1}{6}$ (B) $111\frac{5}{6}$
(C) $555\frac{5}{6}$ (D) $555\frac{1}{6}$
Ans: **(C)**
⇒ $111\frac{1}{2} + 111\frac{1}{6} + 111\frac{1}{12} + 111\frac{1}{20} + 111\frac{1}{30}$
⇒ 111 + ½ + 111 + 1/6 + 111 + 1/12 + 111 + 1/20 + 111 + 1/30
⇒ (111 + 111 + 111 + 111 + 111) + (1/2 + 1/6 + 1/12 + 1/20 + 1/30)
⇒ (555) + (30 + 10 + 5 + 3 + 2)/60
⇒ (555) + 50/60
⇒ 555 + 5/6
⇒ 55556

45. If $N = (\sqrt{8} + \sqrt{6})/(\sqrt{8} - \sqrt{6})$, then what is the value of $N - (1/N)$?

(A) $8\sqrt{3}$ (B) 14

(C) 7   (D) 0

Ans: **(A)**

$N = (\sqrt{8} + \sqrt{6})/(\sqrt{8} - \sqrt{6})$

$\therefore \dfrac{1}{N} = (\sqrt{8} - \sqrt{6})(\sqrt{8} + \sqrt{6})$

$\therefore N - (1/N)$

$\Rightarrow \dfrac{\sqrt{8}+\sqrt{6}}{\sqrt{8}-\sqrt{6}} - \dfrac{\sqrt{8}-\sqrt{6}}{\sqrt{8}+\sqrt{6}}$

$\Rightarrow \dfrac{(\sqrt{8}+\sqrt{6})^2 (\sqrt{8}-\sqrt{6})^2}{(\sqrt{8}-\sqrt{6})(\sqrt{8}+\sqrt{6})}$

$\Rightarrow \dfrac{(8+6+2\sqrt{48}) \; (8+6-2\sqrt{48})}{8-6}$

$\Rightarrow 4\sqrt{48}/2$

$\Rightarrow 2\sqrt{48}$

$\Rightarrow 8\sqrt{3}$

46. Which one among $3\sqrt{6}$, $\sqrt{5}$ and $6\sqrt{12}$ is the largest?

(A) $3\sqrt{6}$ (B) $\sqrt{5}$

(C) $6\sqrt{12}$ (D) All are equal

Ans: **(B)**

$\Rightarrow 3\sqrt{6} = (6)^{\frac{1}{3}} = (6)^{\frac{4}{12}} = (6^4)^{\frac{1}{12}}$

$= (1296)^{1/12}$

$\Rightarrow \sqrt{5} = (5)^{\frac{1}{2}} = (5)^{\frac{6}{12}} = (5^6)^{\frac{1}{12}}$

$= (15625)^{1/12}$

$\Rightarrow 6\sqrt{12} = (12)^{\frac{1}{6}} = (12)^{\frac{2}{12}} = (12^2)^{\frac{1}{12}}$

$= (144)^{1/12}$

$\therefore$ We can see the largest number is $= \sqrt{5}$

47. What is the value of positive square root of $14 + 6\sqrt{5}$?

(A) $3 + \sqrt{5}$ (B) $3 - \sqrt{5}$

(C) $5 + \sqrt{3}$ (D) $5 - \sqrt{3}$

Ans: **(A)**

$\Rightarrow 14 + 6\sqrt{5}$

$\Rightarrow 9 + 5 + 6\sqrt{5}$

$\Rightarrow (3)^2 + (\sqrt{5})^2 + 2 \times 3 \times \sqrt{5}$

$\Rightarrow (3 + \sqrt{5})^2$

$\therefore$ the value of positive square root of $14 + 6\sqrt{5}$,

$\Rightarrow \sqrt{(3 + \sqrt{5})^2}$

$\Rightarrow 3 + \sqrt{5}$

48. What is the value of $\dfrac{(0.7)^3 + (0.3)^3}{(0.7)^2 - 0.7 \times 0.3 + (0.3)^2}$

(A) 1.2   (B) 0.8

(C) 1   (D) 1.4

Ans: **(C)**

$\Rightarrow \dfrac{(0.7)^3 + (0.3)^3}{(0.7)^2 - 0.7 \times 0.3 + (0.3)^2}$

$\Rightarrow \dfrac{(0.7+0.3)[(0.7)^2 - 0.7 \times 0.3 + (0.3)^2]}{(0.7)^2 - 0.7 \times 0.3 + (0.3)^2}$

$\Rightarrow 0.7 + 0.3$

$\Rightarrow 1$

49. A boy added all natural numbers from 1 to 10, however he added one number twice due to which the sum becomes 58. What is the number which he added twice?

(A) 3   (B) 4

(C) 7   (D) 8

Ans: **(A)**

Let, the number he added twice = x

Sum of all natural numbers from 1 to 10,

$\Rightarrow 10 \times (10 + 1)/1$

$\Rightarrow 55$

According to problem,

$\Rightarrow 55 + x = 58$

$\Rightarrow x = 3$

$\therefore$ The number he added twice = 3

50. If $x = 7 + 2\sqrt{10}$, then what is the value of $\sqrt{x} - 1/\sqrt{x}$?

(A) $2(\sqrt{5} + 2\sqrt{2})/3$ (B) $2(\sqrt{5} - 2\sqrt{2})/3$

(C) $-2(\sqrt{5} + 2\sqrt{2})/3$ (D) $2(2\sqrt{2} - \sqrt{5})/3$

Ans: **(A)**

$x = 7 + 2\sqrt{10} = 5 + 2 + 2\sqrt{2}\sqrt{5} = (\sqrt{5} + \sqrt{2})^2$

$= \sqrt{x} = \sqrt{5} + \sqrt{2}$

$= (\sqrt{x} - 1/\sqrt{x}) = \sqrt{5} + \sqrt{2} - [1/(\sqrt{5} + \sqrt{2})] = \sqrt{5} + \sqrt{2} - [(\sqrt{5} - \sqrt{2})/3] = (2\sqrt{5} + 4\sqrt{2})/3$

$= 2(\sqrt{5} + 2\sqrt{2})/3$

Reasoning Ability Practice Set

1. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:
All women are engineers.
Some singers are engineers.

Conclusions:
I. All women are singers
II. All singers are women
III. Some engineers are women.
(A) Only conclusions I and II follow.
(B) Only conclusion I follows.
(C) Only conclusion III follows.
(D) Only conclusions II and III follow.

Ans: **(C)**
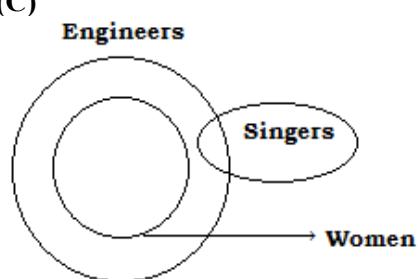
Clearly, only conclusion III follows

2. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:
Some tractors are boats.
All cups are boats.
All jars are tractors.

Conclusions:
I. Some tractors are cups.
II. No jar is boat.
III. Some cups are jars.
(A) Only conclusions I and II follow.
(B) Only conclusions II and III follow.
(C) None of the conclusions follows.
(D) Only conclusions I and III follow.

Ans: **(C)**

I
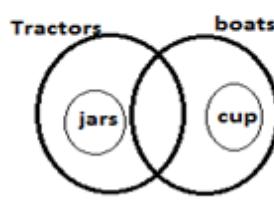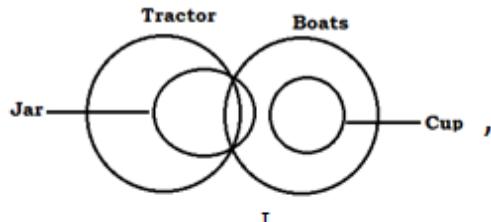
II
Many situations are possible
None of conclusions follows .

3. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:
AII parks are schools.
No school is a college.

Conclusions:
I. No college is a school.
II. Some schools are parks.
III. No park is a college.
(A) All the conclusions follow.
(B) Only conclusions II and III follow.
(C) Only conclusions I and II follow.
(D) Only conclusions I and III follow.

Ans: **(A)**
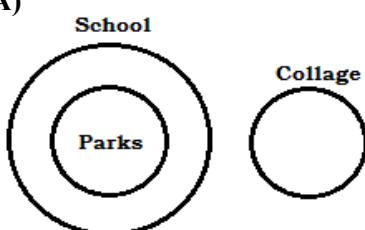
Clearly, All the conclusions follow

4. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide

which of the conclusions logically follow(s) from the statements.

Statements:
All breads are cakes.
All eggs are cakes.
Conclusions:
I. Some cakes are breads.
II. Some breads are eggs.
III. No bread is an egg.
(A) All the conclusions follow.
(B) Conclusion I and either conclusion II or III follow.
(C) Only conclusions I and II follow.
(D) Only conclusions I and III follow.

Ans: **(B)**
Two situations are possible
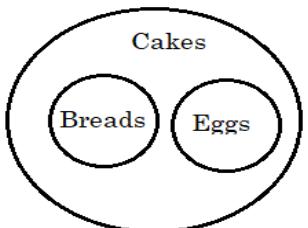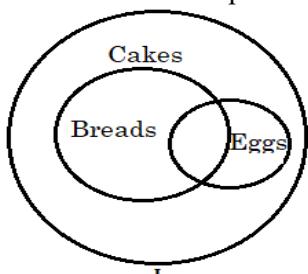
Clearly, conclusion I and either conclusion II or III

5. Two statements are given followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements:
Some ants are bats
Some ants are crabs.
Conclusions:
I. Some bats are crabs.
II. No crab is ant.
III. No bat is crab.
(A) Only conclusions I and III follow.
(B) Only conclusions I and II follow.

(C) Either conclusion I or III follow.
(D) Either conclusion I or II follow.

Ans: **(C)**
Three Situations are possible
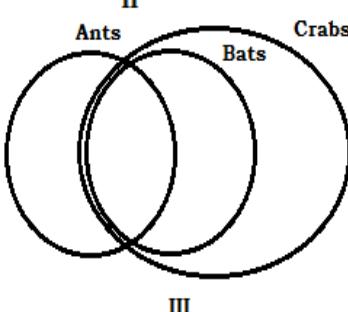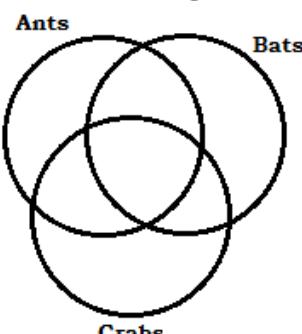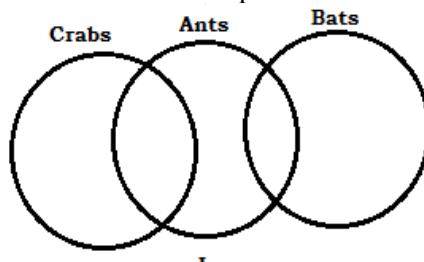
Clearly either conclusion I or III follow

6. M is the brother of N. N is the brother of P. Q is the father of M. Based on these statements, which of the following statements cannot be definitely true?
(A) P is the brother of M
(B) M is the brother of P
(C) N is the son of Q
(D) N is the brother of M

Ans: **(A)**
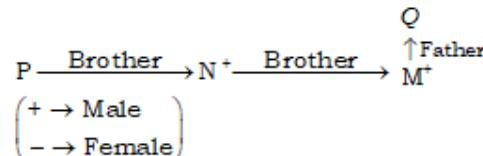
It cannot be determined whether P is male or female, so option 'A' is not satisfies.

7. Two statements are given followed by three conclusions numbered I, II and III.

Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

No ball is pen.

All pens are boxes.

Conclusions:

I. Some boxes are pens.

II. Some boxes are balls.

III. No box is ball.

(A) Either conclusion II or III follows

(B) Conclusion I and either II or III follows

(C) All conclusions follow

(D) Only conclusion I follows

Ans: **(B)**
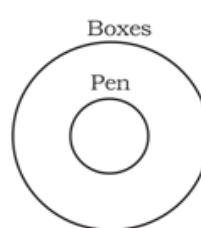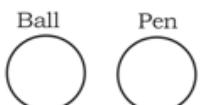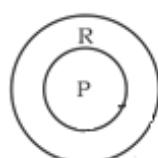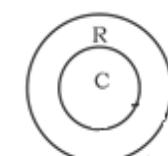
8. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All purses are rupees.

Some rupees are coins.

Conclusions:

I. Some purses are coins.

II. No purse is coin.

III. No rupee is coin.

(A) Either Conclusion I or II follows.

(B) Only Conclusion I and III follow.

(C) Only Conclusion I and II follow.

(D) Only Conclusion II and III follow.

Ans: **(A)**

Statements :

(A)

(B)

or

Clearly, Either Conclusion I or II follows.

9. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some children are clever.

All children are honest.

Conclusions:

I. Some clever are children.

II. Some honest are children.

III. Some clever are honest.

(A) Either conclusion I or III follows.

(B) Only conclusions I and II follow.

(C) Only conclusions II and III follow.

(D) All conclusions follow.

Ans: **(D)**
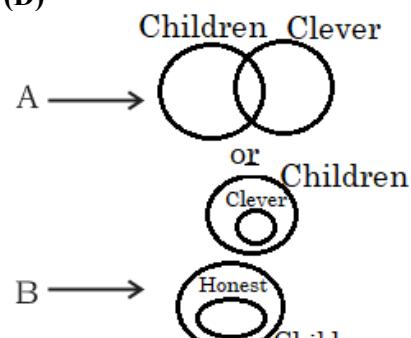
Clearly, All conclusions follows

10. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statements:**
All ice creams are juices.
No juice is chocolate.
Conclusions:
I. Some chocolates are ice-creams.
II. Some juices are ice-creams.
III. No ice-cream is chocolate.
(A) Only conclusions I and II follow.
(B) Either conclusion I or III follows.
(C) Only conclusions II and III follow.
(D) Only conclusions I and III follow.
Ans: **(C)**
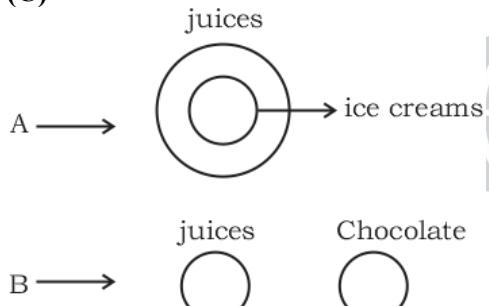
Clearly, only conclusions II and III follow.

11. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statements:**
All equipment are screw-drivers.
All machines are equipment.
Conclusions:
I. Some screw-drivers are equipment.
II. Some screw-drivers are machines.
III. All equipment are machines.
(A) Only conclusions I and III follow.
(B) Only conclusions II and III follow.
(C) All conclusions follow.
(D) Only conclusions I and II follow.
Ans: **(D)**
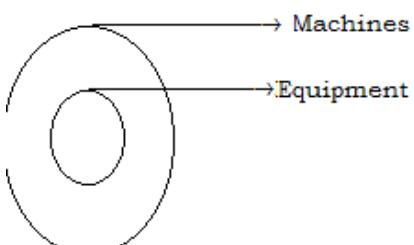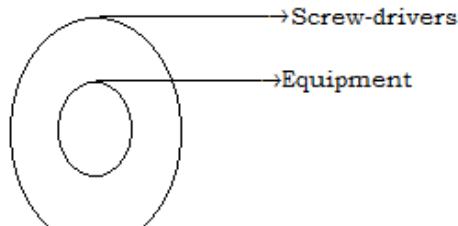
Clearly, only conclusions I and II follow

12. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statements:** Some plants are vegetable.
All vegetables are vitamins.
Conclusions:
I. Some vitamins are plants.
II. Some vitamins are vegetables.
III. No vitamin is plant.
(A) Either conclusion I or III follows.
(B) Only conclusions I and II follow.
(C) Only conclusions I and III follow.
(D) Only conclusions II and III follow.
Ans: **(B)**
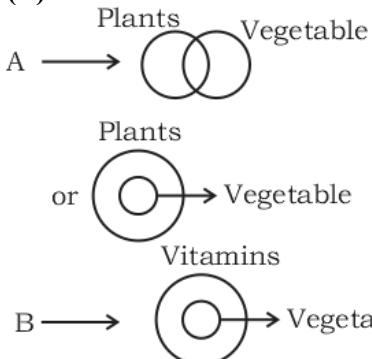
Clearly, conclusions I and II follow

13. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at

variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

A - Some chilies are potatoes.

B - Some potatoes are onions.

Conclusions:

I. Some onions are chilies.

II. Some onions are potatoes.

III. No onion is chilly.

(A) Conclusion II and either conclusion I or III follow.

(B) Only conclusions I and II follow.

(C) Only conclusions II and III follow.

(D) Conclusion I and either conclusion II or III follow

Ans: **(A)**
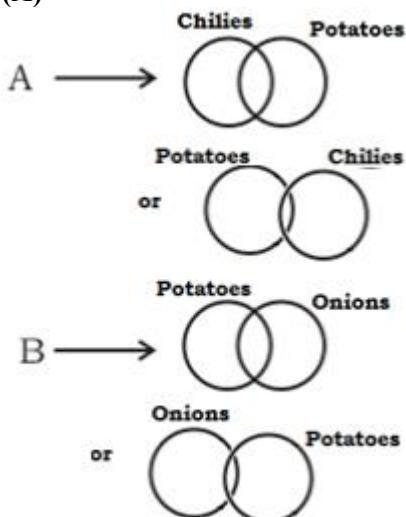
Clearly, conclusion II and either conclusion I or III follow.

14.   Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some autos are cycles.

All cycles are trucks.

Conclusions:

I. Some trucks are autos.

II. Some trucks are cycles.

III. Some cycles are autos.

(A) Conclusion I and III follow.

(B) Only conclusions II and III follow.

(C) All conclusions follow.

(D) Only conclusions I and II follow.

Ans: **(C)**
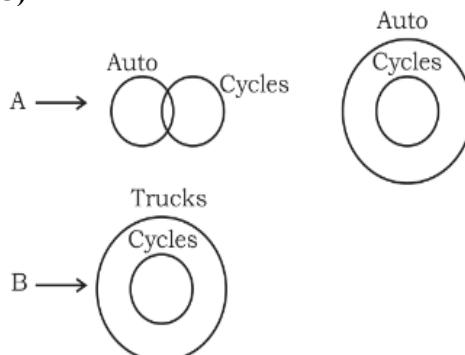
Clearly All conclusions follow.

15.   Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All cocks are bears

All bears are horses.

Conclusions:

I. Some bears are cocks.

II. Some horses are cocks

III. All cocks are horses.

(A) Only conclusions I and II follow.

(B) Only conclusions II and III follow.

(C) Only conclusions I follow.

(D) All the conclusions follow.

Ans: **(D)**
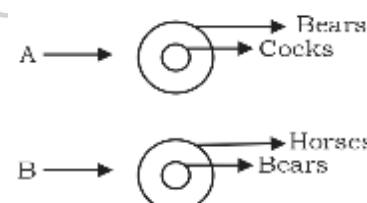
Clearly, all the conclusions follow.

16.   Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

All eggs are hens.

All hens are birds.
All birds are crows
Conclusions:
I. All eggs are crows.
II. All hens are crows
III. Some crows are birds.
(A) Only conclusion I and II follow.
(B) All conclusions I, II and III follow.
(C) Only conclusion I follow.
(D) Only conclusion II and III follow.
Ans: **(B)**
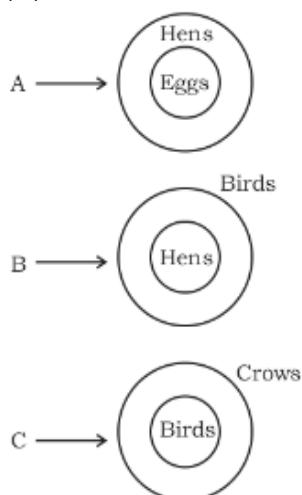
Clearly all conclusions I, II and III follow.

17. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statements:**
All hens are eggs.
All birds are eggs.
Some eggs are lions
Conclusions:
I. Some lions are eggs.
II. Some eggs are hens.
III. Some eggs are birds
(A) All the conclusions follow.
(B) Either conclusion II or III follows.
(C) Only conclusion I follow.
(D) Only conclusions I and II follow.
Ans: **(A)**
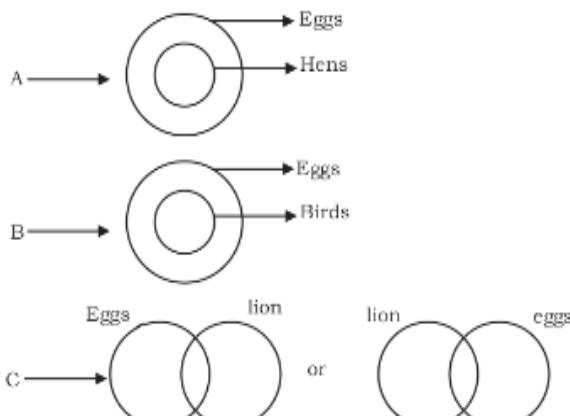
Clearly, All the conclusions follow.

18. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements:
All hens are eggs.
No birds are eggs.
All eggs are lions
Conclusions:
I. All hens are lions.
II. Some lions are hens.
III. No eggs are birds.
(A) Either conclusion II or III follows.
(B) Only conclusion I follows.
(C) All the conclusions follow.
(D) Only conclusions I and II follow.
Ans: **(C)**
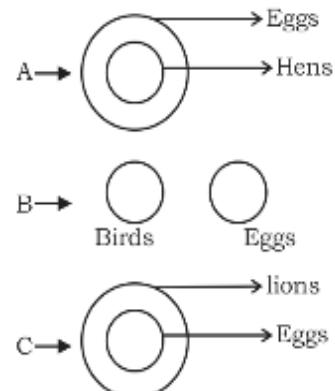
Clearly all the conclusions follow

19. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the

statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statements:
A - All knifes are axes.
B - All axes are swords.
B - All saws are swords.
Conclusions:
I. All swords are knifes.
II. Some axes are saws.
III. No axe is saw.
(A) Either conclusion II or III follows.
(B) Only conclusion I follows.
(C) All the conclusions follow.
**(D)** Only conclusions I and II follow.
Ans: **(A)**
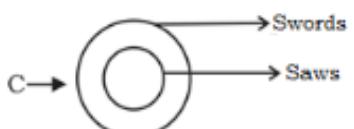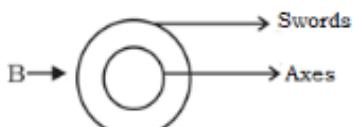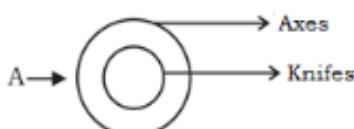
Clearly, either conclusions II or III follows.

20. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statements:**
All hens are eggs.
All birds are eggs.
All eggs are lions
Conclusions:
I. All hens are lions.
II. Some lions are eggs.
III. All birds are lions.
(A) Only conclusions II and III follow.
(B) Only conclusions I and II follow.
(C) Only conclusion I follows.

(D) All the conclusions follow.
Ans: **(D)**
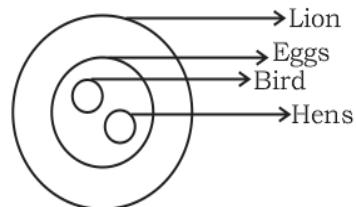
Clearly all the conclusions follow.

21. Two statements are given, followed by four conclusions numbered I, II III and IV. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statement:**
No carrot is root.
All roots are potatoes.
Conclusions:
I. No carrot is potatoes.
II. No potatoes is carrot.
III. Some potatoes are roots.
IV. All the potatoes are roots
(A) Only conclusion(III) follow
(B) Conclusion(I) and(IV) follows
(C) Conclusion(I) and(II) follows
(D) Only conclusion(I) follow
Ans: **(A)**
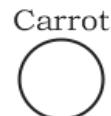
Clearly only conclusion (II) follow.

22. Three statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
**Statements:**
All knifes are axes.
All axes are swords.
All saws are swords.
Conclusions:
I. All swords are knifes.

II. Some swords are axes.
III. Some swords are saws.
(A) Only conclusions II and III follow.
(B) Only conclusions I and II follow.
(C) Only conclusion I follows.
(D) All the conclusions follow.
Ans: (A)
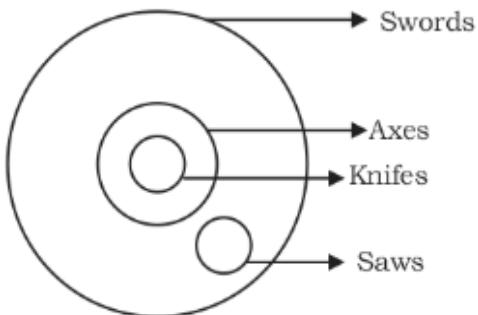
Clearly only conclusions II and III follow.

23. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements:
I. All women are hardworking.
II. All intelligent are advocate.
III. Some intelligent are women.
Conclusions:
I. Some advocates are women.
II. Some hardworking are women.
III. Some women are advocate.
IV. Some hardworking are intelligent.
(A) Only conclusion(II) ,(III) and(IV) follow
(B) Only conclusion(I) ,(II) and(III) follow
(C) Only conclusion(I) ,(III) and(IV) follow
(D) All conclusions follow

Ans: (D)
Based on information given venn diagram can be drawn as,
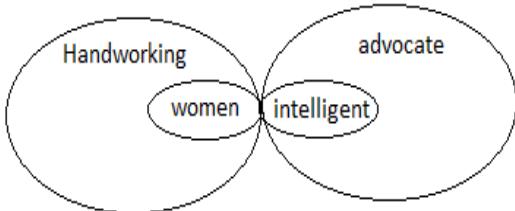
Conclusions:
I. Some advocates are women. ⇒ True
II. Some hardworking are women. ⇒ True
III. Some women are advocate. ⇒ True
IV. Some hardworking are intelligent. ⇒ True
Hence, All conclusion follows.

24. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements:
I. Some pins are cups.
II. No cup is book.
Conclusions:
I. Some pins are books.
II. Some pins are not books.
(A) Only conclusion(I) follows
(B) Only conclusion(II) follows
(C) Both conclusion follow
(D) Neither conclusion(I) nor conclusion(II) follows

Ans: (B)
Based on information given venn diagram can be drawn as,
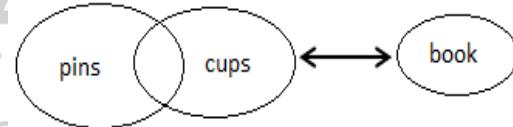
Conclusions:
I. Some pins are books. ⇒ False
II. Some pins are not books. ⇒ True
Hence, only conlusion (II) follows.

25. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements: All pens are cups.
All glasses are cups.
Conclusions: I. Some pens are glass.
II. Some glasses are cups.
III. Some glasses are pens.

(A) Only conclusion I and III follow
(B) Only conclusion I follows
(C) Only conclusion II follows
(D) No conclusion follows

Ans: **(C)**

Drawing the possible Venn diagram of the given statements,
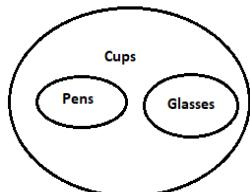
Conclusions:
I. Some pens are glass → False (it is a possibility, but not definite).
II. Some glasses are cups → True.
III. Some glasses are pens → False (it is a possibility, but not definite).
Hence, only conclusion II follows.

26. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements: No pen is a pencil.
No eraser is a cup.
All pencils are erasers.
Conclusions: I. Some pens are not erasers.
II. Some erasers are not pens.
III. No pencil is a cup.
IV. Some erasers are cups.

(A) Only conclusion I and IV follow
(B) Only conclusion I and III follow
(C) Only conclusion II and III follow
(D) Only conclusion II and IV follow

Ans: **(C)**

The least possible Venn Diagram for the given statements is as follows,
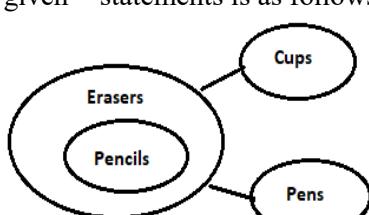
Conclusions:

I. Some pens are not erasers → False.
II. Some erasers are not pens→ True.
III. No pencil is a cup → True.
IV. Some erasers are cups→ False.
Hence, only conclusion II and III follow.

27. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements: I. Some pens are glass.
II. All glass are wall.
Conclusions:
I. Some wall are pens.
II. Some wall are glass.
(A) Only conclusion(I) follows
(B) Only conclusion(II) follows
(C) Both conclusion follow
(D) Neither conclusion(I) nor conclusion(II) follows

Ans: **(C)**

We draw the least possible Venn diagram:
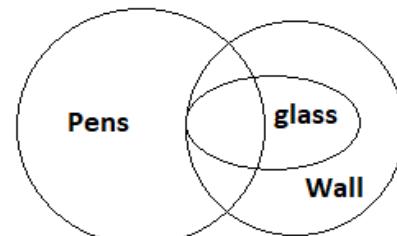
Conclusions:
I. Some wall are pens → It's true.
II. Some wall are glass → It's true.
Hence, both the conclusions are true.

28. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:
I. Some beautiful are intelligent.
II. All intelligent are daughters.
Conclusions:

I. Some intelligent are beautiful.
II. Some daughters are intelligent.
III. Some beautiful are daughters.
(A) Only conclusion(I) and(II) follow
(B) Only conclusion(I) and(III) follow
(C) Only conclusion(II) and(III) follow
(D) All conclusions follow

Ans: **(D)**
We draw the least possible Venn diagram:
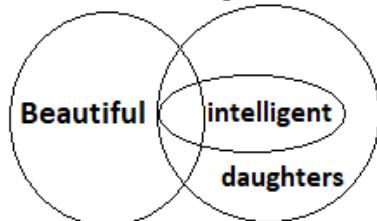
Conclusions:
I. Some intelligent are beautiful → It's True.
II. Some daughters are intelligent → It's True.
III. Some beautiful are daughters → It's True.
Hence, all the conclusions are True.

29. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
   Statements:
   I. Some knifes are spoons.
   II. Some forks are knifes.
   III. No fork is a green.
   Conclusions:
   I. Some spoons are forks.
   II. Some knifes are green.
   III. Some green are not knifes.
   IV. Some knifes are not green.
   (A) Only conclusion(IV) follows
   (B) Only conclusion(III) follows
   (C) Only conclusion(III) and(I) follow
   (D) Conclusion IV follow and either II or III follow

Ans: **(D)**
We draw the least possible Venn diagram:
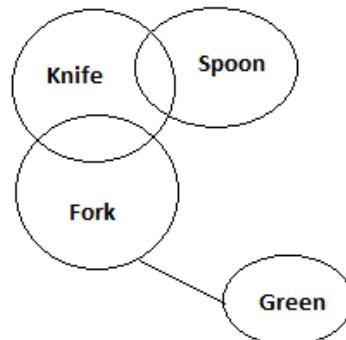
Conclusions:
I. Some spoons are forks → It's false.
II. Some knifes are green → It's false.
III. Some green are not knifes → It's false.
IV. Some knifes are not green → It's true.
Due to complimentary pair either II or III follow.
Hence, Conclusion IV follow and either II or III follow.

30. Conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
   Statements:
   I. Some mangoes are not red.
   II. All red are raw.
   III. Some raw are mangoes.
   Conclusions:
   I. Some mangoes are not raw.
   II. Some red are not mangoes.
   III. All raw are red.
   (A) Only conclusion(I) follows
   (B) Only conclusion(II) and(III) follow
   (C) Only conclusion(I) and(III) follow
   (D) No conclusion follows

Ans: **(D)**
We draw the least possible Venn diagram:
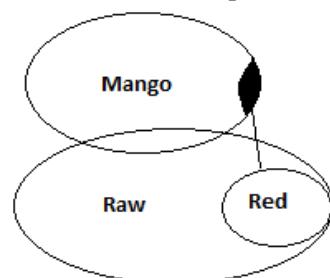
Conclusions:
I. Some mangoes are not raw → It's false.
II. Some red are not mangoes → It's false.

III. All raw are red → It's false.
Hence, No conclusion follows.

31. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
    Statements:
    I. No cups are plate.
    II. All plates are spoons.
    Conclusions:
    I. Some cups are spoons.
    II. Some spoons are plates.
    III. Some plates are spoons.
    (A) Only conclusion(II) follows
    (B) Only conclusion(III) follows
    (C) Only conclusion(I) and(III) follow
    (D) Only conclusion(II) and(III) follow

Ans: **(D)**
The least possible Venn diagram for the given statements is as follows,
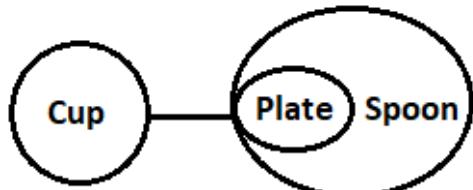
Conclusion:
I. Some cups are spoons → It's possible but not definite, hence false.
II. Some spoons are plates → As all plates are spoons, some spoons will definitely be the plates, hence true.
III. Some plates are spoons → As all plates are spoons given in statements, some plates are definitely spoons, hence true.
Hence, only conclusion II and III follow.

32. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:
I. All men are hardworking.
II. No advocate is hardworking.
III. Some beautiful are men.
Conclusions:
I. Some beautiful are hardworking.
II. Some advocates are not beautiful.
III. Some beautiful are not advocate.
(A) Only conclusion(III) follow
(B) Only conclusion(I) and(III) follow
(C) Only conclusion(II) and(III) follow
(D) Only conclusion(I) and(II) follow

Ans: **(B)**
The least possible Venn diagram for the given statements is as follows,
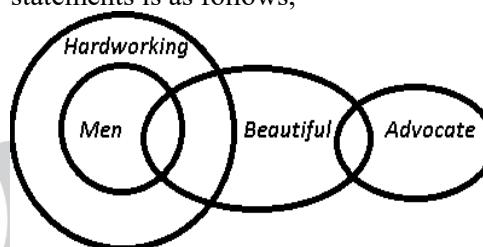
Conclusion:
I. Some beautiful are hardworking → As some beautiful are men and all men are hardworking, some beautiful are definitely hardworking, hence true.
II. Some advocates are not beautiful → It's possible but not definite, hence false.
III. Some beautiful are not advocate → As some beautiful are hardworking, and no hardworking is advocate, some beautiful are definitely not advocate, hence true.
Hence, only conclusion (I) and (III) follow.

33. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
   **Statements:**
    I. Some pens are pencils.
    II. All pencils are erasers.
    III. Some erasers are cups.
    Conclusions:
    I. Some pens are cups.
    II. Some pencils are cups.

III. Some cups are pencils.
IV. Some erasers are pens.
(A) Only conclusion(II) follows
(B) Only conclusion(IV) follows
(C) Only conclusion(I) follows
(D) No conclusion follows

Ans: **(B)**

The least possible Venn diagram for the given statements is as follows,
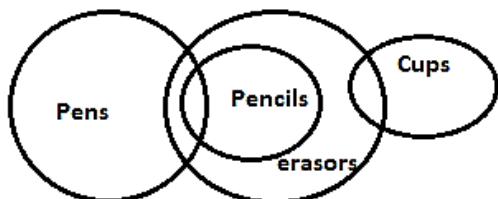
Conclusion:
I) Some pens are cups → It is possible but not definite, hence false.
II) Some pencils are cups → It is possible but not definite, hence false.
III) Some cups are pencils → It is possible but not definite, hence false.
IV) Some erasers are pens → As some pens are pencils, and all pencils are erasers, some pens will definitely be the pens.

34. In the question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
**Statements:**
I. Some pens are cups.
II. No cups are plates.
Conclusions:
I. Some pens are not plates.
II. All pens are plates.
III. Some plates are not pens.
(A) Only conclusion(I) and(II) follow
(B) Only conclusion(I) follows
(C) Only conclusion(II) and(III) follow
(D) No conclusion follows

Ans: **(B)**

The least possible Venn diagram for the given statements is as follows,
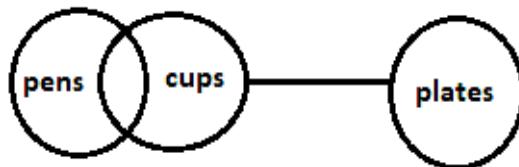
Conclusion:
I) Some pens are not plates → As some pens are cups and no cups are plates, some pens which are cups will definitely not plates, hence true.
II) All pens are plates → False.
III) Some plates are not pens → false.

35. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
**Statements:**
I. All cups are glasses.
II. Some cups are pens.
Conclusions:
I. Some pens are cups.
II. Some pens are glasses.
III. Some pens are not cups.
(A) Only conclusion(I) and(III) follow
(B) Only conclusion(II) and(III) follow
(C) Only conclusion(I) and(II) follow
(D) All conclusions follow

Ans: **(C)**

The least possible Venn diagram for the given statements is as follows,
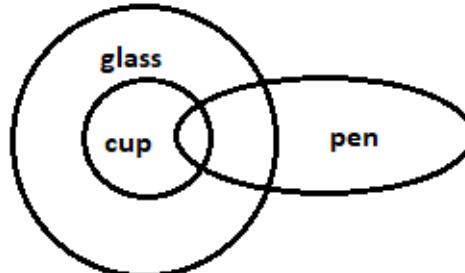
Conclusion:
I) Some pens are cups → It is true.
II) Some pens are glasses. → As all cups are glasses and some cups are pens, some pens will definitely be the glasses.
III) Some pens are not cups → It is possible but not definite, hence false.

Hence, Only conclusion (I) and (II) follow.

36. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:
I. No cities are countries.
II. No countries are villages.

Conclusions:
I. Some countries are city.
II. No villages are city.

(A) Only conclusion(I) follows
(B) Only conclusion(II) follows
(C) Both conclusion follow
(D) Neither conclusion(I) nor conclusion(II) follows

Ans: (D)

The least possible Venn diagram for the given statements is as follows,
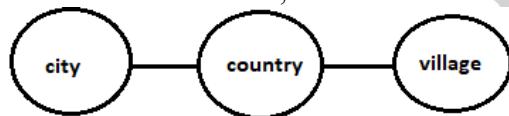
Conclusion:
I) Some countries are city → It is not possible, hence false
II) No villages are city → It is possible but not definite, hence false.

Hence, Neither conclusion (I) nor conclusion (II) follows

37. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:
I. All men are scholars.
II. Some scholars are advocate.

Conclusions:
I. All scholars are men.
II. Some men are advocate.
III. No men is advocate.

**(A)** No conclusion follows
(B) Only conclusion II follows
(C) Only conclusion III follows
(D) Either conclusion II or conclusion III follows

Ans: (D)

The possible Venn diagram:
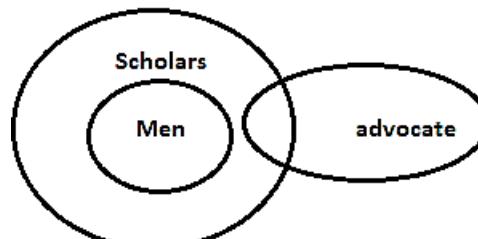
Explanation:
I. All scholars are men → Not possible as all men are Scholars, hence it is false.
II. Some men are advocate → It is not a definite case, hence it is false.
III. No men are advocate → It is not a definite case, hence it is false.
But Conclusion II and III make a complementary pair.
Thus, either conclusion II or conclusion III follows.

38. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:
I. Some men are hardworking.
II. No blue is a advocate.
III. Some blue are men.

Conclusions:
I. Some blue are hardworking.
II. Some men are advocate.
III. Some blue are not hardworking.
IV. Some men are not advocate.

(A) Only conclusion(IV) follows
(B) Only conclusion(II) and(IV) follow
(C) Only conclusion(I) ,(II) and(IV) follow
(D) Only conclusion(III) follows

Ans: (A)

The possible Venn diagram is:
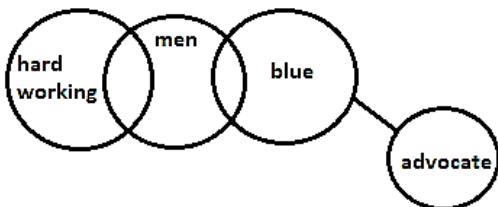
Explanation:
I. Some blue are hardworking → It is not a definite case, hence it is false.
II. Some men are advocate → No direct relation established between the two, hence it is false.
III. Some blue are not hardworking → No direct relation established between the two, hence it is false.
IV. Some men are not advocate → The part of blue which are men are not advocate thus, relation is established, hence, it is true.
Thus, Only conclusion (IV) follows.

39. In the following question are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements:
I. All cups are plates.
II. No plate is spoon.
III. Some spoons are pens.
Conclusions:
I. Some pens are cups.
II. Some cups are spoons.
III. No cup is spoon.
IV. Some pens are not cups.
(A) Only conclusion(II) and(III) follow
(B) Only conclusion(III) and(IV) follow
(C) Only conclusion(I) and(IV) follow
(D) Only conclusion(I) ,(II) and(III) follow
Ans: **(B)**
The possible Venn diagram:
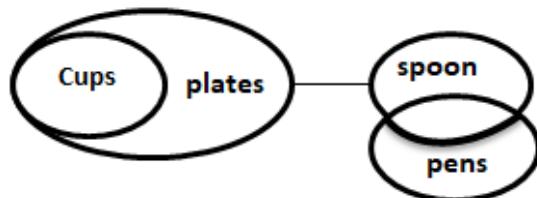
Explanation:

I. Some pens are cups → It is not a definite case, hence false.
II. Some cups are spoons → All cups are part of plates, and No plate is spoon thus, some cups cannot be spoons hence, false.
III. No cup is spoon → It is a definite case, hence true.
IV. Some pens are not cups → Pens which are spoon cannot be cups, hence true
Thus, Only conclusion (III) and (IV) follows.

40. In the following question are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statement.
Statements:
I. All pens are pencils.
II. No pencil is eraser.
III. Some cups are erasers.
Conclusions:
I. Some cups are not pencils.
II. Some cups are not pens.
III. Some pencils are not cups.
IV. No pen is eraser.
(A) Only conclusion(I) ,(II) and(IV) follow
(B) Only conclusion(II) and(IV) follow
(C) Only conclusion(I) and(IV) follow
(D) All conclusions follow
Ans: **(D)**
The possible Venn diagram:
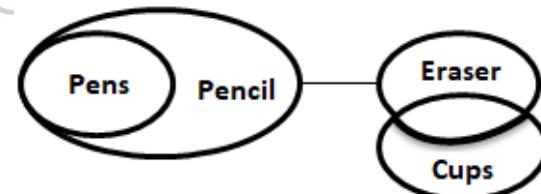
Explanation:
I. Some cups are not pencils → It's true.
II. Some cups are not pens → It's true.
III. Some pencils are not cups → It's true
IV. No pen is eraser → It's true.
Thus, all conclusion follow.

41. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from

commonly known facts, read all the conclusions and then decide which of the given conclusion(s) logically follows the given statements.

Statements:
I. Some clothes are white
II. Some white are flags.
III. No flag is straight.

Conclusions:
I. No cloth is straight.
II. Some white are straight
III. Some flag are clothes.
(A) Only conclusion(I) follows/
(B) Only conclusion(II) follows
(C) Only conclusion(III) follows
(D) None follows

Ans: **(D)**
The possible Venn diagram is:

Explanation:
I. No cloth is straight → It is possible but not definite, hence it is false.
II. Some white are straight → It is possible but not definite, hence it is false.
III. Some flag are clothes → It is possible but not definite, hence it is false.
Thus, None follows.

42. In each of the following question below are given some statements followed by some conclusion, Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements, seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements,
**Statements:** I. All pages are yellow.
II. All yellow are newspapers.
III. Some newspapers are national.
Conclusions: I. Some national are yellow
II. Some newspapers are pages.
III. No page is national.
(A) Only conclusion(I) and(II) follow
(B) Only conclusion(I) and(III) follow
(C) Only conclusion(II) follows
(D) Only conclusion(III) follows

Ans: **(C)**
The possible Venn diagram is:

Explanation:
I. Some national are yellow → There is no direct relationships between the two, hence it is false.
II. Some newspapers are pages → It is a definite case, hence it is true.
III. No page is national → It is not a definite case, hence it is false.
Thus, Only conclusion (II) follows.

43. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements: I. All big are small.
II. Some small are tall.
III. No tall is white.
Conclusions: I. Some big are white.
II. Some big are not white.
III. Some small are not white.
(A) Only conclusion(I) and(II) follow
(B) Only conclusion(II) and(III) follow
(C) Only conclusion(III) follows
(D) None conclusion follows

Ans: **(C)**
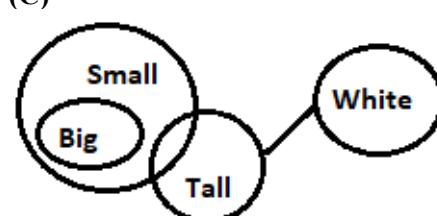
I. Some big are white → False (Possible but not definite)
II. Some big are not white → False (Possible but not definite)
III. Some small are not white → True (As some Tall are Small and no tall is white)

Hence, the correct answer is 'Only conclusion (III) follows'.

44. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements: I. Some cup are hot.

II. All hot are tea.

Conclusions: I. Some tea are cup.

II. All cups are tea.

(A) Only conclusion(I) follows

(B) Only conclusion(II) follows

(C) Both conclusions follow

(D) Neither conclusion(I) nor conclusion(II) follows

Ans: (A)

Drawing least possible diagram:
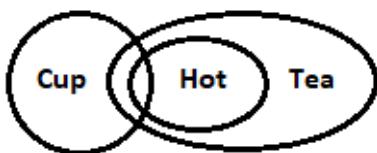
I. Some tea is cup → True

II. All cups are tea → False (This is possible but not definite)

Hence, the correct answer is 'Only conclusion (I) follows'.

45. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements: I. All grapes are green.

II. Some green are hard.

Conclusions: I. Some green are grapes.

II. Some hard are grapes.

III. No grape is hard.

(A) Only conclusion(I) follows

(B) Only conclusion(I) and(II) follow

(C) Only conclusion(I) and(III) follow

(D) All conclusions follow

Ans: (A)

By drawing Venn diagram:
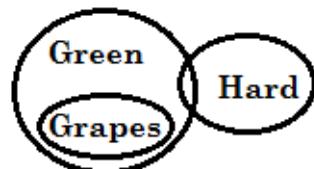
Conclusion 1. Some green are grapes → True (This is definitely true)

Conclusion 2: Some hard are grapes → False (This is possible but not definite)

Conclusion 3: No grape is hard → False (This is definitely False)

Hence, only Conclusion 1 follows.

46. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements: I. All cars are black

II. No black is shining.

Conclusions: I. Some cars are shining.

II. No car is shining.

III. No shining is car.

(A) Only conclusion(I) and(II) follow

(B) Only conclusion(II) and(III) follow

(C) Only conclusion(I) and(III) follow

(D) All conclusions follow

Ans: (B)
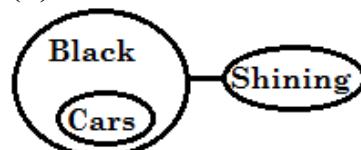
Conclusion 1: Some cars are shining → False (This is definitely false)

Conclusion 2: No car is shining → True (This is definitely true)

Conclusion 3: No shining is car → True (This is definitely true)

Hence, Conclusion 2 and Conclusion 3 follow.

47. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the

given conclusion logically follows the given statements.

Statements: I. Some glasses are brown.

II. All brown are hard.

III. No hard is iron.

Conclusions: I. Some glasses are not iron.

II. Some brown are glass.

III. No glass is iron.

(A) Only conclusion(I) and(II) follow

(B) Only conclusion(II) and(III) follow

(C) All conclusions follow

(D) None follows

Ans: **(A)**

The least possible Venn diagram for the given statements is as follows:

I. Some glasses are not iron → true.

II. Some brown are glass → true.

III. No glass is iron → False.

Hence, both the conclusions I and II follow.
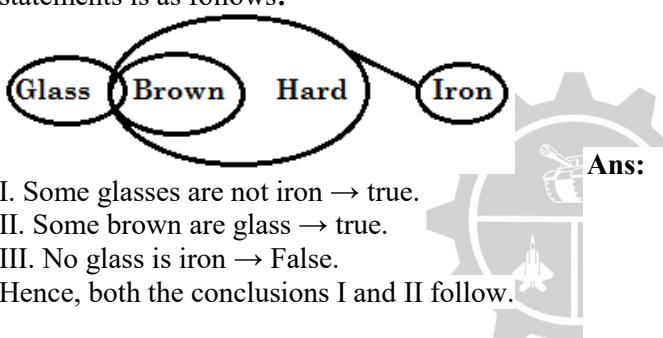
48. In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements: I. All black are white.

II. All blue are black.

Conclusions: I. Some white are blue.

II. All blue are white.

(A) Only conclusion(I) follows

(B) Only conclusion(II) follows

(C) Both conclusion follow

(D) Neither conclusion(I) nor conclusion(II) follows

Ans: **(C)**

The least possible Venn diagram for the given statements is as follows:
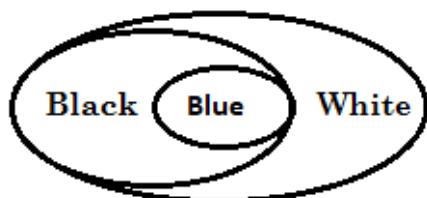
I. Some white is blue → true.

II. All blue are white → true.

Hence, both the conclusions follow.

49. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements: Some plants are trees.

All trees are bushes.

Conclusions: I. Some bushes are plants.

II. Al! bushes are plants.

III. No bush is a plant.

(A) Only conclusion I follows

(B) Only conclusion III follows

(C) Only conclusions I and III follow

(D) Only conclusions IT and ITI follow

Ans: **(A)**

The least possible Venn diagram is:
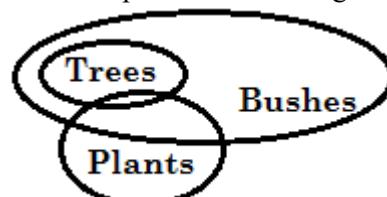
I. Some bushes are plants → True   (some plants are trees and all trees are bushes)

II. Al! bushes are plants → False (it is possible but not definite)

III. No bush is a plant → False (it is possible but not definite)

Hence only conclusion I follows.

50. Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, Q even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

Statements:

Some mangoes are fruits.

No fruit is vegetable.

Conclusions:

I. Some mangoes are vegetables.

II. Some fruits are mangoes.

III. No vegetable is a mango.

(A) Only conclusion II follows

(B) Only conclusions II and III follow
(C) Only conclusions I and III follow
(D) Only conclusion I follows

Ans: **(A)**

The least possible Venn diagram is:

I. Some mangoes are vegetables → False (it is possible but not definite)

II. Some fruits are mangoes → True (Some mangoes are fruits)

III. No vegetable is a mango → False (it is possible but not definite)

Hence only conclusion II follows.

> "Many of life's failures are people who did not realize how close they were to success when they gave up."

> "There are no secrets to success. It is the result of preparation, hard work, and learning from failure."

SEP 05
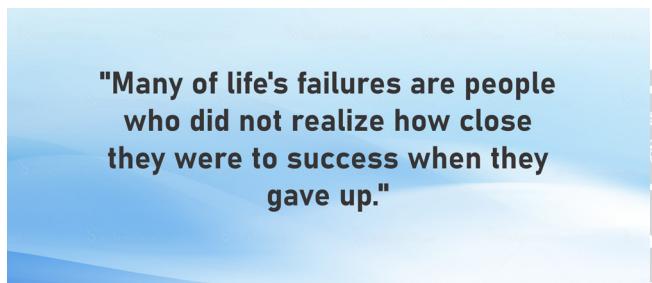
Importance: To commemorate the death anniversary of Mother Teresa

Motto: To sensitise and mobilizing people, NGOs, and stakeholders all around the world, who help others through volunteer and philanthropic activities.

Mother Teresa
(26 August 1910 - 5 September 1997)
- An Albanian-Indian Roman Catholic nun and missionary
- Full name: Anjezë Gonxhe Bojaxhiu
- Nationality: Indian, Ottoman, Yugoslavian
- Awards: Bharat Ratna, Nobel Peace Prize, Order of the Smile, Ramon Magsaysay Award, Presidential Medal of freedom, Golden Honour of the Nation, etc.

SEP 05
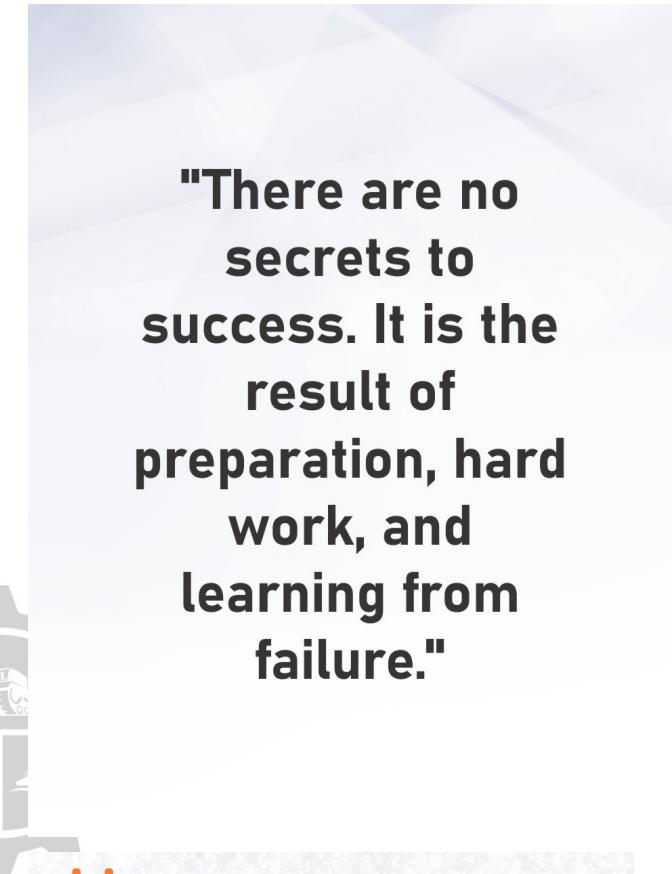
Importance: To mark the birth anniversary of Bharat Ratna recipient Dr Sarvepalli Radhakrishnan who was the first Vice President and second President of India post Independence.

Motto: To honour teachers for their contributions in shaping the lives of students. Inception: 1967

Sarvepalli Radhakrishnan
(5 September 1888 - 17 April 1975)
- An Indian philosopher, academic, and statesman
- Awards: Bharat Ratna, Templeton Prize, Friedenspreis des Deutschen Buchhandels, Order of Merit
- Books: The philosophy of Rabindranath Tagore, Indian Philosophy, The Hindu View of Life, An Idealist View of Life, Recovery of Faith, The Brahma Sutra, etc.

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English Vocab Practice Set

1. **Inherent (Adjective)** – निहित
   Definition: Existing in something as a permanent, essential, or characteristic attribute.
   Synonyms: Intrinsic, Innate, Immanent, Built-In, Inborn, Ingrained
   Antonyms: Adventitious, Extraneous, Extrinsic
   Usage: "Any form of mountaineering has its inherent dangers"

2. **Conflict (Noun)** - लड़ाई-झगड़ा
   Definition: A serious disagreement or argument, typically a protracted one.
   Synonyms: Dispute, Quarrel, Squabble, Disagreement
   Antonyms: Agreement
   Usage: This round of conflict between Puducherry Chief Minister V. Narayanasamy and Lt. Governor Kiran Bedi has been more serious than those in the past.

3. **Stand-off (Noun)** – गतिरोध
   Definition: A deadlock between two equally matched opponents in a dispute or conflict.
   Synonyms: Deadlock, Stalemate, Impasse, Standstill
   Usage: The trigger for the latest stand-off seems to have been Ms. Bedi's move to enforce the rule for two-wheeler riders to wear helmets.

4. **Enhance (Verb)** - बेहतर बनाना
   Definition: Intensify, increase, or further improve the quality, value, or extent of.
   Synonyms: Increase, Add to, Intensify, Magnify, Amplify
   Antonyms: Diminish, Mar
   Usage: He lists the blocking of welfare schemes such as the free rice scheme and enhanced scholarship for Scheduled Caste students, among other actions of the L-G, as the real issues.

5. **Prevail (Verb)** – प्रबल
   Definition: Prove more powerful or superior.
   Synonyms: Conquer, Triumph, Win
   Antonyms: Collapse, Fail, Flop
   Usage: At the same time, any difference of opinion between them can be referred to the President, and in the meantime the Administrator's action prevails on any urgent matter.

6. **Fragment (Verb)** – टुकड़ा होना
   Definition: Break or cause to break into fragments.
   Synonyms: Broken, Busted, Fractured, Shattered
   Antonyms: Unbroken, Fixed, Healed, Mended
   Usage: The snap poll called for April 28 by Spain's minority Socialist Party government could deepen the fissures in the fragmented polity.

7. **Prop (up) (Verb)** – समर्थन करना
   Definition: To hold up or serve as a foundation for
   Synonyms: Bear, Bolster, Brace, Buttressy
   Antonyms: Balk, Bar, Block, Constrain
   Usage: It was propped up last June by Catalan separatist parties, which were bound to turn into a liability for Mr. Sánchez.

8. **Integrity (Noun)** - अखंडता
   Definition: The quality of being honest and having strong moral principles.
   Synonyms: Honesty, Uprightness, Probity, Rectitude
   Antonyms: Dishonesty
   Usage: For the governing Socialist Party has, no less than the conservative People's Party, consistently regarded the Catalonian demand for separation as a violation of the integrity of the Spanish union.

9. **Secessionist (Noun)** - पृथकतावादी
   Definition: a person who thinks that a nation, state, etc., should separate from another and become independent
   Synonyms: Separationist, Separatist
   Usage: Meanwhile, a recent government proposal to appoint a rapporteur to negotiate with the secessionists has been condemned as a betrayal by the conservatives.

10. **Status quo (Noun)** – यथास्थिति
    Definition: The existing state of affairs, especially regarding social or political issues.
    Synonyms: Normalcy, Normality
    Antonyms: Irregularity, Uncommonness, Unusualness

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Usage: The entry of the extreme right Vox party to the Andalusian legislature has unsettled that status quo.

11. **Strapped (Adjective)** - तंगी
    Definition: Short of money.
    Synonyms: Shortfall, scarcity, deficit, dept
    Antonyms: Surplus, Profit.
    Usage: For a government strapped for finances and struggling to meet the revised fiscal deficit target of 3.4% of GDP, the RBI's largesse will be handy.

12. **Stubborn (Adjective)** - ज़िद्दी
    Definition: Having or showing dogged determination not to change one's attitude or position on something, especially in spite of good arguments or reasons
    to do so.
    Synonyms: Obstinate, Mulish, Headstrong, Wilful
    Antonyms: Compliant, Docile
    Usage: Custodial torture is global, old and stubborn.

13. **Numb (Adjective)** - सुन्न
    Definition: (of a part of the body) deprived of the power of physical sensation.
    Synonyms: Desensitized, Insensible, Insensate, Senseless
    Antonyms: Sensitive, Responsive
    Usage: Ancient Japanese methods of torture numb the human imagination.

14. **Pinnacle (Noun)** - शिखर
    Definition: The most successful point; the culmination.
    Synonyms: Peak, Height, Apex, Vertex, Zenith, Apogee
    Antonyms: Nadir, Trough
    Usage: In Greece, the pinnacle of culture, Socrates was in 399 BCE sentenced to death by hemlock, which was known to act slowly, incapacitating the person in stages, climbing from the lower extremities limb by limb to the heart.

15. **Ephemeral (Adjective)** - अल्पकालिक
    Definition: Lasting for a very short time.
    Synonyms: Transitory, Transient, Fleeting, Passing.

Antonyms: Long-lived, Permanent
Usage: Fashions are ephemeral: new ones regularly drive out the old.

16. **Revulsion (Noun)** – विद्रोह
    Definition: Sense of disgust and loathing.
    Synonyms: Disgust, Repulsion, Abhorrence, Repugnance, Nausea
    Antonyms: Delight, Liking
    Usage: If torture is real, human revulsion with torture is also real. And it has shape, definition. It has scope.

17. **Forbid (verb)** - निषिद्ध
    Definition: Refuse to allow (something).
    Synonyms: Prohibit, Ban, Outlaw,
    Antonyms: Permit
    Usage: More specifically, it "required states to take effective measures to prevent torture and forbade them from transporting people to any country where there is reason to believe they will be tortured (refoulement)".

18. **Subterfuge (Noun)** - छल
    Definition: Deceit used in order to achieve one's goal.
    Synonyms: Trickery, Intrigue, Deviousness, Evasion, Deceit,
    Antonyms: Honesty, Openness
    Usage: He had to use subterfuge and bluff on many occasions.

19. **Swerve (Verb)** – बहकना
    Definition: To depart abruptly from a straight line or course
    Synonyms: Break, Cut, Sheer
    Antonyms: Straighten
    Usage: The government did not hesitate to swerve from the path of rectitude to finance an income support programme for farmers in an election year.

20. **Rectitude (Noun)** – इंसाफ
    Definition: Morally correct behaviour or thinking; righteousness.
    Synonyms: Righteousness, Goodness, Virtue
    Antonyms: Infamy, Dishonesty **Usage:** Mattie is a model of rectitude

21. **Alacrity (Noun)** - तत्परता

Definition: Brisk and cheerful readiness.
Synonyms: Eagerness, Willingness, Readiness
Antonyms: Apathy
Usage: The consequent loss of long-run output for the economy, is the basis of the argument that public policy must respond with alacrity to growing unemployment.

22. **Impervious (Adjective) - प्रबल**
Definition: Not allowing fluid to pass through.
Synonyms: Impermeable, Impenetrable, Impregnable
Antonyms: Permeable
Usage: The economic, as opposed to the political, message is that the recent history of unemployment has been impervious to the political formation governing India.

23. **Incongruous (Adjective) - बेमेल**
Definition: Not in harmony or keeping with the surroundings or other aspects of something.
Synonyms: Inappropriate, Unsuitable, Unsuited.
Antonyms: Appropriate, Harmonious
Usage: The duffel coat looked incongruous with the black dress she wore underneath.

24. **Testify (Verb) – गवाही**
Definition: Serve as evidence or proof that something exists or is the case.
Synonyms: Confirm, Evidence, Prove, Corroborate, Substantiate
Antonyms: Belie **Usage:** The bleak lines testify to inner torment

25. **Conducive (Adjective) – अनुकूल**
Definition: Making a certain situation or outcome likely or possible.
Synonyms: Good for, Helpful to, Instrumental in
Antonyms: Unfavourable
Usage: In a democracy, it is left to elected representatives whether to pursue macroeconomic policies conducive to the generation of employment.

26. **Dampener (Noun) – हतोत्साहित**
Definition: A thing that has a restraining or subduing effect.
Synonyms: Complainer, Grouch, Moaner and Pessimist

Usage: The language on terrorism in the joint statement was something of a dampener for those who would have hoped there would be stronger condemnation of the terror attack in Pulwama.

27. **Embrace (Verb) – स्वागत और स्वीकार करना**
Definition: Accept (a belief, theory, or change) willingly and enthusiastically.
Synonyms: Welcome and Accept
Antonyms: Reject
Usage: At the leadership level, Mr. Modi extended more than a personal touch to the visit by going to the airport and embracing the Crown Prince on landing.

28. **Precarious (Adjective) - अनिश्चित**
Definition: Not securely held or in position; dangerously likely to fall or collapse.
Synonyms: Uncertain, Insecure, Unreliable, and Unsure
Antonyms: Safe, Secure
Usage: He made a precarious living as a painter.

29. **Claimant (Noun) - दावेदार**
Definition: A person making a claim, especially in a lawsuit or for a state benefit.
Synonyms: Applicant, Candidate
Usage: Obviously, a claim in the context of the above-mentioned Act is based on an assertion that a claimant has been in possession of a certain parcel of land located in the forest areas.

30. **Negate (Noun) - निष्फल नकारना**
Definition: Make ineffective; nullify.
Synonyms: Invalidate, Nullify
Antonyms: Confirm, Support, Validate
Usage: Alcohol negates the effects of the drug.

31. **Vulnerable (Adjective) - भेद्य**
Definition: Exposed to the possibility of being attacked or harmed, either physically or emotionally.
Synonyms: Endangered, Unsafe, and Unprotected
Antonyms: Invulnerable, Resilient
Usage: We were in a vulnerable position.

32. **Tenable (Adjective) – मुनासिब**
Definition: Able to be maintained or defended against attack or objection.

Synonyms: Defensible, Justifiable,
Antonyms: Indefensible, Untenable
Usage: Such a simplistic approach is no longer tenable.

33. **Pertain (Verb)** – संबद्ध होना
Definition: Be appropriate, related, or applicable to.
Synonyms: Concern, Relate to, be Related to
Usage: Developments pertaining to the economy.

34. **Condemn (Verb)** - निंदा
Definition: Express complete disapproval of; censure.
Synonyms: Censure, Criticize, Castigate, Attack
Antonyms: Praise, Commend
Usage: The global terror finance watchdog condemned.

35. **Weaponry (Noun)** - हिथयार
Definition: Weapons regarded collectively.
Synonyms: Ammunition, Arms, Defense
Usage: Terror entities do not travel out of the country, or have access to funding or weaponry.

36. **Affluent (Adjective)** - प्रभावशाली
Definition: (especially of a group or area) having a great deal of money; wealthy.
Synonyms: Wealthy, Rich, Prosperous, Opulent
Antonyms: Poor, Impoverished
Usage: The savings of low-income Indian households have traditionally remained unprotected by the government when compared to those of the more affluent economic groups.

37. **Promulgate (Verb)** - घोषणा करना
Definition: Promote or make widely known (an idea or cause).
Synonyms: Publicize, Spread, Communicate, Propagate
Antonyms: Conceal, Hush (up), Silence, Suppress
Usage: President Ram Nath Kovind has promulgated the Banning of Unregulated Deposit Schemes Ordinance.

38. **Miscreant (Noun)** - उपद्रवी
Definition: A person who has done something wrong or unlawful.

Synonyms: Criminal, Culprit, Wrongdoer, Malefactor,
Antonyms: Innocent, Saint
Usage: These unregulated schemes have also been misused by some miscreants.

39. **Swindle (Verb)** - छलना
Definition: Use deception to deprive (someone) of money or possessions.
Synonyms: Defraud, Cheat, Trick, Fleece
Antonyms: Frankness, Honesty, Openness
Usage: Some miscreants to swindle the money of depositors with the promise of unbelievably high returns in a short period of time.

40. **Cahoots (Noun)** - बराबर भागों
Definition: Colluding or conspiring together secretly.
Synonyms: Conniving, Collaborating
Antonyms: Divided, Separate, Uncoordinated
Usage: In fact, in the past there have been several cases of politicians acting in cahoots with the operators of fraudulent deposit schemes.

41. **Inalienable (Adjective)** - अयोग्य
Definition: Not subject to being taken away from or given away by the possessor.
Synonyms: Inviolable, Absolute, Sacrosanct, and Unchallengeable
Usage: The shareholders have the inalienable right to dismiss directors

42. **Vainglorious (Adjective)** - गुमानी
Definition: Having too high an opinion of oneself
Synonyms: Assured, Bigheaded, Complacent, Conceited
Antonyms: Egoless, Humble, Modest, Uncomplacent
Usage: The truth is, in today's interconnected world, it is vainglorious to expect countries to join a unilateral plan for isolation.

43. **Rectify (Verb)** – सुधारना या ठीक करना
Definition: Put right; correct.
Synonyms: Correct, Right, Amend, and Revise
Antonyms: Damage, Harm, Hurt, Impair
Usage: Let me get the store manager, and he'll rectify the invoice for your order. Editorial 27 – 02 – 2019

44. **Utterance (Noun)** – कथन
Definition: A spoken word, statement, or vocal sound.
Synonyms: Remark, Comment, Word, Expression
Usage: The latter is manifest in New Delhi's diplomatic utterances.

45. **Retaliate (Verb)** - प्रतिशोध लेना
Definition: To punish in kind the wrongdoer responsible for
Synonyms: Avenge, Redress, Requite
Antonyms: Absolve, Condone, Excuse
Usage: This strike was carried out in Pakistani territory, not in Pakistan-occupied Kashmir, the theatre for retaliatory action in the past.

46. **Obviate (Verb)** - मुक्त हो जाना
Definition: Remove (a need or difficulty).
Synonyms: Preclude, Prevent, Remove
Usage: It could continue to deny that the Indian strike caused any damage on the ground, and obviate the need for retaliatory strikes.

47. **Deterrent (Noun)** - निवारक
Definition: A thing that discourages or is intended to discourage someone from doing something.
Synonyms: Disincentive, Discouragement, Dissuasion
Antonyms: Incentive, Encouragement

Usage: In the long term, building strong counter-terror defences, partnering with its own citizens to gather intelligence, and creating deterrents will be key.

48. **Jeopardize (Verb)** - ख़तरे में डालना
Definition: Put (someone or something) into a situation in which there is a danger of loss, harm, or failure.
Synonyms: Threaten, Endanger, Imperil, Menace, Risk
Antonyms: Safeguard
Usage Mauritius has made it clear that it does not intend to jeopardise the future of the military base.

49. **Thrash (Verb)** – ताड़ना
Definition: Beat (a person or animal) repeatedly and violently with a stick or whip.
Synonyms: Hit, Beat, Flog, Whip, Horsewhip
Usage: When it lost this, London questioned the court's jurisdiction and Mauritius's version of how the deal had been thrashed out.

50. **Erupt (Verb)** - फूटना
Definition: Break out suddenly and dramatically.
Synonyms: Break out, Flare up, Blow up, Boil over
Antonyms: Die down
Usage: Fierce fighting erupted between the army and guerrillas

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General Knowledge Practice Set

1. Consider the following statements:
1. The founder of the Tughlaq dynasty was Muhammad bin Tughlu
2. Ghiyasuddin Tughlaq had a tense relationship with Sheikh Nizamuddin Auliya.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2

Ans: (B)

Exp: Ghiyath al-Din Tughluq was the one who founded the Tughlaq dynasty in India. The founders' real name was Ghazi Malik and he ruled from 1320 - 1325. He founded the city of Tughlaqabad outside Delhi. (1320 to 1414)

2. Consider the following statements:
1. The Gupta Empire stretched across northern, central and parts of southern India between CE 210 and 305 CE.
2. The Gupta period is known as the "Golden Age" in the history of India.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2

Ans: (B)

Exp: The Gupta Empire stretched across northern, central and parts of southern India between CE 320 and 550 CE. The period is noted for its achievements in the arts, architecture, sciences, religion, and philosophy. It began a period of overall prosperity and growth which came to be known as a "Golden Age" in India's history.

3. Consider the following statements:
1. Kanishka organized the fourth Buddhist Sangti in Kashmir, presided over by Vasumitra and Ashwaghosh.
2. In the second Buddhist music, Buddhism was divided into two - Hinayana and Mahayana.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2

Ans: (A)

Exp: During the reign of Kanishka, the fourth Buddhist council was held at Kundalvana in Kashmir to settle the disputes among different sects. After the discussions Buddhism was divided into two major sects named as Hinayana and Mahayana. Hinayana - It was an old form of Buddhism. Followers of this sect were against idol worship. Mahayana - Its followers considered Buddha as God. This sect was in favour of idol worship.

4. Consider the following statements:
1. During Mahendravarman I reign famous Panch Pandava Rath Temple was constructed which is Rock Cut Temple, a UNESCO World Heritage site.
2. In 640 AD, the Chinese traveller Hiuen Tsang visited Kanchipuram in during Narasimhavarman I reign.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2

Ans: (B)

Exp: The incredible Ratha cave temples of Mahabalipuram were constructed by the Pallava king Narasimhavarman I during the 7th and 8th centuries. Mamallapuram (Mahabalipuram) was named after Narasimhavarman I. In 640 AD, that the Chinese traveller Hiuen Tsang visited Kanchipuram. Narasimhavarman I was a devotee of Shiva.

5. Consider the following statements regarding to Permanent settlement system:
1. This arrangement was on 19% of British India. Applicable in Bengal, Bihar, Orissa, Varanasi in Uttar Pradesh and North Karnataka.
2. Under this, the zamindar retained 10 / 11th part of the realization of land revenue from his areas and deposited the remaining part (1 / 11th) with the company.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2

Ans: (A)

Exp: In the permanent settlement system, landlords were recognized as landlords. Under this, the zamindar retained 1/11 th part of the realization of

land revenue from his areas and deposited the remaining part (10 / 11th) with the company.

6. Consider the following statements regarding to Ryotwari System:
1. In this method, the farmer had to pay between 20% and 30% to the renting company.
2. In 1792 AD, Captain Reid introduced the Ryotwari System first in Baramhal district of Tamil Nadu.
Which of the statements given above is/are not correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2
Ans: **(D)**
Exp: In Ryotwari System, the farmer had to pay between 33% and 55% to the renting company. This system was reformed after 1836 AD by Winger and Goldsmith.

7. Consider the following statements:
1. The Rashtrakutas considered themselves descendants of Satyaki.
2. The Kailash Temple at Ellora was built by the Rashtrakuta King Krishna I.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2
Ans: **(C)**
Exp: Krishna I also defeated Vishnuvardhana of Vengi and the Ganga king of Mysore. The Kailash Temple at Ellora was built by the Rashtrakuta King Krishna I. The Rashtrakutas considered themselves descendants of Satyaki.

8. Consider the following statements:
1. The Harappan culture was distinguished by its system of town planning.
2. The Indus people were the earliest people to produce cotton.
Which of the statements given above is/are correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2
Ans: **(C)**
Exp: The Harappa villages, mostly situated near the flood plains, produced sufficient foodgrains. The Indus people were the earliest people to produce cotton. The Harappan culture was distinguished by its system of town planning.

9. Consider the following statements:
1. Rigveda is the oldest religious text in the world. It contains 1028 hymns and is classified into 10 mandalas.
2. Yajur Veda deals with charms, spells and magic and is a good source to study the Kingdom of Magadha.
Which of the statements given above is/are not correct?
(A) 1 only   **(B)** 2 only
(C) Both 1 and 2   **(D)** Neither 1 nor 2
Ans: **(B)**
Exp: Rig Veda was composed during the Early Vedic Age. The other three were written in the Later Vedic Age. Atharva Veda deals with charms, spells and magic and is a good source to study the Kingdom of Magadha.

10. The effects of global warming are.
1. The sea level may rise.
2. It will prevent the stirring up of the ocean
3. Fish population will migrate towards the Tropics.
4. Precipitation will be frequent.
Select the correct answer from the codes given below.
(A) 1 and 3   **(B)** Only 2
(C) 2 and 3   **(D)** only 4
Ans: **(A)**
Exp: Global warming is the long-term rise in the average temperature of the Earth's climate system. It is a major aspect of climate change and has been demonstrated by direct temperature measurements and by measurements of various effects of the warming. Global warming and climate change are often used interchangeably. Increased ocean temperatures are melting glaciers and ice caps all over the world. Melted ice increases the volume of water in our oce.
Warmer temperatures also result in the expansion of the water's mass, which causes sea levels to rise, threatening low-lying islands and coastal cities.

11. Consider the following statements.
1. Tides are of great help in navigation and fishing.
2. High tide enables big ships to enter or leave the harbor safely.
3. Tide prevents siltation in the harbours.
4. Kandla and Diamond Harbor are tidal ports.
Which of the statements given above are correct?
(A) 1 and 3   **(B)** Only 2

(C) 2 and 3 **(D)** All of the above

Ans: (D)

Exp: Tides are the cyclic rising and falling of Earth's ocean surface caused by the tidal forces of the Moon and the Sun acting on the Earth. Tides cause changes in the depth of the sea, and also produce oscillating currents known as tidal streams, making prediction of tides important for coastal navigation.

12. Consider the following statements.
1. The Grand Trunk Road (GT Road) travels in three South Asian countries-India Pakistan and Bangladesh.
2. The stretch of the GT Road between Kolkata and Delhi is known as NH 2.
Which of the statements given above is/are correct?
(A) only 1 **(B)** Only 2
(C) both 1 and 2 **(D)** none of these

Ans: (B)

Exp: The 'Grand Trunk Road' connects Kolkata and Amritsar. G.T road is a part of India's Golden Quadrilateral project (4–6 lane highway) Connecting Amritsar via Delhi, Agra, Kanpur, Allahabad, Varanasi, Dhanbad, Asansol with Kolkata.

13. Consider the following statements regarding latitudes and longitudes?
1. Longitudes are angular distance of a place from the equator.
2. Latitudes are angular distance of a place from the prime meridian.
Choose the incorrect statement(s)?
(A) only 1 **(B)** Only 2
(C) both 1 and 2 **(D)** none of these

Ans: (C)

Exp: Latitude of a place is measured as the angular distance of the place from the equator. All latitudes also called as parallels are concentric circles.
Equator is the largest latitude of earth dividing the earth in two equal halves. Longitude of a place is measured as the angular distance of the place from the prime meridian. Longitudes also known as meridians play a significant role in measuring the time zone of an area. 0-degree longitude is Greenwich in UK and 180 degree is the International Date Line.

14. Consider the following correct statements.
1. Narmada river is known as "Life Line of Madhya Pradesh and Gujarat" for its huge contribution to the state of Madhya pradesh and Gujarat in many ways.
2. Narmada is one of only three major rivers in peninsular India that run from east to west along with the Tapti River and the Mahi River.
(A) only 1 **(B)** Only 2
(C) both 1 and 2 **(D)** none of these

Ans: (C)

Exp: Narmada is the largest west flowing river of the peninsular India. Narmada flows westwards through a rift valley between the Vindhyan Range on the north and the Satpura Range on the south. It rises from Maikala range near Amarkantak in Madhya Pradesh, at an elevation of about 1057 m. The Narmada River, also called the Rewa and previously also known as Nerbudda, is a river in central India after the Godavari, and the Krishna. It is also known as "Life Line of Madhya Pradesh and Gujarat" for its huge contribution to the state of Madhya pradesh and Gujarat in many ways.

15. Consider the following correct statements.
1. The Green Revolution started in 1965 with the first introduction of High Yielding Variety (HYV) seeds in Indian agriculture.
2. The term green revolution was coined by an official at the U.S. State Department, Norman Borlaug in 1968.
(A) only 1 **(B)** Only 2
(C) both 1 and 2 **(D)** none of these

Ans: (A)

Exp: The Green Revolution in India refers to a period when Indian agriculture was converted into an industrial system due to the adoption of modern methods and technology It was mainly found by M.S. Swaminathan.
The term green revolution was coined by an official at the U.S. State Department, William Gaud in 1968.

16. Consider the following correct statements.
1. Deccan Plateau is the peninsular tableland lying to the south of the Tropic of Cancer. Its outer boundary is marked by the 300 m contour line, with Vindhya-Kaimur watersheds in the north.
2. The Deccan plateau is located between two mountain ranges, the Western Ghats and the Eastern Ghats,

(A) only 1   (B) Only 2
(C) both 1 and 2   (D) none of these

Ans: (C)

Exp: The Deccan plateau is located between two mountain ranges, the Western Ghats and the Eastern Ghats, Deccan Plateau is the peninsular tableland lying to the south of the Tropic of Cancer. Its outer boundary is marked by the 300 m contour line, with Vindhya-Kaimur watersheds in the north. and north-western part of the plateau is made up of lava flows or igneous rocks known as the Deccan Traps. The north-western part of the plateau is made up of lava flows or igneous rocks known as the Deccan Traps

17. Consider the following correct statements.
    1. The Irupu Falls are located in the Brahmagiri Range in the Kodagu district of Karnataka,
    2. Jog Fall located at southern state of Karnataka is India's highest waterfall. it is on the Sharavathi River
    (A) only 1   (B) only 2
    (C) both 1 and 2   (D) none of these

Ans: (C)

Exp: Jog Falls located near Jog Village. located in Siddapur, Uttara Kannada Jog Falls is also known as Gerusoppe falls, The Irupu Falls are located in the Brahmagiri Range in the Kodagu district of Karnataka, India, bordering the Wayanad district of Kerala.

18. Consider the following correct statements.
    1. Lipu Lekh is located in Sikkim, this pass is an important border post for trade with China, the pilgrims for Manasarovar travel through this pass.
    2. Shipki La (Pass)-It is in Himachal Pradesh, Satluj River flows through this pass.
    (A) only 1   (B) only 2
    (C) both 1 and 2   (D) none of these

Ans: (B)

Exp: Lipulekh pass in Pithoragarh district of Uttarakhand, Lipulekh pass connects the Kumaon region of Uttarakhand with the old trading town of Taklakot in Tibet. The pass is first Indian border post to be opened for trade with China in 1992.

19. Consider the following statements:
    1. Article 15 (3) confers a special provisions to Women and Children.
    2. The prohibition imposed by the Article 20 is applicable to criminal cases.

Which of the statements given above is/are correct?
(A) 1 only   (B) 2 only
(C) Both 1 and 2   (D) Neither 1 nor 2

Ans: (C)

Exp: Article 15(3) provides for special protective discrimination in favour of women and child relieving them from the moribund of formal equality.
Article 20 of Indian Constitution provides for protection in respect of conviction of offences. In other words, it lays down certain safeguards to the person accused of crimes as stated below:
1. Ex post facto law (Article 20(1))
2. Double Jeopardy (Article20(2))
3. Self-incrimination (Article 20(3)

20. Consider the following statements:
    1. The President of Indian Union has the similar Constitutional authority as the USA President.
    2. Under the Indian Constitution, the subjects of administration have been divided into three lists.
    Which of the statements given above is/are correct?
    (A) 1 only   (B) 2 only
    (C) Both 1 and 2   (D) Neither 1 nor 2

Ans: (B)

Exp: The Indian Constitution closely follows the constitutional system of the United Kingdom. This can be seen by the fact that the Indian Constitution has borrowed following features from the British Constitution. 1. The office of the president of India is based upon the British Queen who is a ceremonial head of the state.

21. Consider the following statements:
    1. The Chief Justice and other Judges of the High Court are appointed by the President.
    2. Sarkaria Commission was appointed by the Government to report on Center-State Relations.
    Which of the statements given above is/are correct?
    (A) 1 only   (B) 2 only
    (C) Both 1 and 2   (D) Neither 1 nor 2

Ans: (C)

Exp: The Chief Justice of a High Court is appointed by the President with the consultation of the Chief Justice of the Supreme Court and the Governor of the State. The other judges are appointed by the will of President, Governor and the Chief Justice of High Court.

Sarkaria Commission was set up in 1983 by the central government of India. The Sarkaria Commission's charter was to examine the central-state relationship on various portfolios and suggest changes within the framework of Constitution of India.

22. Consider the following statements:
1. The first session of the Parliament is called as Budget Session.
2. The usual expenditure of the Government of India is charged from contingency Fund.
Which of the statements given above is/are not correct?
(A) 1 only **(B)** 2 only
(C) Both 1 and 2 **(D)** Neither 1 nor 2
Ans: (D)
Exp: In India, the Parliament conducts three sessions each year: Budget session: February to May. Monsoon session: July to September. Winter session: November to December.
Consolidated Fund of India is the most important of all government accounts. All revenues received by the government by way of direct taxes and indirect taxes, money borrowed and receipts from loans given by the government flow into the Consolidated Fund of India.

23. Consider the following statements:
1. Question Hour is the first hour of a sitting session of India's Lok Sabha devoted to questions.
2. Zero Hour is the period immediately following the Question Hour when the Members voice their concerns on various matters of public importance.
Which of the statements given above is/are correct?
(A) 1 only **(B)** 2 only
(C) Both 1 and 2 **(D)** Neither 1 nor 2
Ans: (C)
Exp: Generally, the first hour of a sitting of Lok Sabha is devoted to Questions and that hour is called the Question Hour. It has a special significance in the proceedings of Parliament.
Zero hour denotes the time immediately following the Question Hour in both Houses of Parliament. This is about 12 noon which is why it is called Zero Hour. During this hour, members can raise matters of great importance without prior notice.

24. Consider the following statements:

1. The salaries and allowances of the Speaker of Legislative Assembly and Chairman of Legislative Council shall be determined by the State Legislature.
2. The emoluments, allowances and privileges of the Governor shall be determined by the State Legislature.
Which of the statements given above is/are correct?
(A) 1 only **(B)** 2 only
(C) Both 1 and 2 **(D)** Neither 1 nor 2
Ans: (A)
Exp: The salaries and allowances of the Speaker of Legislative Assembly and Chairman of Legislative Council shall be determined by the State Legislature.
The Governor shall be entitled to the use of his official residence without payment of rent and shall also be entitled to such emoluments, allowances and privileges as may be prescribed by Parliament.

25. Consider the following statements:
1. The District Judges and Magistrate of the Civil Courts shall be appointed by the Governor.
2. The Guwahati High Court has territorial jurisdiction over five number of States.
Which of the statements given above is/are not correct?
(A) 1 only **(B)** 2 only
(C) Both 1 and 2 **(D)** Neither 1 nor 2
Ans: (B)
Exp: Magistrates of district judges and civil courts are appointed by the governor on the advice of the Chief Justice of the state.
The Guwahati High Court has territorial authority over 4 states such as Assam, Arunachal Pradesh, Mizoram and Nagaland.

26. The portion of the actual produce fixed as state's share under the Zabti System of Mughals was _____?
(A) One-half **(B)** One-third
(C) One-fourth **(D)** One-fifth
Ans: (B)
Exp: The portion of the actual produce fixed as state's share under the Zabti System of Mughals was One-third.

27. Who among the following introduced the subsidiary alliance system in India?

(A) Lord Clive   (B) Lord Wellesley
(C) Lord Cunningham   (D) Lord Canning

Ans: (B)

Exp: The doctrine of subsidiary alliance was introduced by Lord Wellesley, British Governor-General of India from 1798 to 1805. The Nizam of Hyderabad was the first to enter into such an alliance in 1798

28. Who among the following succeeded Samudragupta as the next ruler of Gupta Dynasty?
(A) Chandragupta II   (B) Budhagupta
(C) Vishnugupta   (D) Kumaragupta II

Ans: (A)

Exp: Chandragupta ll (380-412 AD) succeededSamundragupta as the next ruler of Gupta dynasty.

29. Who among the following signed the Treaty of Bassein in 1802 with the British East India Company?
(A) Baji Rao II   (B) Baji Rao I
(C) Sultan Bahadur   (D) Shiva ji

Ans: (A)

Exp: He Treaty of Bassein (now called Vasai) was a pact signed on 31 December 1802 between the British East India Company and Baji Rao II, the Maratha Peshwa of Pune (Poona) in India after the Battle of Poona.

30. Which among the following events was a major set back to Khilafat Movement?
(A) Announcements of concession to Muslims by British Government
(B) Pact signed between Indian National Congress and Muslim League
(C) Revolution in Turkey
(D) Violence in Chauri Chaura

Ans: (C)

Exp: It was a protest against the sanctions placed on the caliph and the Ottoman Empire after the First World War by the Treaty of Sèvres. The movement collapsed by late 1922 when Turkey gained a more favourable diplomatic position and moved towards secularism. By 1924 Turkey simply abolished the role of caliph.

31. Who among the following edited and published the newspaper Indian Mirror in 1861?
(A) Amitava Ghosh
(B) Ravindranath Tagore

(C) Sumit Ganguly
(D) Manmohan Ghosh and Devendranath Tagore

Ans: (D)

Exp: In 1861, the newspaper, Indian Mirror, was edited and published by Manmohan Ghosh and Devendranath Tagore from Calcutta.

32. Which one of the following was the port city of the Indus Valley Civilisation?
(A) Harappa   (B) Kalibangan
(C) Lothal   (D) Mohenjodara

Ans: (C)

Exp: Lothal and Dhaulavira located in Gujarat are the port cities of the Indus Valley Civilization.

33. Who among the following preached the doctrine of "One religion, one caste and one God for mankind"?
(A) Jyotiba Phule   (B) Vivekananda
(C) Sri Narayan Guru   (D) B. R. Ambedkar

Ans: (C)

Exp: Sri Narayana Guru preached the doctrine of 'One caste, One religion, One God.' Its worth note that one of his athiest disciples, Sahadaran Ayyapan, changed into 'no religion, no caste and no God for mankind.

34. Which king established most of the temples of Khajurahas?
(A) Raja Yashovarman
(B) Raja Chandravarman
(C) Raja Bhagwan Chandra
(D) Pulakeshin I

Ans: (B)

Exp: The magnificent temples of the Khujarahas were constructed during the time of the Chandela kingdom. Raja Chandravarman, son of Bhagwan Chandra, established most of the temples of Khajurahas. Many temples of Khujarahas were built under the rule of Hindu king Yashovarman and Dhanga, of which Vishwanath ji's temple dedicated to Lakshmana and Shiva is very famous. At the same time, the temple of Kandariya Mahadev, built during the reign of Ganda Raja in 1017 to 1029 BC, is one of the famous temples of Khajurahas.

35. Which of following king started the organization of Kumbh fair at Allahabad?
(A) Harshavardhana   (B) Dhruvasena Ii
(C) Narshimhvarman   (D) Akabar

Ans: (A)

Exp: Harshavardhana king started the organization of Kumbh fair at Allahabad. The Allahabad Kumbh Mela is a mela held every 12 years at Allahabad, India. The exact date is determined according to Hindu astrology: the Mela is held when Jupiter is in Taurus and the sun and the moon are in Capricorn.

36. The Indian State having largest Buddhist population is _____.
(A) Uttar Pradesh (B) Haryana
(C) Gujarat (D) Maharashtra

Ans: (D)

Exp: According to the 2011 census, the largest concentration of Buddhism is in Maharashtra (6,530,000), where (77%) of the total Buddhists in India reside.

37. Which of the following are the two volcanic Islands in the Indian Territory?
(A) Kavaratti and New Moore
(B) Bitra and Kavaratti
(C) Pamban and Barren
(D) Nacondam and Barren

Ans: (D)

Exp: The two volcanic islands in the Indian territory are Narcondam and Barren. Narcondam is a small volcanic island located in the Andaman Sea.

38. Which among the following states is building the Bharat Bangladesh Moitree Udyan?
(A) Nagaland (B) Tripura
(C) Meghalaya (D) West Bengal

Ans: (B)

Exp: Tripura is set to inaugurate the Indo-Bangla Friendship Park or Bharat Bangla Maitree Udyan at Chottakhola in Belonia subdivision of South Tripura, 130km from Agartala, on December 16

39. The Gandhi Sagar Dam is built on which river in Madhya Pradesh?
(A) Narmada (B) Chambal
(C) Son (D) Tapti

Ans: (B)

Exp: The Gandhi Sagar Dam is one of the four major dams built on India's Chambal River. The dam is located in the Mandsaur, Neemuch districts of the state of Madhya Pradesh.

40. Tuirial Hydro Electric Project is located in which state?
(A) Manipur (B) Mizoram
(C) Sikkim (D) Arunachal Pradesh

Ans: (B)

Exp: Tuirial dam is an earthfill and gravity dam on the River Sonai near Kolasib in the state of Mizoram in India. The primary purpose of the dam is hydroelectric power production.

41. The difference between the diameter of the Earth at the poles and at equator is how many miles?
(A) 27 miles (B) 35 miles
(C) 40 miles (D) 55 miles

Ans: (A)

Exp: Because of this, the diameter of the Earth at the equator is about 43 kilometers (27 mi) larger than the pole-to-pole diameter. As a result, the latest measurements indicate that the Earth has an equatorial diameter of 12,756 km (7926 mi), and a polar diameter of 12713.6 km (7899.86 mi).

42. "Limnology" is a study of _____.
(A) Limestone
(B) Lignite of brown coal
(C) Lakes and ponds
(D) Laterites

Ans: (C)

Exp: "Fish in the Zone" introduces readers to limnology, a branch of science that studies freshwater bodies, such as lakes, rivers, and wetlands.

43. The wettest place in the world is Cherrapunji (Assam). The Hottest place is….?
(A) Azizia (Libya)
(B) Ramagundam (India)
(C) Stwart Island (New Zealand)
(D) Kandy (Sri Lanka)

Ans: (A)

Exp: The title of "world's hottest place" is bestowed El Azizia, Libya.

44. The term 'transhumance' means
(A) The practice of moving to a new clearing in the forest every few years
(B) The seasonal movement of people along with their cattle in the mountains
(C) Moving over to another neighboring country
(D) Moving from place to place in search of work

Ans: (B)

Exp: Seasonal movement of livestock (such as sheep) between mountain and lowland pastures either under the care of herders or in company with the owners.

45. World's largest solar power plant is located in _____.
(A) Kalahari Desert, Africa
(B) Sahara Desert, Libya
(C) Thar Desert India
(D) Mojava Desert USA
Ans: (D)
Exp: Solar Energy Generating Systems is currently the largest operational solar power plant in the world. It is located in the Mojave Desert of California, USı

46. Who is the Chairman of Council of Scientific and Industrial Research?
(A) Prime minister
(B) President
(C) Home Minister
(D) Minister of Science and Technology
Ans: (A)
Exp: The Council of Scientific and Industrial Research abbreviated as CSIR was established by the Government of India in September 1942 as an autonomous body. Prime Minister of India is the chairman of the Council of Scientific and Industrial Research.

47. Under which Article of the Constitution does the Central Government gives Plan assistance to the State Government?
(A) Art 277   (B) Art 285
(C) Art 275   (D) Art 270
Ans: (C)
Exp: The 22nd Amendment amended article 275 in regard to sums and grants payable to the autonomous State on and from its formation under article 244A.

48. Emergency Provisions were borrowed from the Constitution of which country?
(A) Germany   (B) Britain
(C) USA   (D) South Africa
Ans: (A)
Exp: The Emergency provisions of the Indian constitution has been borrowed from the German constitution. The Emergency provisions are contained in Part XVIII of the Constitution, from Articles 352 to 360.

49. Who said in the Constituent Assembly that The Directive Principles of State Policy are like a 'Cheque on a bank payable at the convenience of the bank'?
(A) Mahatma Gandhi
(B) K. T. Shah
(C) B R Ambedkar
(D) Jayaprakash Narayan
Ans: (B)
Exp: K.T. Shah was an Indian economist, advocate and socialist best known for his active role as a member of the Constituent Assembly of India that was responsible for framing of the Indian Constitution.

50. Who appoints the Chief Minister who has majority support in the State Legislative Assembly?
(A) Governor
(B) Chief justice of High Court
(C) President
(D) Prime minister
Ans: (A)
Exp: The governor appoints and swears in the chief minister and his Council of Ministers are collectively responsible to the assembly.

The real test is not whether you avoid this failure, because you won't. It's whether you let it harden or shame you into inaction, or whether you learn from it; whether you choose to persevere.

Current Affairs Practice Set

1. Gabon, a Central African nation, rich in oil but plagued by poverty and political instability, has witnessed another coup attempt by a group of mutinous soldiers.
Consider the following statements regarding Gabon -
(1) Gabon, a country surrounded by the Atlantic Ocean in the west.
(2) Gabon is widely described as "Africa's last Eden".
(3) Odzala-Kokoua National Park is one of the country's best wildlife-watching spots.
Which of the above is/are correct?
(A) Only (1) and (3) (B) Only (1) and (2)
(C) Only (2) and (3) (D) None of the above

Ans: **(B)**
Exp: Gabon, a country surrounded by the Atlantic Ocean in the west, is a former French colony, and retains strong ties to France and French language and culture. The capital is Libreville.
It shares land borders with Cameroon, Equatorial Guinea, and the Republic of Congo. Gabon has a population of 2.3 million (2021) and forests covering 88% of its territory.
Gabon is widely described as 'Africa's last Eden', the Loango National Park is one of the country's best wildlife-watching spots.

2. Recently, a report by the Wildlife Conservation Society (WCS)-India titled 'Illegal Trade of Red Sand Boa in India 2016-2021' has exposed the trade of red sand boa.
Consider the following statements regarding Red Sand Boa -
(1) The Red Sand Boa is commonly called the Indian Sand Boa.
(2) It is a venomous species.
(3) It has an average length of 75 cm.
Which of the above is/are correct?
(A) Only (1) and (3) (B) Only (1) and (2)
(C) Only (2) and (3) (D) None of the above

Ans: **(A)**
Exp: The Red Sand Boa (Eryx johnii), commonly called the Indian Sand Boa, is a non-venomous species.
It is a primarily reddish-brown and thick-set snake that grows to an average length of 75 cm.

Unlike most snakes, the tail is almost as thick as the body and gives the reptile the appearance of being "double-headed".
The Red Sand Boa is the largest of the sand boa in the world. Nocturnal and spends the majority of its time under the ground.

3. Superfoods are nutrient-rich foods, primarily plant-based but including some fish and dairy, packed with vitamins, minerals, and antioxidants beneficial for health.
Consider the following statements regarding Millets -
(1) Millets are a good source of enzyms.
(2) Millets are drought-resistant, require less water and can grow in poor soil conditions.
(3) Millets are naturally gluten-free.
Which of the above is/are correct?
(A) Only (1) and (3) (B) Only (1) and (2)
(C) Only (2) and (3) (D) None of the above

Ans: **(A)**
Exp: Millets are drought-resistant, require less water and can grow in poor soil conditions. This makes them a suitable food crop for areas with unpredictable weather patterns and water scarcity.
Millets are a good source of fiber, protein, vitamins, and minerals.
Millets are naturally gluten-free, making them suitable for people with celiac disease or gluten intolerance.
Millets can be grown in a variety of soils and climates, making them a versatile crop option for farmers.

4. Recently, the Supreme Court has declared that not all marriages necessitate a public declaration or solemnization.
Consider the following statements -
(1) Article 13 of the Constitution specifies that any law that contravenes Part III of the Constitution is invalid.
(2) Article 14 of the Constitution guarantees equal treatment and protection under the law.
(3) The state is prohibited from discriminating against any person based on their religion, ethnicity, gender, or place of birth, according to Article 15(1).

Which of the above is/are correct?
(A) Only (1) and (3) **(B)** Only (1) and (2)
(C) Only (2) and (3) **(D)** All of the above
Ans: **(D)**
Exp: The Indian Constitution guarantees fundamental rights to all citizens, and any legislation that conflicts with these rights is deemed unconstitutional.

Article 13 of the Constitution specifies that any law that contravenes Part III of the Constitution is invalid.

In R C Cooper vs Union of India (1970), the SC observed that the theoretical approach that the component and construct of state intervention ascertain the severity of the safeguard that an underprivileged group may purport is incompatible with the constitutional provision.

It aims to provide the ordinary citizen with the broadest possible safeguards of his fundamental rights.

Article 14 of the Constitution guarantees equal treatment and protection under the law to every individual within the territory of India.

The state is prohibited from discriminating against any person based on their religion, ethnicity, gender, or place of birth, according to Article 15(1) of the Constitution

5. Recently, the Deendayal Port Authority and Dubai-based DP World partnered for the Mega Container Terminal Project at Tuna Tekra, Gujarat.
Consider the following statements -
(1) Deendayal Port is also known as Mundra Port.
(2) Deendayal Port was constructed in 1931 by Maharao Khengarji.
(3) In 2016, Deendayal Port created history by handling 100 MMT cargo in a year.
Which of the above is/are correct?
(A) Only (1) and (3) **(B)** Only (1) and (2)
(C) Only (2) and (3) **(D)** None of the above
Ans: **(C)**
Exp: Deendayal Port, also known as Kandla port, is one of the twelve Major Ports in India and is located on the West Coast of India, in the Gulf of Kutch in the State of Gujarat.

Deendayal Port primarily services northern India, including the landlocked Jammu and Kashmir, Uttar Pradesh, Madhya Pradesh and Rajasthan.

Deendayal Port's journey began in 1931 with the construction of RCC Jetty by Maharao Khengarji. After the independence of India in 1947, Deendayal Port emerged to be India's No. 1 Port in the year 2007-08 and has retained the top position for the 14th consecutive year since then.

In 2016, Deendayal Port created history by handling 100 MMT cargo in a year – the first Major Port to achieve this milestone.

It is the largest port in India by volume of cargo handled.

6. Recent advances in genome sequencing unveil the impact of somatic genetic variants on human health, from cancer development to immune disorders, driving innovation in disease detection and treatment strategies.
In context to the same tell us, DNA Barcoding can be a tool to -
(1) assess the age of a plant or animal.
(2) distinguish among species that look alike.
(3) identify undesirable animal or plant materials in processed foods.
Which of the above is/are correct?
(A) Only (1) and (3) **(B)** Only (1) and (2)
(C) Only (2) and (3) **(D)** None of the above
Ans: **(C)**
Exp: DNA barcoding is a methodology for rapidly and accurately identifying species by sequencing a short segment of standardized gene regions and comparing individual sequences to a reference database.
Identification of new species
Safety assessment of food
Identification and assessment of cryptic species
Detection of alien/invasive species
Identification of endangered and threatened species
Linking egg and larval stages to adult species

7. The Punjab government told the Punjab and Haryana high court that it would withdraw its notification on dissolution of panchayats.
Consider the following statements -
(1) The minimum age prescribed for any person to be a member of Panchayat is 25 years.
(2) A Panchayat reconstituted after premature dissolution continues only for the remainder period.
Which of the above is/are correct?

(A) Only (1)   **(B)** Only (1) and (2)
(C) Only (2)   **(D)** None of the above
Ans: **(C)**
Exp: Panchayat Raj System -
Part IX of the Constitution deals with Panchayat Raj System in India.
Panchayati Raj was constitutionalized through the 73rd Constitutional Amendment Act of 1992.
All the seats in panchayat are filled by direct election.
The chairperson of each panchayat is elected according to the law passed by the state.
Every panchayat can continue for a term of five years from the date of its first meeting.
It can be dissolved earlier in accordance with state law.
A panchayat reconstituted after premature dissolution continues only for the remainder of the period. But if the remainder of the period is less than 6 months it is not necessary to hold elections.
All the persons above 21 years of age and qualified to be a member of the state legislature are qualified as a member of panchayat.

8. In 2023, the celebration of World Sanskrit Day takes place on 31st August.
    Consider the following statements regarding Sanskrit -
    (1) Sanskrit is among the 22 official languages included in the Eight Schedule of the Indian Constitution.
    (2) In 2014, Sanskrit was declared the second official language of Uttarakhand.
    (3) In Mattur village of Karnataka everyone speaks in the Sanskrit language.
    Which of the above is/are correct?
    (A) Only (1) and (3)   **(B)** Only (1) and (2)
    (C) Only (2) and (3)   **(D)** None of the above
Ans: **(A)**
Exp: Sanskrit is among the 22 official languages included in the Eight Schedule of the Indian Constitution.
It is also included among 6 Classical languages besides Tamil, Telugu, Kannada, Malayalam, and Odia.
In 2010, Sanskrit was declared the second official language of Uttarakhand.
In Mattur village of Karnataka everyone speaks in the Sanskrit language.

9. Mahendragiri, the last Project 17A Frigate, will be launched on 1st September 2023.
    Consider the following statements regarding Project 17A -
    (1) Taragiri, the second ship, was launched in May 2022.
    (2) The first stealth ship launched under Project 17A was the Nilgiri.
    (3) Project 17 Alpha frigates (P-17A) were launched by the Indian Navy in 2019.
    Which of the above is/are correct?
    (A) Only (1) and (3)   **(B)** Only (1) and (2)
    (C) Only (2) and (3)   **(D)** None of the above
Ans: **(C)**
Exp: Project 17 Alpha frigates (P-17A) were launched by the Indian Navy in 2019 to construct a series of stealth guided-missile frigates.
These are currently being constructed by two companies - Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE).
These guided-missile frigates have been constructed with a specific stealth design, which has radar-absorbent coatings and is low-observable which can make its approach undetectable for the enemies.
The new technology also reduces the infrared signals of the ship.
The first stealth ship launched under Project 17A was the Nilgiri, which was launched in 2019.
Udaygiri, the second ship, was launched in May 2022, and will likely be commissioned in 2024.

10. Recently, the International Solar Alliance (ISA) held its 5th regional meeting in Kigali, Rwanda.
    Consider the following statements regarding India-Africa Summit -
    (1) It was held in 2015 was the third such Summit.
    (2) It was actually initiated by Jawaharlal Nehru in 1951.
    Which of the above is/are correct?
    (A) Only (1)   **(B)** Only (1) and (2)
    (C) Only (2)   **(D)** None of the above
Ans: **(A)**
Exp: The first India-Africa Summit was held in 2008 in New Delhi.
It is an official platform for the African-Indian relations and held once in every three years.

The second and third summit was held in 2011 and 2015 in Addis Ababa and New Delhi respectively.

It was not initiated by Jawaharlal Nehru in 1951.

11. Recently, United Nations Biodiversity has urged people globally to use the word 'funga' whenever they say 'flora and fauna', in order to highlight the importance of fungi.

Consider the following statements regarding -

(1) Fungi or fungus are a diverse group of prokaryotic microorganisms.

(2) Fungi also produce antibiotics like penicillin.

(3) Some fungi, like mushrooms and truffles, are edible and prized in cuisine.

Which of the above is/are correct?

(A) Only (1) and (3)   **(B)** Only (1) and (2)

(C) Only (2) and (3)   **(D)** None of the above

Ans: **(C)**

Exp: Fungi or fungus are a diverse group of eukaryotic microorganisms or macroscopic organisms that belong to their own biological kingdom, distinct from plants, animals, and bacteria.

Eukaryotic: Like plants, animals, and protists, fungi have complex, membrane-bound cell organelles and a true nucleus.

Fungi can convert nutrients to make them accessible to plants, acting as decomposers by breaking down organic matter, thereby enhancing nutrient cycling and soil fertility.

It has numerous beneficial applications. Yeasts, for instance, are used in baking and brewing.

Fungi also produce antibiotics like penicillin.

Some fungi, like mushrooms and truffles, are edible and prized in cuisine. Others, like molds, are used in cheese production.

12. Recently, CSIR's Central Mechanical Engineering Research Institute (CSIR-CMERI) has indigenously designed and developed compact 100% Pure Electric Tractor named CSIR PRIMA ET11.

Which of the following has/have occurred in India after its liberalization of economic policies in 1991?

(1) Share of agriculture in GDP increased enormously

(2) Share of India's exports in world trade increased

(3) India's foreign exchange reserves increased enormously

Which of the above is/are correct?

(A) Only (1) and (3)   **(B)** Only (1) and (2)

(C) Only (2) and (3)   **(D)** None of the above

Ans: **(C)**

Exp: Opening up of the economy to foreign competition– the economic reforms introduced extensive liberalisation of foreign trade and foreign investment. The import substitution and import restriction policies were abandoned and instead import liberalisation and export promotion policies were introduced. This increased India's share in exports.

Liberalisation of trade and investment

However, there was a gradual decline in the agriculture sector's contribution to the Indian economy. Presently agriculture contributes about 17% to the GDP, down from 29% in 1991. Foreign investment was almost negligible before 1991. On the investment front, the economic reforms mark the era of capital mobility in the country. Foreign capital in the form of FDI (Foreign Direct Investment) and FPI (Foreign Portfolio Investment) entered into the country.

13. Recently, the first ship of the Diving Support Craft (DSC) project, 'DSC A 20' (Yard 325), was launched in Kolkata (Hooghly River).

Consider the following statements -

(1) Ganga-Bhagirathi-Hooghly river system from Allahabad to Haldia was declared as National Waterway No 1.

(2) The NW-1 passes through Uttar Pradesh, Bihar, Jharkhand and Madhya Pradesh.

Which of the above is/are correct?

(A) Only (1)   **(B)** Only (1) and (2)

(C) Only (2)   **(D)** None of the above

Ans: **(A)**

Exp: National Waterway 1

Ganga-Bhagirathi-Hooghly river system from Allahabad to Haldia was declared as National Waterway No 1.

The NW-1 passes through Uttar Pradesh, Bihar, Jharkhand and West Bengal and serves major cities and their industrial hinterlands.

14. Recently, the Prime Minister paid tributes to Sree Narayana Guru on his Jayanti.

Consider the following statements regarding to the same -

(1) Sree Narayana Guru (1856-1928) was a revered Indian spiritual leader born in Chempazhanthy, Kerala.

(2) He established a philanthropic society as the founder of the Sree Narayana Dharma Paripalana Yogam.

Which of the above is/are correct?

(A) Only (1)   **(B)** Both (1) and (2)
(C) Only (2)   **(D)** None of the above

Ans: **(B)**

Exp: Sree Narayana Guru (1856-1928) was a revered Indian spiritual leader and social reformer born in Chempazhanthy, Kerala.

He advocated for equality, education, and social upliftment regardless of caste. Guru's philosophy emphasized, "One Caste, One Religion, One God for All" (Oru Jathi, Oru Matham, Oru Daivam, Manushyanu) promoting harmony among different communities.

He became one of the greatest proponents and re-evaluators of Advaita Vedanta, the principle of non-duality put forward by Adi Shankara.

He established a philanthropic society as the founder of the Sree Narayana Dharma Paripalana Yogam (SNDP).

15. On August 30, 2023, the night sky was illuminated by a rare phenomenon: a super blue moon. However, despite its name, this full moon was neither blue in colour nor super in size.

Consider the following statements -

(1) The term "supermoon" was coined in 1979 by astrologer Richard Nolle.

(2) A blue moon is the second full moon in a month.

(3) A blue moon occurs when the moon aligns closely with Earth during its orbit.

Which of the above is/are correct?

(A) Only (1) and (3)   **(B)** Only (1) and (2)
(C) Only (2) and (3)   **(D)** None of the above

Ans: **(B)**

Exp: A super blue moon combines a supermoon and a blue moon.

A supermoon occurs when the moon aligns closely with Earth during its orbit, making it appear larger and brighter.

This alignment, called perigee, contrasts with apogee, when the moon is farthest in its elliptical orbit around earth. While the difference is subtle, near the horizon, an optical illusion can make it seem larger.

The term "supermoon" was coined in 1979 by astrologer Richard Nolle.

A blue moon is the second full moon in a month. Despite its name, a blue moon isn't blue; it's the traditional name for the second full moon in a month.

16. The Indian government has introduced the Constitution (Jammu and Kashmir) Scheduled Tribes Order (Amendment) Bill, 2023.

In context to the same tell us, which of the following is matched correctly?

Tribe - State

(1) Limboo (Limbu) - Sikkim

(2) Karbi - Himachal Pradesh

(3) Dongaria Kondh - Odisha

Which of the above is/are correct?

(A) Only (1) and (3)   **(B)** Only (1) and (2)
(C) Only (2) and (3)   **(D)** None of the above

Ans: **(A)**

Exp: Dongaria – Odisha is easy as dongaria kondh tribe was in news due to the POSCO project

Karbis are well versed in Assamese which is used as lingua-franca to communicate with other indigenous Assamese communities.

Tamang and the Limbu communities of Sikkim have been placed in the ST category.

17. The 2023 southwest monsoon season in India started late, experiencing a significant rainfall deficiency of 52.6%.

Consider the following statements regarding monsoon -

(1) The southwest monsoon season - Rainfall received from the southwest monsoons is seasonal in character, which occurs between June and September.

(2) The retreating monsoon season - The months of October and November are known for retreating monsoons.

Which of the above is/are correct?

(A) Only (1)   **(B)** Only (1) and (2)
(C) Only (2)   **(D)** None of the above

Ans: **(B)**

Exp: The climate of India is described as the 'monsoon' type. In Asia, this type of climate is found mainly in the south and the southeast.

Out of a total of 4 seasonal divisions of India, monsoon occupy 2 divisions, namely.

The southwest monsoon season - Rainfall received from the southwest monsoons is

seasonal in character, which occurs between June and September.

The retreating monsoon season - The months of October and November are known for retreating monsoons.

18. Recently, the Ministry of Agriculture & Farmers Welfare has informed Lok Sabha that a comprehensive range of Central Sector and Centrally Sponsored Schemes have been implemented for Farmers Welfare.

Consider the following statements -

(1) The nation-wide 'Soil Health Card Scheme' aims at expanding the cultivable area under irrigation.

(2) Enabling the banks to assess the quantum of loans to be granted to farmers on the basis of soil quality.

(3) Checking the overuse of fertilizers in farmlands.

Which of the above is/are correct?

(A) Only (1)   **(B)** Only (1) and (2)

(C) Only (3)   **(D)** None of the above

Ans: **(C)**

Exp: Soil Health Card (SHC) -

It is a scheme promoted by and being implemented through the Department of Agriculture & Co-operation under the Ministry of Agriculture and Farmers' Welfare, Government of India.

A SHC provides the farmer:

Soil nutrient status of his/her holding and advice him/her on the dosage of fertilizers and

Also, the needed soil amendments, that she/he should apply to maintain soil health in the long run.

SHC is a printed report that will contain the status of his soil concerning 12 parameters, namely:

N, P, K (Macro-nutrients); S (Secondary-nutrient);

Cu, Mn, Bo, Zn, Fe (Micro-nutrients); and pH, EC, OC (Physical parameters).

Based on Soil nutrient status, the SHC will indicate fertilizer recommendations and soil amendment required for the farm.

19. Recently, the UIDAI has rolled out an in-house Artificial Intelligence/Machine Learning technology-based Finger Minutiae Record.

Consider the following statements regarding Unique Identification Authority of India -

(1) The UIDAI is a statutory authority established on 12th July 2016.

(2) The UIDAI was initially set up by the Government of India in January 2002.

(3) The UIDAI is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.

Which of the above is/are correct?

(A) Only (1) and (3)   **(B)** Only (1) and (2)

(C) Only (2) and (3)   **(D)** None of the above

Ans: **(A)**

Exp: Unique Identification Authority of India -

Statutory Authority: The UIDAI is a statutory authority established on 12th July 2016 by the Government of India under the jurisdiction of the Ministry of Electronics and Information Technology, following the provisions of the Aadhaar Act 2016.

The UIDAI was initially set up by the Government of India in January 2009, as an attached office under the aegis of the Planning Commission.

Mandate: The UIDAI is mandated to assign a 12-digit unique identification (UID) number (Aadhaar) to all the residents of India.

As of 31st October 2021, UIDAI had issued 131.68 crore Aadhaar numbers.

20. The Justice G. Rohini-headed Commission for the sub-categorisation of Other Backward Classes (OBC) caste groups submitted its long-awaited report to the Ministry of Social Justice and Empowerment after nearly six years of work.

Consider the following organizations/bodies in India -

(1) The National Commission for Backward Classes

(2) The National Human Rights Commission

(3) The National Law Commission

(4) The National Consumer Disputes Redressal Commission

How many of the above constitutional bodies?

(A) Only one   **(B)** Only two

(C) Only three   **(D)** All four

Ans: **(A)**

Exp: Although the National Commission for Backward Classes (NCBC) was originally constituted as the Statutory body by establishing

it under the provisions of the National Commission for Backward Classes Act, 1993.

Recently the NCBC was accorded constitutional status by the 102nd Constitutional Amendment Act (CAA) which inserted Article 338B, forming a National Commission for Backward Classes. Hence NCBC is a constitutional body.

The National Human Rights Commission (NHRC) of India is a statutory body constituted in 1993 under the Protection of Human Rights Act, 1993.

The National Law Commission is neither a constitutional body nor a statutory body, it was constituted by a notification of the Government of India, Ministry of Law & Justice, Department of Legal Affairs.

The National Consumer Disputes Redressal Commission of India is a statutory body established under the Consumer Protection Act, 1986.

21. Recently, the Union Ministry of Environment, Forest and Climate Change provided valuable insights into the various initiatives to boost forest cover in India during a written reply in the Lok Sabha.

A particular State in India has the following characteristics -

(1) Forest Cover in the state constitutes 30.71% of the geographical area of the state.

(2) According to the Indian state of forest report 2021, the recorded forest area of this state is 94,689 square kilometers.

(3) It has the 12.4% of the forest area of the country.

Which one among the following States has all the above characteristics?

(A) Arunachal Pradesh **(B)** Madhya Pradesh
(C) Assam   **(D)** Uttarakhand

Ans: **(B)**

Exp: Madhya Pradesh is the second largest state of the country with an area of 3,08,252 sq km which is 9.38% of the geographical area of the country.

According to the Indian state of forest report 2021, the recorded forest area of this state is 94,689 square kilometers.

Forest Cover in Madhya Pradesh constitutes 30.71% of the geographical area of the state and 12.4% of the forest area of the country making it the state with the largest forest area.

The geographical and biotic diversity of the state can be seen through its 18 forest types ranging from thorn forest to subtropical Hill forest. The state can be partitioned into 9 natural regions and 11 Agro-climatic zones.

22. Odisha Chief Minister has inaugurated Birsa Munda Hockey Stadium, one of the largest hockey stadiums in Rourkela.

Consider the following statements in respect of the 32nd Summer Olympics -

(1) The official motto for this Olympics is 'A New World'.

(2) Sport Climbing, Surfing, Skateboarding, Karate and Baseball are included in this Olympics.

Which of the above is/are correct?

(A) Only (1)   **(B)** (2) and (1)
(C) Only (2)   **(D)** None of the above

Ans: **(C)**

Exp: The 2020 summer Olympics was an international sports event that will be held from 23 July to 8 August 2021, in the city of Tokyo, Japan. As the name suggests, this summer Olympics were originally intended to be held from 24 July to 9 August 2020, but due to the ongoing Covid-19 Pandemic, Tokyo 2020 Olympics was postponed.

The motto of summer Olympic 2020 is Faster, Higher, Stronger– Together. Six new sports are added at the Tokyo summer Olympics 2020- baseball, softball, karate, skateboarding, sport climbing, and surfing. The name of the 2020 Summer Olympics Mascot is Miraitowa. It is derived from the Japanese words Mirai (future) and Towa (eternity). The mascot embodies both the old and the new, echoing the concept of "innovation from harmony". The Mascot was created by Ryo Taniguchi. Tokyo has hosted the Summer Olympic Games in 1964 thereby becoming the first Asian city to host Summer Olympics twice.

23. In the Union Budget for 2023-24, the government has projected a decline in fiscal deficit to 5.9% of gross domestic product.

Which of the following is/are included in the capital budget of the Government of India?

(1) Expenditure on acquisition of assets like roads, buildings, machinery, etc.

(2) Loans received from foreign governments

(3) Loans and advances granted to the States and Union Territories

Which of the above is/are correct?

(A) Only (1) and (2) **(B)** Only (2) and (3)
(C) Only (3) and (1) **(D)** All are correct

Ans: **(D)**

Exp: Capital Budget consists of capital receipts and payments. It also incorporates transactions in the Public Account.

Capital receipts are loans raised by the government from the public (which are called market loans), borrowings by the government from the Reserve Bank and other parties through sale of treasury bills, loans received from foreign bodies and governments, and recoveries of loans granted by the Central government to state and Union Territory governments and other parties.

Capital payments consist of capital expenditure on acquisition of assets like land, buildings, machinery, and equipment, as also investments in shares, loans and advances granted by the Central government to state and Union Territory governments, government companies, corporations and other parties.

24. The level of ethanol blending in petrol in India has reached 9.99%.

Consider the following statements regarding Ethanol Blending -

(1) Ethanol is one of the principal biofuels.

(2) It is naturally produced by the fermentation of sugars by yeasts.

(3) Ethanol Blending Programme is aimed at reducing the country's dependence on crude oil imports.

Which of the above is/are correct?

(A) Only (1) and (2) **(B)** Only (2) and (3)
(C) Only (3) and (1) **(D)** All are correct

Ans: **(D)**

Exp: Ethanol: It is one of the principal biofuels, which is naturally produced by the fermentation of sugars by yeasts or via petrochemical processes such as ethylene hydration.

Ethanol Blending Programme (EBP): It is aimed at reducing the country's dependence on crude oil imports, cutting carbon emissions and boosting farmers' incomes.

Blending Target: The Government of India has advanced the target for 20% ethanol blending in petrol (also called E20) to 2025 from 2030.

25. Recently, the Ministry of Women and Child Development has informed the Lok Sabha that the Protection of Children from Sexual Offenses (POCSO) Act, 2012, is one of the crucial legislations enacted by the Government.

Consider the following statements regarding POCSO Act -

(1) POCSO Act came into effect on 14th November 2012.

(2) The Act defines a child as any person below the age of 21 years.

(3) The Government of India has also notified the POCSO Rules, 2020.

Which of the above is/are correct?

(A) Only (1) and (3) **(B)** Only (1) and (2)
(C) Only (2) and (3) **(D)** None of the above

Ans: **(A)**

Exp: POCSO Act came into effect on 14th November 2012 which was enacted in consequence to India's ratification of the UN Convention on the Rights of the Child in 1992.

The aim of this special law is to address offences of sexual exploitation and sexual abuse of children, which were either not specifically defined or in adequately penalised.

The Act defines a child as any person below the age of 18 years. The Act provides punishment as per the gravity of offence.

The Act was further reviewed and amended in 2019 to Introduce more stringent punishment including the death penalty for Committing sexual crimes on children, with a view to deter the perpetrators & prevent such crimes against children.

The Government of India has also notified the POCSO Rules, 2020.

26. Surjya Narayan Patro, who has passed away recently, was the former Speaker of which state Assembly?

(A) Jharkhand **(B)** Kerala
(C) Odisha **(D)** Tripura

Ans: **(C)**

Exp: Surjya Narayan Patro, former Speaker of the Odisha Assembly, passed away.

Patro was a seven-time MLA and had never been defeated since 1990 on a BJD ticket.

Patro was known as Anna in Ganjam district.

He was first elected to the Assembly in 1990 from Gajapati district.

Patro took over as the Odisha Assembly Speaker on June 1, 2019, until his resignation on June 4, 2022.

27. Who country was the runner the runner up in the inaugural Men's Hockey 5s Asia Cup 2023?
(A) India   (B) Pakistan
(C) Malaysia   (D) Fiji
Ans: **(B)**
Exp: India won the inaugural Men's Hockey 5s Asia Cup 2023 in Salalah, Oman, on 2 September 2023.
The match went into a penalty shootout after the full-time whistle with the score at 4-4.
Maninder Singh and Gurjot Singh scored for India in the shootout.
India had already qualified for the 2024 FIH Hockey 5s World Cup with its victory over Malaysia in the semifinal.

28. Who was the scientist voiced the countdown of Chandrayaan-3, passed away?
(A) V R lalitambika   (B) Moumita Dutta
(C) Anuradha TK   (D) N Valaramathi
Ans: **(D)**
Exp: ISRO scientist N Valarmathi, known for her iconic countdown announcements, passed away on 3 September 2023.
Chandrayaan-3 was her final countdown announcement.
India's Chandrayaan-3 successfully landed on the moon's south pole, making India the fourth country to achieve this feat.
The mission consisted of three components: the propulsion module, the lander module, and the rover module.

29. Name the railway zone which has won the PMI South Asia Award for "Micro Project of the Year"?
(A) Northeast Frontier Railway
(B) North Central Railway
(C) North Eastern Railway
(D) Western Railway
Ans: **(A)**
Exp: Northeast Frontier Railway won the PMI South Asia Award for 'Micro Project of the Year' for its Intrusion Detection System that saves elephants.

IDS helps detect elephants approaching railway tracks, alerting the local pilot, station master, and manager to prevent accidents.
This is the first-ever victory for a zonal railway since the inception of the award in 2009.

30. Which country has recently conducted a simulated "tactical nuclear attack" drill in September 2023?
(A) North Korea   (B) Japan
(C) South Korea   (D) USA
Ans: **(A)**
Exp: North Korea conducted a simulated "tactical nuclear attack" drill on Saturday that included two long-range cruise missiles.
The drill was carried out to "warn enemies" that the country would be prepared in case of nuclear war.
The joint annual summertime exercises between South Korea and the U.S., known as Ulchi Freedom Shield, came to a close on 2 September 2023 after an 11-day run.

31. Which company has got RBI approval to initiate NBFC operations without accepting public deposits?
(A) Fincare Small Finance Bank
(B) Bajaj Auto Consumer Finance
(C) Mahindra Financial Services
(D) HDB Financial Services
Ans: **(B)**
Exp: Bajaj Auto's subsidiary, Bajaj Auto Consumer Finance, has received regulatory approval from the Reserve Bank of India to commence its non-banking financial institution operations.
This significant development allows the company to expand its financial services without accepting public deposits.
Bajaj Auto had previously announced the establishment of Bajaj Auto Consumer Finance, a wholly-owned subsidiary, in 2021.
The subsidiary's primary mission is to provide financing exclusively for products manufactured by Bajaj Auto.
In the first quarter of FY24, Bajaj Auto reported a robust profit after tax (PAT) of Rs 1,665 crore, representing a remarkable 42 percent increase compared to the corresponding quarter in the previous year.

32. In September 2023, President Droupadi Murmu has inaugurated a 12-foot statue of whom in Gujarat?
(A) Kasturba Gandhi   (B) Vithalbhai Patel
(C) Mahatma Gandhi   (D) Bhikaiji Rustom

Ans: (C)

Exp: President Droupadi Murmu will inaugurate a 12-foot statue of Mahatma Gandhi and a 'Gandhi Vatika' near Rajghat in September 2023.

This initiative, organized by the Gandhi Smriti and Darshan Samiti, carries immense significance as it coincides with India's celebration of 75 years of independence and its tenure as the G20 presidency.

The statue of Mahatma Gandhi, towering at 12 feet, will be unveiled at the entrance of the 45-acre Gandhi Darshan complex.

To symbolize India's G20 presidency, flags of member nations have been installed at Gandhi Darshan.

33. International Day of Charity has recently observed on which day of September 2023?
(A) 2 September   (B) 3 September
(C) 4 September   (D) 5 September
(E) 6 September

Ans: (D)

Exp: The International Day of Charity is celebrated on September 5 to commemorate the day of passing away of great missionary Mother Teresa.

A Hungarian civil society took initiative to observe International Day of Charity in 2011 which was supported by the Hungarian Parliament and Government.

The aim of the initiative was to increase solidarity, social responsibility and public support for charity by organizing special events. In response to this initiative and a proposal put forward by Hungary, the United Nations General Assembly on 17 December 2012 adopted a resolution to designate 5 September as the International Day of Charity.

34. Corning Inc will establish India's first Gorilla Glass manufacturing facility in which state?
(A) Andhra Pradesh   (B) Telangana
(C) Tamil Nadu   (D) West Bengal

Ans: (B)

Exp: In a significant development for India's electronics manufacturing sector, Corning Inc. is gearing up to establish its cutting-edge Gorilla Glass manufacturing facility in Telangana.

The state has already experienced substantial investments from industry leaders such as Foxconn earlier this year.

Headquartered in New York, Corning Inc. is a Fortune 500 materials science company with a rich legacy spanning over 172 years.

35. Who has taken charge of the position of Principal Director General at Akashvani?
(A) Shashi Kant Lomesh
(B) Dr Kuldeep Jain
(C) Dr Vasudha Gupta
(D) Dr Bharat Bhushan

Ans: (C)

Exp: Dr Vasudha Gupta, a seasoned Senior Indian Information Service officer, has taken charge as the Principal Director General of Akashvani and News Services Division.

This appointment comes after her commendable tenure as Director General at Akashvani, where she played a pivotal role in revitalizing the iconic broadcasting institution.

She has over 33 years of dedicated service in the Ministry of Information and Broadcasting, including her tenure as Director General of the Press Information Bureau (PIB).

36. In September 2023, Amit S Telang has been appointed as India's next High Commissioner to which country?
(A) Guyana   (B) Suriname
(C) Ghana   (D) Uruguay

Ans: (A)

Exp: Amit S Telang, an Indian Foreign Service (IFS) officer of batch 2005 has been appointed as India's next High Commissioner to Guyana

The diplomat was currently serving as the Consul General, Consulate General of India in Frankfurt.

Difference Between Ambassadors And High Commissioner -

Ambassador is the representative of one country in another country while high commissioner is the head of state in another country. Ambassador is the head of embassy while high commissioner is the head of high commission.

37. Recently, the Jal Jeevan Mission has achieved a milestone of providing tap water connections to

13 cr rural households in how many years of launching?

(A) 03 years   (B) 04 years

(C) 07 years   (D) 08 years

Ans: **(B)**

Exp: The Jal Jeevan Mission achieved another milestone of providing tap water connections to 13 cr rural households.

It has increased the rural tap connection coverage from only 3.23 cr households at the start of the Mission in August 2019 to 13 cr in 4 years.

6 States namely Goa, Telangana, Haryana, Gujarat, Punjab and Himachal Pradesh) and 3 UTs have reported 100% coverage.

The Jal Jeevan Mission (JJM), a flagship program of the Government of India, was launched on August 15, 2019, by Hon'ble Prime Minister Narendra Modi.

The program is a crucial step towards achieving the United Nations' Sustainable Development Goal 6, which aims to ensure access to water and sanitation for all.

38. Which entity has signed MoUs with Union Bank of India and Bank of Baroda to accelerate growth of renewable energy?

(A) Ministry of New and Renewable Energy

(B) Solar Energy Corporation of India

(C) Power Finance Corporation Limited

(D) Indian Renewable Energy Development Agency

Ans: **(D)**

Exp: IREDA has signed MoUs with Union Bank of India and Bank of Baroda.

To accelerate the growth of renewable energy in India, Indian Renewable Energy Development Agency Ltd. has signed Memorandums of Understanding with Union Bank of India and Bank of Baroda.

These agreements will empower IREDA to collaborate with UBI and BoB, in co-lending and loan syndication for a wide range of renewable energy projects, including both established and emerging RE technologies.

39. Saatvik Solar has appointed whom as its National Brand Ambassador?

(A) Rohit Sharma   (B) Virat kohli

(C) MS Dhoni   (D) Ravindra Jadeja

Ans: **(D)**

Exp: Saatvik Solar - India's leading renewable energy company has recently announced the onboarding of Ravindra Jadeja as the company's brand ambassador.

This partnership aims to increase brand awareness among a diverse target audience while powering the country's transformative green economy.

40. Which AIIMS has decided to buy drones to supply essential drugs, vaccines, and anti-snake venom to far-flung?

(A) Delhi   (B) Patna

(C) Bhopal   (D) Raipur

Ans: **(B)**

Exp: The AIIMS in Patna has decided to buy drones to supply essential drugs, vaccines, and anti-snake venom to far-flung and inaccessible areas and to reach people during natural disasters.

It is said that the procurement of the drones and the logistics involved in operating the service were likely to be completed by the end of the year. The service is expected to be operational in early 2024.

41. Art Mumbai will take place in which month at the Mahalaxmi Racecourse Members' Enclosure?

(A) October 2023   (B) November 2023

(C) December 2023   (D) January 2024

Ans: **(B)**

Exp: India's financial capital gears up to unveil its first art fair with Art Mumbai.

Art Mumbai will take place from November 16 to 19 at the Mahalaxmi Racecourse Members' Enclosure.

Art Mumbai will blend the old world charms of its iconic location with original and innovative art in its many forms.

42. What is the theme for National Teacher's Day 2023?

(A) Teachers at the heart of education recovery

(B) The Transformation of Education Begins with Teachers

(C) Teachers at the heart of education recovery

(D) Teachers: Leading in crisis, reimagining the future

Ans: **(A)**

Exp: National Teachers' Day in India is celebrated on September 5th every year.

It is a day to honour and celebrate the contributions of teachers to society.

The day is also observed as a tribute to the memory of Dr. Sarvepalli Radhakrishnan, the second President of India from 1962 to 1967.

The theme for National Teacher's Day 2023 is 'Teachers at the heart of education recovery'.

43. Union Minister Dharmendra Pradhan has tied up with whom to empower "teachers and entrepreneurs"?
(A) Meta (B) Google
(C) Microsoft (D) Amazon

Ans: (A)

Exp: The 3-year partnership between the Ministry of Education, Ministry of Skill Development and Entrepreneurship and META was signed in New Delhi in the presence of Dharmendra Pradhan, Union Minister for Education and Skill Development and Entrepreneurship.

It aims to empower a generation of students, teachers and entrepreneurs. Under this, 3 agreements were signed between META and NIESBUD, AICTE and CBSE.

44. What is the name given to India's first AI-powered anti-drone system?
(A) Prakhar (B) Apache
(C) Chetak (D) Indrajal

Ans: (D)

Exp: A Hyderabad-based robotics firm (Graene Robotics) has unveiled a state-of-the-art AI-powered anti-drone system named Indrajaal.

This system can not only protect important installations like nuclear installations, oil fields, but can also protect entire cities from any type of drone.

Indrajal is designed to defend against all types of drones in an area of 4,000 square kilometers.

45. Who has been appointed as Nasscom Chairperson recently?
(A) Valayil Mathews
(B) Partap Krishan
(C) Rajesh Nambiar
(D) Vineet Tyagi

Ans: (C)

Exp: Indian IT and tech trade body Nasscom has appointed Rajesh Nambiar as its new Chairperson.

Nambiar is succeeding Anant Maheshwari, former President, Microsoft India as the new Chairperson of the trade body.

Rajesh Nambiar is a Chairman and Managing Director of Cognizant India.

The National Association of Software and Services Companies (NASSCOM) is the apex body for the Indian technology industry.

It is a non-profit organization that was founded in 1988.

NASSCOM's membership comprises over 3000 companies, including both Indian and multinational organizations that have a presence in India.

46. Which company has hosted conference on 'Green Hydrogen Pilots in India'?
(A) NTPC (B) Power Grid
(C) NHPC (D) GAIL

Ans: (A)

Exp: A day-long conference on "Green Hydrogen Pilots in India" was held in New Delhi in 2023 showcasing various pilots implemented by public and private sector companies.

The conference highlighted the progress and innovation in green hydrogen technology.

The conference was hosted by NTPC Ltd, showcasing its commitment to green hydrogen initiatives.

47. India's first solar city has been inaugurated in which state recently?
(A) Madhya Pradesh (B) Rajasthan
(C) Uttar Pradesh (D) Haryana

Ans: (A)

Exp: The country's first solar city Sanchi will be inaugurated by state CM Shivraj Singh Chouhan.

Annually about 13 thousand 747 tonnes of carbon dioxide emissions will be reduced in Sanchi Solar City, which is equivalent to more than 2 lakh adult trees.

Along with this, there will be a saving of more than 7 crore rupees annually in the energy-related expenditure of the government and the citizens.

48. The Government of India has approved how much budget for Viability Gap funding Scheme?
(A) Rs 2580 crores (B) Rs 2460 crores
(C) Rs 3180 crores (D) Rs 3760 crores

Ans: **(D)**

Exp: The Government approved the Scheme for Viability Gap Funding

The scheme envisages the development of four thousand Mega Watt hours of BESS projects by 2030-31, with the financial support of up to 40 percent of the capital cost as budgetary support.

It has an initial outlay of about 9,400 crore rupees including budgetary support of 3,760 crore rupees.

49. A statue of whom has recently been installed at Bharat Mandapam, the venue of the G20 summit in Delhi?

(A) Lord Rama (B) Nataraja

(C) Annapurna (D) Dattatreya

Ans: **(B)**

Exp: The world's tallest Nataraja statue has been installed at Bharat Mandapam, the venue of the G20 summit in Delhi.

The 28-foot-tall statue weighing 20 tonnes was made in a record time of seven months by sculptor Radhakrishnan Sthapathy and his team at Swamimalai in Thanjavur District of Tamil Nadu.

The statue was built in Ashtadhatu (8 metals) using the traditional casting method.

50. According to the University of Michigan, by which year India could lose groundwater by 3 times?

(A) 2070 (B) 2090

(C) 2060 (D) 2080

Ans: **(D)**

Exp: The rate of groundwater depletion could triple by 2080, if Indian farmers continued to draw groundwater at the current rate, which could threaten the country's food and water security.

The warming climate has compelled farmers in India to adapt by intensifying the withdrawal of groundwater used for irrigation.

The study was led by the University of Michigan.

"Success is not final; failure is not fatal: It is the courage to continue that counts."

"There are two types of people who will tell you that you cannot make a difference in this world: those who are afraid to try and those who are afraid you will succeed."

SEP 08

international
literacy
day
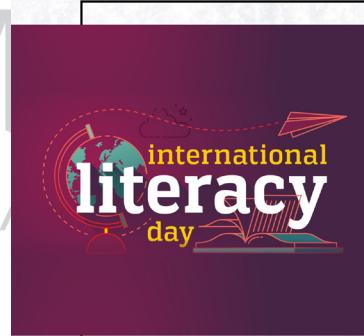
Importance: To remind the international community of the importance of literacy for individuals, communities and societies, and the need for intensified efforts towards more literate societies.

Proclamation: 26 October 1966

1st Celebrated: 1967

Organisation Involved: UNESCO

2023 Theme: Promoting literacy for a world in transition: Building the foundation for sustainable and peaceful societies

Highlight: Role of educators and changing pedagogies

Airforce Group-X Model Paper

PHYSICS

1. A floating body always displaces liquid equal to its own:
(A) Mass
(B) Volume
(C) Weight
(D) None of these

2. The operating principle of a hydraulic press is:
(A) Pascal's principle
(B) Archimedes' principle
(C) Boyle's law
(D) Newton's law of gravitation

3. The transverse nature of light is shown by
(A) Interference of light
(B) Refraction of light
(C) Polarization of light
(D) Dispersion of light

4. A ship of mass 3×10^7 kg initially at rest is pulled by a force of 5×10^4 N through a distance of 3 m. Assume that the resistance due to water is negligible, the speed of the ship
(A) 1.5ms^{-1}
(B) 60 ms^{-1}
(C) 0.1 ms^{-1}
(D) 5 ms^{-1}

5. Consider the flow of water along a horizontal pipe. The pressure of water at a particular point M is 5000 N/m² and velocity of water is 2m/sec. At another point N, the velocity is √3m/sec. The pressure of water at point N is
(A) 5000 N/m²
(B) 6000 N/m²
(C) 3000 N/m²
(D) 8000 N/m²

6. Semiconductor devices are
(A) Temperature dependent
(B) Voltage dependent
(C) Current dependent
(D) None of the above

7. The mass m is placed on a body of mass M. There is no friction. The force F is applied on M and it moves with acceleration a. Then, the net force on the top body is

(A) F
(B) ma
(C) F-ma
(D) none of these
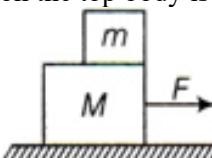
8. A fuse wire is made of
(A) An alloy of tin and copper
(B) An alloy of tin and lead
(C) An alloy of tin and aluminum
(D) An alloy of nickel chromium

9. Decibel is the unit of:
(A) Speed of light
(B) Intensity of sound
(C) Intensity of heat
(D) None of these

10. A positively charged body has
(A) Excess of electron
(B) Deficiency of electron
(C) Non change in number of electron
(D) None of these

11. Velocity of light is maximum in
(A) Diamond
(B) Water
(C) Glass
(D) Vacuum

12. A car moves from X to Y with a uniform speed Vu and returns from Y to X with a uniform speed Vd The average speed for this round trip is ?
(A) $\frac{2V \, dVu}{vd+vu}$
(B) $\sqrt{VuV_d}$
(C) $\frac{V_dV_u}{V_d+V_u}$
(D) $\frac{V_u+V_d}{2}$

13. According to Coulomb's law, the electrostatic force between two charges is
(A) Directly proportional to the product of the charges
(B) Inversely proportional to the square of the distance between the charges
(C) Directly proportional to the cube of the distance between charges
(D) Both A and B

14. In electric supply lines in India, which parameter kept constant?
(A) Voltage
(B) Current
(C) Frequency
(D) Power

15. An electric generator is based on

(A) Faraday's law of electromagnetic induction
(B) Motion of charged particles in electromagnetic field
(C) Newton's laws of motion
(D) Fission of uranium by slow neutrons

16. The binding energy of a particle (mass = 50 kg) and Earth system is
[$G = 6.67 \times 10^{-11}$ N –m^2 kg^{-2}; $Me = 6 \times 10^{24}$ kg; Re = 6400 km]
(A) 3.86×10^{12} j
(B) 4×10^{6} j
(C) 3.13×10^{9} j
(D) 1.56×10^{9} j

17. The frequency of audio analog signals lies in the range
(A) 20 kHz to 20 MHz
(B) 12 Hz to 20 MHz
(C) 20 Hz to 20 MHz
(D) 20 Hz to 20 kHz

18. Which of the following statements is false wit reference to Wheatstone bridge?
(A) It is used for finding value of unknown inductance, capacitance by making certain changes to the circuit
(B) The essential components are two known resistances, power supply, variable resistance, a galvanometer and the unknown resistor.
(C) It can be used along with other systems to measure physical parameters like strain, light and temperature
(D) Full scale deflection of galvanometer indicates null balancing of Wheatstone bridge.

19. What are dimensions of Young's modulus of elasticity?
(A) $[ML^{-1}T^{-2}]$
(B) $[MLT^{-2}]$
(C) $[MLT^{-1}]$
(D) none of these

20. A horizontal wire of length 1 meter carries a current of 40 A in a magnetic field of strength 1 Tesla. The angle between current direction and magnetic field direction is 45°. The magnitude of force experienced by the wire is
(A) 60.73 N
(B) 28.28 N
(C) 40.45 N
(D) 32.92 N

MATH

21. Suman agrees to work at the rate of Rs.1 on April 1, Rs. 2 on April 2, Rs. 4 on April 3 and so on. How much money will she get on April 20?
(A) Rs.2^{18}
(B) Rs. 2^{21}
(C) Rs.2^{19}
(D) Rs.2^{20}

22. If $\pi \sin \theta = 1$, $\pi \cos \theta = 1$, then the value of $\{\sqrt{3} \tan \left(\frac{2}{3}\theta\right)+1\}$ is
(A) 0
(B) 1
(C) 2
(D) 3

23. If $\sin x + \sin^2 x = 1$, then the value of $\{\cos^8 x + 2\cos^6 x + \cos^4 x\}$ is
(A) 0
(B) -1
(C) 1
(D) 2

24. The greatest coefficient in the expansion of $(x +1/x)$ is.
(A) $\frac{1.3.5.....(2n-1).2^n}{n!}$
(B) $2!/n!$
(C) $\frac{n!}{\left[\left(\frac{n}{2}\right)!\right]^2}$
(D) None of these

25. $\frac{\sin x + \sin 3x + \sin 5x + \sin 7x}{\cos x + \cos 3x + \cos 5x + \cos 7x}$ is equal to:
(A) $\tan 16x$
(B) $\tan 8x$
(C) $\tan 4x$
(D) $\tan 2x$

26. If $(a + b)$ is perpendicular to b and $a(a +2b) = 0$ then
(A) $2a = b$
(B) $a = \sqrt{2} b$
(C) $a = 2b$
(D) $a = b$

27. If x_1, x_2, x_3, x_4 are roots of the equation $x^4 - x^3 \sin 2\beta + x^2 \cos 2\beta - x\cos\beta - \sin\beta = 0$
Then $\tan^{-1} x_1 + \tan^{-1} x_2 + \tan^{-1} x_3 + \tan^{-1} x_4 =$?
(A) β
(B) $\pi/2 - \beta$
(C) $\pi - \beta$
(D) $- \beta$

28. If $\log_8 m + \log_8 1/6 = 2/3$, then m is equal to
(A) 24
(B) 18
(C) 12
(D) 4

29. The value $\sin 600° \cos 330° + \cos 120° \sin 150°$ of is
(A) -1
(B) 1
(C) $1/\sqrt{2}$
(D) $\sqrt{3}/\sqrt{2}$

30. Consider the following statements
I. $\lim_{x \to 0} \frac{1}{x}$ exists
II. $\lim_{x \to 0} e^{\frac{1}{x}}$ does not exist
Which of the above statement (s) is/are correct?
(A) Only I
(B) Only II
(C) Both I & II
(D) Neither I nor II

31. compute $z = \frac{5+i}{3-i} + \frac{2}{1-3i}$

(A) $\frac{7}{5}i + \frac{5}{8}$ (B) $\frac{5}{8}i + \frac{7}{5}$

(C) $\frac{7}{5}i - \frac{5}{8}$ (D) $\frac{-7}{5}i + \frac{8}{5}$

32. If $x^m + y^m = 1$ such that $\frac{dy}{dx} = -\frac{x}{y}$, then what should be the value of m?

(A) 0 (B) 1

(C) 2 (D) -1

33. The argument of $\frac{1+i\sqrt{3}}{\sqrt{3}+1}$ is

(A) π/6 (B) π/4

(C) π/3 (D) None of these

34. If x cosθ + y sinθ = 2 is perpendicular to the line x - y = 3, then what is one of the value of θ ?

(A) π/6 (B) π/4

(C) π/2 (D) π/3

35. If $f(x) = 2^x$ then what is f''' (x) is equal to?

(A) $2^x (\log_e 2)^2$ (B) $x\,(x-1)^{2x-2}$

(C) $2^{x+1}(\log 2)$ (D) $2^x (\log_{10} 2)^2$

36. If A and B are any two sets, then what is the value of A∩(A∪B)?

(A) Complement of A (B) Complement of B

(C) B (D) A

37. If $\cos^{-1}\left(\frac{1}{\sqrt{5}}\right) = \theta$, then What is the value of $\text{coses}^{-1}(\sqrt{5})$?

(A) $\frac{\pi}{2} + \theta$ (B) $\frac{\pi}{2} - \theta$

(C) $\frac{\pi}{2} - \theta$ (D) $-\theta$

38. If α and β are the zeros of the polynomial f(x) = x^2 -5x +k such that α – β = 1, find the value of k.

(A) 6 (B) 3

(C) 2 (D) 0

39. Evaluate $\int \frac{2\cos^2 x - \cos 2x}{\sin^2 x}\, dx$.

(A) tanx + c (B) sin2x -cotx +c

(C) -cotx + c (D) none of these

40. Find the 8th term in the following sequence whose nth term is $a_n = n^2 / 2^n$

(A) 8/256 (B) 16/256

(C) 32/256 (D) 64/256

41. Find out the relation between x and y
I. $2x^2 - 13x + 20 = 0$ II. $2y^2 - 7y + 6 = 0$

(A) x > y (B) x < y

(C) x ≥ y (D) x ≤ y

42. Given the sets A = {10, 20, 30} and B = {p, q, r}.These two sets can be represented as:

(A) A ⊂ B (B) A ↔ B

(C) A = B (D) A ≠ B

43. A coin is tossed three times. What is the probability of getting head and tail alternately?

(A) 1/8 (B) 1/4

(C) 1/2 (D) ¾

44. The area of a triangle is 5 and two of its vertices are A(2, 1), B(3, -2). Then the third vertex, in Ist quadrant which lies on the line y= x + 3 is

(A) (7/2,13/2) (B) (5/2,5/2)

(C) (3/2,3/2) (D) (0, 0)

45. Find $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ b+c & c+a & a+b \end{vmatrix}$

(A) 0 (B) 1

(C) a + b + c (D) abcabc

46. If position vector of four points A, B, C and D are $\hat{i} + \hat{j} + \hat{k}, 2\hat{i} + 3\hat{j}, 3\hat{i} + 5\hat{j} - 2\hat{k}$ and $\hat{k} - \hat{j}$ respectively, then AB and CD are related as;

(A) perpendicular (B) parallel

(C) independent (D) none of these

47. What is $\int_{-a}^{a}(x^3 + \sin x)dx$ equal to ?

(A) a (B) 2a

(C) 0 (D) 1

48. What is modulus of $1/(1+5i) - 1/(1-5i)$ = ?

(A) 7/15 (B) 2/9

(C) 3/17 (D) 5/13

49. Given |A| = 22, |B| = 18, |C| = 6, |A∪B∪C| = 34, |A∩B∩C'| = 3, |A∩C∩B'| = 4, |B∩C∩A'| = 2, then |A∩B∩C| = ?

(A) 0 (B) 1

(C) 2 (D) 3

50. The standard deviation of 4, 8, 12, 16, 20

(A) 5.6 (B) 6.4

(C) 2.5 (D) 3.7

ENGLISH

51. Select the word with the correct spelling.
(A) Loopholes   (B) Lupholes
(C) Lopholes   (D) Luppholes

52. In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
If it would **(1)**/ rain, they will **(2)**/not come. **(3)**/ No Error **(4)**
(A) 1   (B) 2
(C) 3   (D) 4

53. Choose the correct Reported form of the sentence from the option given below I said, "My grandfather snored throughout the night."
(A) I said my grandfather had snored throughout the night.
(B) I said that my grandfather snored throughout the night.
(C) I said that my grandfather had snored throughout the night.
(D) I said that my grandfather had been snoring throughout the night.

54. Change the voice of the sentences given below by selecting the correct alternative. Mariam was writing a note to her boss.
(A) A note was written to her boss by Mariam.
(B) A note was wrote by Mariam to her boss.
(C) A note was being written by Mariam to her boss.
(D) A note was written by Mariam to her boss.

Direction (55-57): Read the passage carefully and select the best answer to each question out of the four alternatives.

The Sattriya dance form was introduced in the 15th century A.D by the great Vaishnava saint and reformer of Assam, Mahapurusha Sankaradeva as a powerful medium for propagation of the Vaishnava faith. The dance form evolved and expanded as a distinctive style of dance later on. This neo-Vaishnava treasure of Assamese dance and drama has been, for centuries, nurtured and preserved with great commitment by the Sattras i.e. Vaishnava maths or monasteries.

Because of its religious character and association with the Sattras,this dance style has been aptly named Sattriya.

Sankaradeva introduced this dance form by incorporating different elements from various treatises, local folk dances with his own rare outlook. There were two dance forms prevalent in Assam before the neo-Vaishnava movement such as Ojapali and Devadasi with many classical elements. Two varieties of Ojapali dances are still prevalent in Assam i.e. Sukananni or Maroi Goa Ojah and Vyah Goa Ojah. Sukananni Oja paali is of Sakti cult and Vyah Goa Oja paali is of Vaishnava cult. Sankaradevaincluded Vyah Goa Ojah into his daily rituals in Sattra. Till now Vyah Goa Ojah is a part of rituals of the Sattras of Assam. The dancers in an Oja paali chorus not only sing and dance but also explain the narration by gestures and stylized movements. As far as Devadasi dance is concerned, resemblance of a good number of rhythmic syllables and dance postures along with footwork with Sattriya dance is a clear indication of the influence of the former on the latter. Other visible influences on Sattriya dance are those from Assamese folk dances namely Bihu, Bodos etc. Many hand gestures and rhythmic syllables are strikingly similar in these dance forms.

55. Why is a dance form known as Sattriya?
(A) Because of its religious character and association with the Sattras
(B) Because of its religious character i.e. Vaishnava maths or monasteries
(C) Because of nurtured and preserved with great commitment by the Sattras
(D) All of above

56. According to the passage, what is the meaning of Ojapali?
(A) It means a person with the skills of Sattriya dance
(B) A unique traditional folk dance form of Assam
(C) It is a combination of three art forms – Song, Dance and Drama
(D) Both B and C

57. The term Sattriya implies to _____.
(A) Farming   (B) Acting
(C) Dance   (D) None of the above

58. In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase. Tie the knot
(A) To put yourself into a problem
(B) To make fateful decision
(C) To sign the deal
(D) To get married

Direction (59-61): In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

59. A short, thick stick used as a weapon.
(A) strand   (B) cable
(C) lasso   (D) cudgel

60. To harass someone persistently to do something.
(A) Iconoclast   (B) Dote
(C) Neurotic   (D) Importune

61. A bias in favour of something.
(A) addiction   (B) disposition
(C) predilection   (D) impulse

Direction (62-63) In the following question, a sentence is given with a blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

62. We had scarcely arrived at the Perkins Institution for the Blind _____ I began to make friends with the little blind children.
(A) When   (B) Then
(C) But   (D) Although

63. Everybody will listen, if you _____ your voice.
(A) Rays   (B) Raze
(C) Raise   (D) Reize

Direction (64-68): Fill in the blanks with the most appropriate word choosing from the options given below

64. The manager was _____ an explanation of his conduct.
(A) called for   (B) called off
(C) called to   (D) called up

65. Virat Kohli added another feather _____ his cap by his wonderful performance in the one day match.
(A) in   (B) to
(C) into   (D) upon

66. Only when _____ failed, the army resorted to force.
(A) efforts   (B) arrests
(C) persuasions   (D) manipulations

67. John as well as his friends always _____ the permission of his mother before going for a rugby match.
(A) asks   (B) receives
(C) seeks   (D) soughts

68. My sister unlike my brothers _____ to have a career in Engineering.
(A) wants   (B) want
(C) wish   (D) aspire

69. In the following question, out of the four alternatives, select the word opposite in meaning to the given word.
Grotesque
(A) Free   (B) Odd
(C) Plain   (D) Queer

70. Form an adjective from the given word.
Cartoon
(A) Cartoonist   (B) Cartoonish
(C) Cartoonishly   (D) Cartoonishness

Solution

PHYSICS

Ans.1(C) According to Archimedes Principle, Any object, wholly or partially immersed in a fluid, is buoyed up by a force equal to the weight of the fluid displaced by the object.

Ans.2(A) The hydraulic press is a device used for lifting heavy loads by the application of much smaller force. It is based on

Pascal's law, which states that intensity of pressure is transmitted equally in all directions through a mass of fluid at rest.

Ans.3(C) Light waves are transverse in nature. The direction of its vibration is in the plane which is perpendicular to the direction of propagation of the wave. Thus wave can vibrate in any plane (infinite possibilities) which is perpendicular to the direction of propagation of the wave. Polarization essentially means that this oscillation can happen with more than one orientation.

Ans.4(C) $v^2 = u^2 + 2as \Rightarrow v^2 = 2as$ …. (i)

Force on the ship, $F = ma$ … (ii)

From eqn. (i) and (ii), we get $v = \sqrt{\frac{2Fs}{m}}$

$= \sqrt{\frac{2 \times 5 \times 10^4 \times 3}{3 \times 10^7}} = 0.1 \, ms^{-1}$

Ans.5(A) Applying Bernoulli's theorem

$\frac{P_1}{Q} + \frac{1}{2} u_1^2 = \frac{P_2}{Q} + \frac{1}{2} u_2^2$

Given $P1 = 5000$ N/m², Density $Q = 1$, $v1 = 1$m/sec

$P_2 = P_1 + \frac{1}{2} u_2^2 - \frac{1}{2} u_2^2 = 5000 + \frac{1}{2} \times 1^2 -$

$\frac{1}{2} (\sqrt{3})^2 = 5000 \, N/m^2$

Thus, the pressure of water at point N is 5000 N/ m²

Ans.6(A) Semiconductor devices are temperature dependent

Ans.7(D) Since, no force of friction is present. So, no horizontal force is present on body of mass m. In vertical direction normal force balances weight of the body. Hence, net force on top body must be zero

Ans.8(B) Fuse wires are made of Tin-lead alloy instead of copper due to various reasons. This wire is consist of low melting point as well as the have the high resistance.

Ans.9(B) Decibel is the unit of intensity of sound.

Ans.10(B) In an atom, a positive charge occurs when an atom has more protons than electrons.

Ans.11(D) In vacuum the velocity of light is maximum or equal to the speed of light because in vacuum the index of refraction is 1 and no matter in it.

Ans.12(A) Average speed = $\frac{Distance \, travelled}{time \, taken}$

Let t_1 and t_2 be time taken by the car to go from X to Y and then from Y to X, respectively.

Then, $t_1 + t_2 = \frac{XY}{V_U} + \frac{XY}{V_d}$

$= XY \left(\frac{V_U + V_d}{v_u v_d} \right)$

Total distance travelled $= XY + XY = 2XY$

$\therefore v_{av} = \frac{2XY}{XY \left(\frac{V_u + V_d}{V_u V_d} \right)} = \frac{2V_u V_d}{V_u + V_d}$

Ans.13(D) The magnitude of the electrostatic force of attraction or repulsion between two point charges is directly proportional to the product of the magnitudes of charges and inversely proportional to the square of the distance between them.

Ans.14(C)

Ans.15(A) An electric generator/dynamo is based on Faraday's law of electromagnetic induction.

Ans.16(C) Binding energy (BE) =

$\frac{G M_e m}{R_e} = \frac{6.67 \times 10^{-11} \times 6 \times 10^{24} \times 50}{64 \times 10^5}$

$= 3.13 \times 10^9 \, j$

Ans.17(D) We know that the frequency range of audio analog signals is 20 Hz to 20 kHz.

Ans.18(D) The bridge is balanced using variable resistor and the galvanometer reading shows zero. Then unknown resistance is measured using formula. $R_x = (R_2 R_1) \times R_3$ where R3 is the unknown resistance, R3 and R2 are known values of standard resistances in the bridge. It is used for finding value of unknown inductance capacitance by making certain changes to the circuit. The essential components are two known resistances, power supply, variable resistance, a galvanometer and the unknown resistor. physical parameters like strain, light, and temperature.

Ans.19(A) : Y = Stress/strain

$\therefore [Y] = \left(\frac{F1}{A\Delta l} \right) = \frac{[MLT^{-2}L]}{[L^2 , L]} = [ML^{-1}T^{-2}]$

Ans.20(B) A current carrying conductor placed in a magnetic field experiences magnetic force. The factors which affect the magnetic force are the magnetic field strength, current which flows through the conductor and the length of the conductor. The force is

maximum when the conductor lies perpendicular to the direction of magnetic field. It is zero when the conductor lies parallel to the direction of magnetic field. Force = ILB Sin Θ where I is current, L is length of conductor, B is the strength of magnetic field and Θ is the angle between the direction of current and magnetic field. Force = ILB Sin 45° = 40 × 1 × 1 × 0.707 = 28.28 N

MATH

Ans.21(C) Given: a = 1

r = 2

As per geometric progression,

tn = ar^{n-1}

tn = 1.2$^{20-1}$

tn = 2^{19}

Ans.22(C) given: $\pi \sin \theta = 1$ -----1 and $\pi \cos\theta = 1$ -----2

⇒ dividing both the above equation we get

⇒ $\pi \sin \theta/\pi \cos\theta = 1/1$

⇒ $\tan \theta = 1$

⇒ θ = 45

⇒ Let x = $\{\sqrt{3}\tan(2\theta)+1\}$

⇒ putting the value of θ in

⇒ $x = \sqrt{3} \tan (2/3)x 45) + 1$

⇒ $x = \sqrt{3} \tan (30) + 1)$

⇒ $x = \sqrt{3} \times (1/\sqrt{3}) + 1$

∴ x = 2

Ans.23(C) $\text{Sin}x +\sin^2x =1$

$\sin x = 1 - \sin^2x = \cos^2x$

∴$\cos^8x +2\cos^6x +\cos^4x$

$= \sin^4x +2\sin^3x +\sin^2x$

$= (\sin^2x)^2 +(\sin x)^2 +2\sin x(\sin^2x)$

$=(\sin^2x+\sin x)^2=1$

Ans.24(A) Since the middle tern has greatest coefficient.

Greatest coefficient = coefficient of the middle tern

$2n_{Cn} = \dfrac{(2n)!}{n!\,n!} = \dfrac{2n(2n-1)(2n-2)(2n-3)\dots\dots4.3.2}{n!\,n!}$

$= \dfrac{\{(2n-1)(2n-3)\dots3.1\}\{2n(2n-2)(2n-4)\dots4.2\}}{n!\,n!}$

$= \dfrac{[1.3.5\dots(2n-1)]2^n\,[n(n-1)(n-2)\dots2.1]}{n!\,n!}$

$= \dfrac{1.3.5\dots(2n-1)2^n n!}{n!\,n!} = \dfrac{1.3.5\dots(2n-1)2^n}{n!\,n!}$

Ans.25(C) Given, expression,

$\dfrac{sinx + sinx7x + sin3x + sin5x}{cosx + cos7x + cos3x + cos5x}$

$= \dfrac{2sin4x\,cos3x +2sin4x\,cosx}{2cos4x\,cos3x +2cos4x\,cosx}$

$= \dfrac{2 \sin4x [cos3x + cosx]}{2 cos4x [cos3x + cosx]} = tan4x$

Ans.26(B) Given,

(a + b). b= 0

=> a .b +b^2 =0

=> a. b = -b^2

Also, a (a+2b) = 0

=> a^2 + 2a.b = 0

=> ab = $\dfrac{-a^2}{2}$

∴b^2 =1/2 a^2

=> a^2 + 2b^2

=> a = $\sqrt{2b}$

Ans.27(B) $\sum x_1 = \sin2\beta, \sum x_1x_2 = \cos2\beta, \sum x_1x_2x_3 = \cos\beta$

$x_1x_2x_3x_4 = -\sin\beta$

tan -1 × 1+ tan -1 × 2 +tan -1 × 3 + tan -1 × 4

$= \tan^{-1}\left(\dfrac{\sum x_1-\sum x_1 x_2 x_3 x_a}{1-\sum x_1 x_2+x_1 x_2 x_3 x_4}\right)$

$\tan^{-1}\left(\dfrac{sin2\beta -cos\beta}{1-cos2\beta -sin\beta}\right) = \tan^{-1}(\cot \beta) \tan^{-1}$

$\left(tan\left(\dfrac{\pi}{2} - \beta\right)\right) = \dfrac{\pi}{2} - \beta$

Ans.28(A) $\log_8 m + \log_8 1/6 =2/3$

⇒ $\log_8 m/6=2/3$

$[∵ \log_a m + \log_a n = \log_a(m \times n)]$

m/6 = (8)$^{2/3}$ = (2^3)$^{2/3}$ =2^2 =4

⇒ m =6×4 =24

Ans.29(A) sin600°cos330°+120°sin150°

=-sin60°cos30°-sin30°cos60°

=- {sin(60°+30°)}=-1

Ans.30(B) I. given $\lim_{x\to 0}\dfrac{1}{x}$

LHL = f(0-0) =$\lim_{h\to 0}$ f(0-h) = $\lim_{h\to 0}\left(-\dfrac{1}{h}\right) = -\infty$

RHL = f(0 +0) = $\lim_{h\to 0}$ f(0+h) = $\lim_{h\to 0}\dfrac{1}{h} = +\infty$

∴LHL ≠ RHL,

SO, $\lim_{x\to 0}\dfrac{1}{x}$ dose not exist

II. Given, $\lim_{x\to 0}\dfrac{1}{ex}$

LHL = f(0-0) =$\lim_{h\to 0}$ f(0-h) = $\lim_{h\to 0}\dfrac{-1}{eh} = e^{-\infty} = 0$

RHL = f(0+0) = $\lim_{h\to 0}$ f (0+h) = $\lim_{h\to 0}\dfrac{-1}{eh} = e^{-\infty} = \infty$

$\therefore$ LHL $\neq$ RHL,

$\therefore \lim\limits_{x \to 0} \frac{1}{x}$ dose not exist

Ans.31(D) We have,

$Z = \frac{5+i}{3-i} + \frac{2}{1-3i}$

$= \frac{(5+i)(1-3i)+2(3-i)}{(3-i)(1-3i)}$

$= \frac{5-15i+i+3+6-2i}{3-9i-i-3} = \frac{14-16i}{-10i} = -\frac{7i}{5} + 8/5$

Ans.32(C) Given,

$x^m + y^m = 1$

On differentiating both side w.r.t x, we get

$mx^{m-1} + my^{m-1}\frac{dy}{dx} = 0$

$\Rightarrow \frac{dy}{dx} = \frac{mx^{m-1}}{my^{m-1}}$

$= \frac{-x^{m-1}}{y^{m-1}} = -\left(\frac{x^m}{y^m}\right)(y/x)$

Given,

$-\frac{x}{y} = -\left(\frac{x^m}{y^m}\right)(y/x)$

$\therefore (x/y)^{m-2} = 1$

Which is true when m = 2.

Ans.33(C) $= \frac{1+i\sqrt{3}}{\sqrt{3}+1} = \frac{1}{\sqrt{3}+1} + \frac{i\sqrt{3}}{\sqrt{3}+1}$

Argument $= \theta = \tan^{-1}(y/x)$

$= \tan^{-1}\left(\frac{\frac{\sqrt{3}}{\sqrt{3}+1}}{\frac{1}{\sqrt{3}+1}}\right)$

$= \tan^{-1}(\sqrt{3})$

$= \tan^{-1}\left(\tan\frac{\pi}{3}\right)$

Ans.34(B) Since, slope of line x cos θ +y sin θ = 2 is $-$cot θ and slope of line x-y =3 is 1

Also, these lines are perpendicular to each other.

$\therefore (-\cot\theta)(1) = -1$

$\cot\theta = 1 = \cot \pi/4$

$\theta = \pi/4$

Ans.35(A) $f(x) = 2^x$

$f'(x) = 2^x \log_e 2$

$f''(x) = 2^x \log_e 2 . \log_e 2 = 2^x (\log_e 2)^2$

Ans.36(D) Here, A and B are any two sets and U is the universal set.

$\therefore \cos^{-1}\left(\frac{1}{\sqrt{5}}\right) = \theta$

Ans.37(B)

$\sec^{-1}(\sqrt{5}) = \theta$

$\Rightarrow \frac{\pi}{2} - \csc^{-1}\sqrt{5} = \theta$

$\therefore \sec^{-1}x + \csc^{-1}x = \frac{\pi}{2}$

$\therefore \csc^{-1}(\sqrt{5}) = \frac{\pi}{2} - \theta$
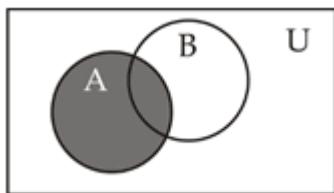
Ans.38(A) Since a & β are the zero of the polynomial

$f(x) = x^2 - 5x + k$

$\therefore a + \beta = -\left(\frac{-5}{1}\right) = 5$ and $a\beta = \frac{k}{1} = k$

Now,

$a + \beta = 1$

$\Rightarrow (a - \beta)^2 = 1$

$\Rightarrow (a + \beta)^2 - 4a\beta = 1$

$\Rightarrow 24 = 4k$

$\Rightarrow k = 6$

Ans.39(C) We know that

$\cos 2x = 2\cos^2 x - 1$

$\therefore \int \frac{2\cos^2 x - \cos 2x}{\sin^2 x}$

$= \int \frac{2\cos^2 x - (2\cos^2 x - 1)}{\sin^2 x} dx$

$= \int \frac{1}{\sin^2 x} dx$

$= \int \csc^2 x \, dx$

$= -\cot x + c$

Ans.40(D) Given: nth term of the sequence is $a_n = \frac{n^2}{2^n}$

To find the 8th term for the same substitute n = 8,

we obtain

$a_3 = \frac{8}{2^8} = \frac{64}{256}$

Ans.41(A) From Statement I.

$2x^2 - 13x + 20 = 0$

$2x^2 - 8x - 5x + 20 = 0$

$(2x - 5)(x - 4) = 0$

$x = 5/2, 4$

From Statement II.

$2y^2 - 7y + 6 = 0$

$2y^2 - 4y - 3y + 6 = 0$

$(2y - 3)(y - 2) = 0$

$y = 3/2, 2$

Hence x > y

Ans.42(B) Given set A = {10, 20, 30} which has 3 elements and B = {p, q, r} which has 3 elements.

The sets A and B have the same number of element and hence they are known as equivalent set.

However, the elements of set A are not equal to the elements of set B, and hence they are equivalent sets.

Equivalent set A and B is represented as A $\leftrightarrow$ B.

Ans.43(B) Given, a coin is tossed three times

Now required probability

= P (HTH) + P (THT)

$= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} + \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}$

$= \frac{1}{8} + \frac{1}{8} = \frac{2}{8} = \frac{1}{4}$

Ans.44(A) Let the third vertex be (p, q), then

q = p + 3   .....(i)

Also, $\Delta = |5| = \pm 5$

$\therefore$ q +3p -7 = $\pm$ 10

$\therefore$ 3p +q =17   .....(ii)

And, 3p +q = -3   ....(iii)

On solving (i) with (ii) and (iii), we get $\left(\frac{7}{2}, \frac{13}{2}\right)$ and $\left(\frac{-3}{2}, \frac{3}{2}\right)$

$\therefore$ Required vertex = $\left(\frac{7}{2}, \frac{13}{2}\right)$

Ans.45(A)

$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ b+c & a+c & a+b \end{vmatrix}$

$= \begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a+b+ & a+b+c & a+b+c \end{vmatrix}$

$R_3 \rightarrow R_2 \rightarrow R_3$

$= (a+b+c) \begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a & 1 & 1 \end{vmatrix}$

Ans.46(B) AB = $\hat{i} + 2\hat{j} - \hat{k}$

CD = -3 ($\hat{i} + 2\hat{j} - \hat{k}$) = - 3AB

Therefore AB and CD are parallel

Ans.47(C) Let I = $\int_{-a}^{a} (x^3 + sinx) dx$

As f(-x) = -f(x)

i.e. f (x) is an odd function

$\therefore \int_{-a}^{a} (x^3 + sinx) dx = 0$

Ans.48(D) $\left| \frac{1}{1+5i} - \frac{1}{1-5i} \right| = \left| \frac{1-5i-(1+5i)}{(1+5i)(1-5i)} \right|$

$= \left| \frac{-10i}{26} \right| = \left| \frac{-5}{13} i \right| = \frac{5}{13}$

Ans.49(C) |A∪B∪C| = |A| + |B| + |C| - |A∩B∩C'| - |B∩C∩A'| - |A∩C∩B'| + |A∩B∩C|

⇒ 34 = 22 + 18 + 6 - 3 - 2 - 4 + |A∩B∩C|

⇒ |A∩B∩C| = 34 - 22 - 13 - 6 + 3 + 2 + 4

= 43 - 41 = 2

Ans.50(A) Given, n = 5, sum = 60

Mean Deviation =

∑|δ|/n

M = 60/5 = 12

Standard deviation of 4, 8, 12, 16, 20 are,

∑δ² = |4 - 12|² + |8 - 12|² + |12 – 12|² + |16 - 12|² + |20 - 12|² = 160

σ=√∑δ²/n=√160/5=√32=5.6

Standard deviation σ = 5.6

ENGLISH

Ans.51(A) Loopholes means an ambiguity or inadequacy in the law or a set of rules.

Ans.52(A) first clause is "conditional" clause and in conditional clause we do not use "will or would" in it. it should be in present indefinite. It should be If it rains, they will not come.

Ans.53(C)

Ans.54(C)

Ans.55(D) The correct answer is Option D because every other option gives correct information regarding the formation of the dance name 'Sattriya.

Ans.56(D) As given in the passage, ojapali was one of the dance forms prevalent in Assam before the neo- Vaishnava movement. Hence, option B is correct. The dancers in an Oja paali chorus not only sing and dance but also explain the narration by gestures and stylized movements. Thus, option C is also correct. The ojipali dance form still existed before the Sattriya dance form which means the person does not require the skill of Sattriya dance to perform ojipali dance. Hence, option A is incorrect.

Ans.57(C) As given in the first line of the passage, Sattriya is a dance form introduced in the 15th century A.D by the great Vaishnava saint and reformer of Assam.

Ans.58(D) Tie the knot means to marry a mate.

Ans.59(D) Strand means the shore of a sea, lake, or large river. Lasso means a rope with a noose at one end, used especially in North America for catching cattle.

Ans.60(C) Predilection means a preference or special liking for something; a bias in favour of something.

Ans.61(D) Iconoclast means a person who attacks or criticizes cherished beliefs or institutions. Dote means be extremely and uncritically fond of. Neurotic means having, caused by, or relating to neurosis.

Ans.62(A) When as a conjunction means at that time and when there is scarcely used in the sentence, we use when.

Ans.63(C) Option A 'rays' means the beams of the Sun.
Option B 'raze' means to destroy.
Option C 'raise' means to lift something
The word 'reize' in option C does not exist.
The word raise is suitable for this sentence and this is why option C is the correct answer.

Ans.64(A)
Ans.65(B)
Ans.66(C)
Ans.67(C)
Ans.68(A)

Ans.69(C) Grotesque means comically or repulsively ugly or distorted. Free means not limited or controlled.
Odd means the different to what is usual or expected; strange. Queer means strange; odd. Plain means not decorated or elaborate; simple or basic in character. So, option C is the correct answer.

Ans.70(B) Cartoon is a noun meaning a humorous or satirical drawing published in a newspaper or magazine. Cartoonist is a noun meaning person who draws cartoons.
Cartoonishis an adjective meaning like a cartoon, esp in being one-dimensional, brightly coloured, or exaggerated. Cartoonishly is an adverb meaning in a cartoonish manner; thus, in a comical or exaggerated way.
Cartoonishness is a noun meaning the state or condition of being cartoonish.

Importance: To provide worldwide commitment and action to prevent suicides, with various activities around the world since 2003.
Motto: To raise awareness around the globe that suicide can be prevented.
Organisation Involved: International Association for Suicide Prevention (IASP), World Health Organization (WHO) and the World Federation for Mental Health (WFMH).
Inception: 2003
2023 Theme: CREATING HOPE THROUGH ACTION
Note: In 2014, the first WHO World Suicide report was released "Preventing Suicide: A Global Imperative"

Importance: To honor the memory of nearly 3,000 people who were killed in the September 11, 2001, terrorist attack in USA.
Inception: 2002
Note: 4 September 2002, US President Bush proclaimed September 11, 2002, as the first Patriot Day.
History:
On September 11, 2001, four planes were hijacked. The hijackers then deliberately flew three of the planes into two important buildings, the Pentagon in Washington DC and the Twin Towers of the World Trade Center in New York. The fourth crashed into a field near Shanksville, Pennsylvania.
Note: Patriot Day should not be confused with Patriot's Day, also known as Patriots Day, which commemorates the battles of Lexington and Concord in 1775, which were two of the earliest battles in the American Revolutionary War.

NDA GAT Model Paper

Part - A

Direction (1-10) Read the following passage carefully and answer the questions given below it. Certain words/ phrases have been printed in bold to help you locate them while answering some of the questions.

Samrat was a boy of ten. He was staying in his teacher's house to learn Spanish. Samrat was an eloquent student and his Guru liked him. But the teacher didn't show his good will towards the student. Rather, he was harsh towards him. One day Samrat was not very heedful in the class. This made the teacher annoyed. He beat him extremely. Samrat sobbed for a while. Then he wanted to **unleash** his revenge on the Guru. In his rage he decided to kill the teacher. He chalked out a plan for this; Samrat would climb up to the roof of his teacher's bedroom with heavy granite stone and drop it on the teacher's head when he was asleep. So, after taking the dinner, Samrat went out, picked up a heavy stone and climbed to the roof of the room. After some time, his teacher and his wife retired to bed. Before sleeping they talked for some time. During the talk Samrat heard his name being mentioned. He listened to their conversation attentively. The teacher's wife was equally fond of Samrat. She was telling the teacher, 'this morning you were very harsh on Samrat. You beat him umpteen times, mercilessly. Is he not the best boy in your class? If you behave in this manner he will run away from here and you will lose a good student.'
The teacher replied, 'you are right, I should not have been so cruel to him. But you know he was not attentive in the class. I was taking an important lesson and he was talking to another boy. When I saw it, I lost my temper? Samrat should not miss important lessons. So, I beat him in such a way that the punishment may deter him from such indifference in future.'
On hearing this, Samrat became very sad. It was with good intention that the teacher punished him. He was overwhelmed with regret. The whole night he sat on the roof. The next morning after lessons, he approached his teacher when he was alone and apologized to him everything.

1. What was the plan of Samrat to take revenge?
(A) To make a situation so that the teacher becomes hopeless.
(B) To kill the wife of the Guru
(C) To peep into his bedroom from the roof top
(D) To crush the teacher's head with a stone at night

2. In which system of education was Samrat studying?
(A) The system of read and recite
(B) The system of day and night school
(C) Staying in teacher's house and work for him
(D) The Gurukula system of learning Spanish

3. Why did the teacher not show affection to Samrat?
(A) He developed hatred towards him
(B) He knew that Samrat was a potential killer
(C) Samrat did not have sympathy towards teacher's wife
(D) The teacher had seen him talking with other boys

4. The purpose of the teacher to punish the boy was _
(A) to reform him as he was bad in studies
(B) to teach him as he was not paying attention
(C) to send message to the class to improve their behaviour
(D) to make the boy vindictive

5. Which behaviour irritated the teacher most?
(A) Going to roof top with granite stone
(B) Listening to the bedroom conversation
(C) Indulging into the conversation with other boys during class
(D) The weeping of Samrat

6. In the opinion of teacher's wife, Samrat was …..
(A) most dishonest, insincere boy
(B) the best student in the class
(C) a short-tempered sensitive boy
(D) a student who deserved much more punishment

7. What was the Samrat's reaction on hearing the conversation in his teacher's bedroom?

(A) should wait for the couple to sleep and kill them both
(B) how wrong am I to kill such a nice teacher
(C) I should jump onto the bed of the couple from roof top
(D) Alas! I should not have heard the conversation

8. Which of the following is TRUE in the context of the passage?
(A) The Gurukula system of education was forced on Samrat
(B) The teacher assaulted the student mercilessly
(C) The teacher's wife was astonished at the behaviour of Samrat
(D) Samrat did not have guilt feeling even after hearing the conversation

9. Which of the following is NOT TRUE in the context of the passage?
(A) In old days boys at young age were sent to teacher's house
(B) But for bedroom conversation, Samrat would not have killed the teacher
(C) Samrat was the best student in the class
(D) The teacher's wife was of the view that Samrat might run away

10. What is the meaning of the word Unleash?
(A) Release **(B)** Captivate
(C) Control **(D)** Numerate

11. In the question, a word is given. From the given answer choices, select an appropriate synonym for this word. **MYRIAD**
(A) Calculable **(B)** Innumerable
(C) Frequent **(D)** Corrupt

12. In the question, a word is given. From the given answer choices, select an appropriate synonym for this word. **GULLIBLE**
(A) Naïve **(B)** Shrewd
(C) Legitimate **(D)** Wary

13. In the question, a word is given. From the given answer choices, select an appropriate synonym for this word. **SUFFICE**
(A) Satisfy **(B)** Fall short of
(C) Enough **(D)** Fulfil

14. In the question, a word is given. From the given answer choices, select an appropriate synonym for this word. **EMBRACE**
(A) Cuddle **(B)** Squeeze
(C) Refuse **(D)** Accept

15. In the question, a word is given. From the given answer choices, select an appropriate synonym for this word.
PECULIARITIES
(A) Distinctiveness **(B)** Generality
(C) Common **(D)** Solidarity

16. In the question, a word is given. From the given answer choices, select an appropriate synonym for this word. **DISSEMINATION**
(A) Evaporation **(B)** Strengthening
(C) Spreading **(D)** Centralization

17. In the question, a word is given. From the given answer choices, select an appropriate Antonym for this word. **BOASTS**
(A) Overdraw **(B)** Magnify
(C) Exaggerate **(D)** Minimizes

18. In the question, a word is given. From the given answer choices, select an appropriate Antonym for this word. **MODERATE**
(A) Modest **(B)** Intense
(C) Temperate **(D)** Mild

Direction (19-22) Choose the correctly spelt word: -

19. The attorney asked a question that was _____to the case; the judge overruled it.
(A) Irelevent **(B)** Irelevant
(C) Irrelevant **(D)** Irrelevent

20. Dad thinks it is _____ to stay up late on a school night.
(A) Ridiculous **(B)** Rediculus
(C) Ridicullous **(D)** Ridiculus

21. From inside the box came a strange _____ sound.
(A) Mechanical **(B)** Mechhanical
(C) Mecanical **(D)** Machanical

22. The large donation came from an _____ source.
(A) Anynonimous **(B)** Anonimous
(C) Anounymous **(D)** Anonymous

Direction (23-27) Choose the most appropriate Idioms:
-

23. Rakesh was a performer at the school sports club. It was obvious that he was _____.
(A) Red-tapism   (B) Drought
(C) Buckled down   (D) Going places

24. Reema saw her jewelry and cash missing from the almirah. After the initial shock, _____ she and called up the police.
(A) Punch above one's weight
(B) Close to home
(C) Got a grip on herself
(D) Cut to the quick

25. The market of watches has suffered a big loss after the arrival of mobile phones.
The survivors are just _____.
(A) Going places
(B) hanging on by their fingernails
(C) Xerox subsidy
(D) Sink your teeth into

26. The deadline for the project is fast arriving; we have _____ for timely completion.
(A) Xerox subsidy   (B) Close to home
(C) Pulled out all the stops   (D) Sink your teeth into

27. Getting through the exam for civil services is possible when you have _____ yourself.
(A) Punch above one's weight
(B) Have one's heart set on
(C) Buckled down
(D) Going places

Directions (28-33) In questions below, there is one statement consisting of three blanks. You have to choose the option which provides the correct set of words that fits both the blanks appropriately and in the same order making them meaningful and grammatically correct.

28. The Best of Granta Reportage (1993) celebrates the work of 13 other journalists and writers, starting with a classic, The Soccer War, by Ryszard Kapuściński, about the fighting that ……….. out between Honduras and El Salvador in 1969 after their matches to …….. which one of them would …… for the 1970 World Cud.
(A) Brought, analyse, qualify

(B) Break, determine, pass
(C) Bring, determine, exemplify
(D) Broke, determine, qualify

29. Mr. Morarji Desai, Deputy Prime Minister, made a categorical …….. in the Lok Sabha that the Government did not hold the view that nationalisation of banks ………. necessary, in the present state of affairs. Though some members of the Congress Party ………. Nationalization.
(A) Proclamation, has, demarcated
(B) Declaration, was, demanded
(C) Industrialization, was, asked
(D) Prevalence, was, assured.

30. The peak-end rule, …………. has been used to explain the irrationality involved in …………….. forms of human behaviour, and applied to influence such behaviour, was first studied by American psychologists Daniel Kahneman, Barbara Fredrickson and ……. colleagues in 1993.
(A) Which, various, their
(B) Which, curious, its
(C) That, various, his
(D) Which, several, his

31. ...…… to the rules of an international trade organisation ………… expected to serve as an important domestic incentive (and imperative. for governments by allowing them to resist protectionist demands and provide ……… greater legal certainty.
(A) Appearance, is, to   (B) Adherence, was, for
(C) Compliance, were, for (D) Normalization, was, to

32. Criticism …………..the dispute settlement system is not the monopoly of ……… U.S. Other WTO members are ….. concerns over the politicisation of the Appellate Body appointment and reappointment process, and the quasi-attribution of permanent Appellate Body seats to the U.S. and the European Union (EU).
(A) Before, a, expressing
(B) Against, the, expressed
(C) After, the, expressing
(D) Against, the, expressing

33. This would allow individuals some recourse if their rights were not ……..…, important,

especially following the Supreme Court's Right to Privacy judgment.

(A) Detected   (B) Advertised

(C) Seen   (D) Protected

Directions (34-45) Read each sentence to find out whether there is any grammatical error or idiomatic error in it. The error, if any, will be in one part of the sentence. The number of that part is the answer. If there is 'No error', the answer is (D). (Ignore errors of punctuation, if any).

34. Being his elder sister **(A)** she always suggests him but **(B)** he doesn't like being suggested by her every time **(C)** No error **(D)**

35. The number of questions have **(A)** been asked by the SSC but this one seems **(B)** very different and tough as well **(C)** No error **(D)**

36. There are many people **(A)** living in slum areas who are deprived from **(B)** basic healthcare facilities provided by the state government. **(C)** No error **(D)**

37. It is highly **(A)** believed that the more one learns, **(B)** better one's future becomes. **(C)** No error **(D)**

38. Arjit singh beautifully**(A)** subjugated the entire audience **(B)** at the auditorium last night. **(C)** No error **(D)**

39. The 2016 surgical strikes **(A)**/ against terrorist launch **(B)**/ pads to the Line of Control **(C)**/ No error **(D)**

40. The Delhi Development Authority (DDA) formulated **(A)**/ the walkability policy **(B)**/ to make the city more pedestrian friendly **(C)**/ No error **(D)**

41. The renewed focus with **(A)**/ the involvement of the local **(B)**/ community in managing water is a welcome step **(C)**/ No error **(D)**

42. The successful implementation of the programme show **(A)**/ that there is an urgent need for **(B)**/ a comprehensive mapping of springs **(C)**/ No error **(D)**

43. Ideas do not gain traction **(A)**/ until they speak to some **(B)**/ aspect of the human condition **(C)**/ No error **(D)**

44. An ideology that ranges itself **(A)**/ with issues that a majority of citizens **(B)**/ feel strongly about will always struggle in a democracy **(C)**/ No error **(D)**

45. We are born into this **(A)**/ world to live together **(B)**/ and love each other **(C)**/ No error **(D)**

Direction (46-50) In the following passage there are blanks, each of which has been numbered. These members are printed below the passage and against each, five words are suggested, one of which fits the blank appropriately. Find out the appropriate words.

Prime Minister Narendra Modi on Monday **(46)** Imran Khan, leader of the Pakistan Tehreek-e-Insaf (PTI), that **(47)** as the single largest party in the Pakistan General Election.

"The Prime Minister spoke to Mr. Imran Khan, Chairperson of the PTI and congratulated him for his party emerging as the largest political party in the National Assembly of Pakistan in the recently **(48)** general elections," the Ministry of External Affairs said in a statement.

His comment came a day after India welcomed the democratic process of Pakistan and conveyed its desire for a **(49)** and progressive neighbour that would **(50)** on terrorism. "The PM expressed hope that democracy will take deeper roots in Pakistan," the statement said.

46. (A) Graced   (B) Embraced
    (C) Congratulated   (D) Tickled

47. (A) Emerged   (B) Droplet
    (C) Implemented   (D) Inscribed

48. (A) Conducted   (B) Induced
    (C) Flourished   (D) Vaporized

49. (A) Impoverished   (B) Unsuccessful
    (C) Prosperous   (D) Loaded

50. (A) Liberate   (B) Promote
    (C) Misguide   (D) Crack down

Part - B

51. Velocity of light is maximum in
(A) Diamond
(B) Water
(C) Glass
(D) Vacuum

52. A car moves from X to Y with a uniform speed Vu and returns from Y to X with a uniform speed Vd. The average speed for this round trip is?
(A) $\frac{2V\,dVu}{vd+vu}$
(B) $\sqrt{VuV_d}$
(C) $\frac{V_dV_u}{V_d+V_u}$
(D) $\frac{V_u+V_d}{2}$

53. According to Coulomb's law, the electrostatic force between two charges is?
(A) Directly proportional to the product of the charges.
(B) Inversely proportional to the square of the distance. between the charges.
(C) Directly proportional to the cube of the distance between charges.
(D) Both A and B.

54. In electric supply lines in India, which parameter kept constant?
(A) Voltage
(B) Current
(C) Frequency
(D) Power

55. An electric generator is based on-
(A) Faraday's law of electromagnetic induction.
(B) Motion of charged particles in electromagnetic field.
(C) Newton's laws of motion.
(D) Fission of uranium by slow neutrons.

56. World's largest solar power plant is located in _____.
(A) Kalahari Desert, Africa
(B) Sahara Desert, Libya
(C) Thar Desert India
(D) Mojava Desert USA

57. The shipping canal that connects the North Sea and the Baltic Sea is called the _____.
(A) Panama Canal
(B) Suez Canal
(C) Kiel Canal
(D) Buckingham Canal

58. The strait that separates Tasmania from the mainland of Australia is.
(A) Cook Strait
(B) Bass Strait

(C) Torres Strait
(D) Palk Strait

59. Milan, Turin and Genoa industrial triangle is in _____.
(A) Japan
(B) France
(C) Former USSR
(D) Italy

60. The Andaman and Nicobar Islands are submerged parts of mountain range called:
(A) Arakan Yoma
(B) Pegu Yoma
(C) Askai Chin
(D) Tien Shan

61. The desert regions of the world occupy about ____ part of the land surface of the earth.
(A) 1/3
(B) 1.6
(C) 1/5
(D) None of the above

62. The north flowing rivers of Siberia are not of much use for navigation mainly because.
(A) They are too shallow in the dry season
(B) The lower courses remain frozen for many months
(C) They flow through uninhabited areas
(D) They lack navigation facilities to ensure safety

63. Which among these is an intermontane plateau?
(A) Deccan
(B) Anatolia
(C) Columbia
(D) Tibet

64. European Turkey is separated from its Asian part by _____.
(A) Straits of Bosporus
(B) Sea of Marmara
(C) Straits of Dardanelles
(D) All the above

65. Death Valley is situated in_____.
(A) The USA
(B) Jordan
(C) Israel
(D) Peru

66. The gravitational force of attraction between two bodies is _____ the distance between the two bodies.
(A) Inversely proportional to the
(B) Directly proportional to the square of
(C) Inversely proportional to the square of
(D) Directly proportional to the

67. A ray of white light strikes the surface of an object. If all the colours are reflected the surface would appear:
(A) Black
(B) White
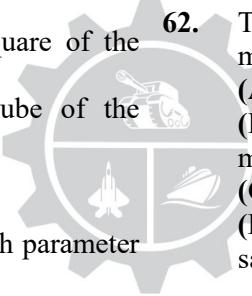
(C) Grey   (D) Red

68. When a glass rod is rubbed with silk then which type of charge is created on it?
(A) Electric charge   (B) Positive charge
(C) Negative charge   (D) None of the above

69. When a body motion on a circular path, then one force works towards the center of the path, which is called?
(A) Centripetal force   (B) Centrifugal force
(C) Both   (D) None

70. What is the unit of electric current?
(A) Meter   (B) Ampere
(C) Kelvin   (D) Candela

71. Which of the following is not matched correctly?
(A) Amount of substance   -   mole
(B) Luminous intensity   -   candela
(C) Mass   -   kilogram
(D) Thermodynamic temperature - secon

72. The burn caused by steam is more severe than, boiling water because-
(A) Steam has latent heat
(B) Steam enters the body
(C) Steam is light
(D) All of the above

73. Which of the following has the longest wavelength?
(A) Blue light   (B) Gamma ray
(C) X-ray   (D) Red light

74. FM radio broadcasts are a popular mode of communication today. What does FM stand for?
(A) Frequency Modulation
(B) Flexible Module
(C) Frequency mixing
(D) Flexible Multidimensional

75. India entered into space age by launching the satellite Aryabhata in the year?
(A) 1932   (B) 1965
(C) 1975   (D) 1990

76. What is the distance between the poles of the mirror and the focus?
(A) Principal axis   (B) Focal length
(C) Radius of curvature   (D) Center of curvature

77. Which physical amount is obtained from the ratio of momentum and the velocity?
(A) Velocity   (B) Acceleration
(C) Mass   (D) Angular velocity

78. Rocket works on which principle?
(A) Energy Conservation
(B) Bernoulli theorem
(C) Conservation of Momentum
(D) Law of thermodynamics

79. What is the measure by Cusec?
(A) Water drift   (B) Depth of water
(C) Volume of water   (D) Purity of water

80. Soldering of two metals is possible due to the property of-
(A) Diffusion   (B) Viscosity
(C) Surface tension   (D) Cohesion

81. The nucleus of an atom consists of-
(A) Electrons and neutrons
(B) Electrons and protons
(C) Protons and neutrons
(D) All of the above

82. The Potassium graphite and Calcium Graphite can be mostly used as which among the following?
(A) Moderators   (B) Semiconductors
(C) Superconductors   (D) Lubricants

83. The number of moles of solute present in 1 kg of a solvent is called its
(A) Molality   (B) Molarity
(C) Normality   (D) Formality

84. The most electronegative element among the following is.
(A) Sodium   (B) Bromine
(C) Fluorine   (D) Oxygen

85. Which method is used in general to obtain metal from its sulphide ore?
(A) Reduction   (B) Roasting
(C) Calcination   (D) Electrolysis

86. The metal used to recover copper from a solution of copper sulphate is _____.
(A) Na   (B) Ag
(C) Hg   (D) Fe

87. The number of d-electrons in Fe2+ (Z = 26) is not equal to that of.
(A) p-electrons in Ne
(B) s-electrons in Mg
(C) d-electrons in Fe
(D) p-electrons in CI

88. The metallurgical process in which a metal is obtained in a fused state is called.
(A) Smelting
(B) Roasting
(C) Calcinations
(D) Froth floatation

89. The molecules of which gas have highest speed?
(A) H2 at -73Oc
(B) CH4 at 300 K
(C) N2 at 1,027oC
(D) O2 at 0oC

90. The oldest rocks in the earth's crust that spewed out in volcanic eruptions during the earth early life and solidified are called ____.
(A) Granite
(B) Basalt
(C) Igneous rocks
(D) Sedimentary

91. The most commonly used bleaching agent is
(A) Alcohol
(B) Carbon dioxide
(C) Chlorine
(D) Sodium chlorine

92. The monomer of polythene is-
(A) Vinyl chloride
(B) Ethylene
(C) Ethyl alcohol
(D) None of these

93. The luster of a metal is due to _____.
(A) Its High density
(B) Its High polishing
(C) Its chemical inertness
(D) Presence of free electrons

94. The number of water molecules present in a drop of water (volume 0.0018 ml) at room temperature is _____.
(A) 1.568 x 103
(B) 6.023 x 1019
(C) 4.84 x 1017
(D) 6.023 x 1023

95. "Oil of mirbane" is the most common name of which among the following?
(A) Phenol
(B) Toluene
(C) Phenolphthalein
(D) Nitrobenzene

96. Consider the following statements:
1. Algae are of two types –Unicellular and Multicellular algae.
2. Unicellular algae are of two types Mobile and Non mobile algae.
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

97. Consider the following statements:
1. The motion in Mobile algae is due to flagella. eg- Chlamydomonas.
2. There is no motion in non mobile algae. eg- Chlorella.
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

98. The male sex accessory ducts include vasa efferent a, epididymis, vas deferens and _____.
(A) Cervix
(B) Rete Testis
(C) Glands
(D) Seminiferous Tubules

99. Consider the following statements:
1. Liver is the largest gland of human body.
2. Two parts of liver is called Caudate and Quadrate.
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

100. Consider the following statements:
1. Saprophytic organisms absorb liquid nutrients derived from rotten substances from the surface of the body.
2. Parasite receives their food from living bodies of other organisms.
Which of the statements given above is/are correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

101. Consider the following statements:
1. Gastric glands present in the wall of the stomach produce gastric juices.
2. It contains 97-99 percent water, 4-5 percent hydrochloric acid, pepsin, rennin, and gastric lipase enzyme.
Which of the statements given above is/are NOT correct?
(A) 1 only
(B) 2 only
(C) Both 1 and 2
(D) Neither 1 nor 2

102. Consider the following statements:
1. The reaction controlled by the enzyme is reversible.
2. They take part in both synthesis and Disintegration functions.
Which of the statements given above is/are correct?
(A) 1 only   (B) 2 only
(C) Both 1 and 2   (D) Neither 1 nor 2

103. Typhoid fever is cause by which of the following?
(A) Virus   (B) Bacteria
(C) Fungus   (D) Allergy

104. The colourful part of the Sun flower or Marigold plant is-
(A) Flower   (B) Inflorescence
(C) Fruit   (D) Seed

105. Which of the following cell organelles is found in a cell that is very active in protein synthesis?
(A) Mitochondria   (B) Chloroplast
(C) Lysosome   (D) Ribosome

106. Which of the following is the religious text of the Jews?
(A) Dhammapada   (B) Torah
(C) Sahib   (D) Tripatika

107. Who among the following pioneered Khilafat Movement?
(A) Mahatma Gandhi (B) Ali Brothers
(C) M.A. Jinnah   (D) Sir Syed Ahmed Khan

108. The National song of India, Vande Mataram was composed in _____ language.
(A) Pali   (B) Urdu
(C) Bengali   (D) Sanskrit

109. Who was the viceroy at the time of Jallianwala Bagh Massacre?
(A) Lord Curzon   (B) Lord Ripon
(C) Lord Chelmsford (D) Lord Canning

110. All India Kisan Sabha was founded in which year?
(A) 1936   (B) 1946
(C) 1956   (D) 1966

111. Who gave the slogan Inquilab Zindabad?
(A) Hasrat Mohani   (B) Ashfaqulla Khan
(C) Bhagat Singh   (D) Chandrashekhar Azad

112. The Sarvodaya Movement was started by
(A) Vinoba Bhave   (B) Bal Gangadhar Tilak
(C) Mahatma Gandhi (D) Vivekananda

113. Who conquered Sind in 712 AD?
(A) Arabs   (B) French
(C) Greeks   (D) Mongols

114. The Shiites believed that the Umayyad
(A) Should pray more (B) Should not be in power
(C) Got special treatment (D) Should rule

115. Which of the following was not a feature of Indus Valley Civilization?
(A) Use of Iron   (B) Town Planning
(C) Drainage system (D) Use of Bronze

116. Who started Shudhi Movement?
(A) Dayananda Saraswathy (B) Sri Aurobindo
(C) Swami Vivekananda   (D) Yashoda Bhai

117. What literary period is the beat generation aligned with?
(A) Postmodernism   (B) Naturalism
(C) Modernism   (D) Realism

118. Who attended all the three-round table conferences?
(A) M K Gandhi   (B) M M Malviya
(C) B R Ambedkar   (D) Annie Besant

119. Which among the following is the resting place of Morarji Desai?
(A) Abhay Ghat   (B) Ekta Sthal
(C) Shakti Sthal   (D) Vijay Ghat

120. The ancient goal of astrology was to-
(A) Make a more accurate model of the universe
(B) Predict human events
(C) Understand the origin of Earth
(D) Predict the passing of the seasons

121. Which Prime Minister was able to return to power after completing a full five year term, after Jawaharlal Nehru?
(A) Indira Gandhi (B) Lal Bahadur Shastri
(C) Rajiv Gandhi (D) Manmohan Singh

122. In Lal bahadur Shastri's cabinet, at what position was Indira Gandhi first appointed?
(A) Railway
(B) Defence
(C) Information and broadcasting
(D) Finance

123. In whose prime ministership was the Municipality Bill passed?
(A) Morarji Desai (B) Indira Gandhi
(C) Rajiv Gandhi (D) Lal Bahadur Shastri

124. When did the Right to Information Act came into force in India formally?
(A) 8 October 2005 (B) 12 October 2005
(C) 8 November 2005 (D) 12 November 2005

125. Consider the following statements:
1. The parliamentary government is also called the cabinet government or responsible government or government of Westminster.
2. It is popular in UK, Japan, and Canada etc.
Which of the statements given above is/are correct?
(A) 1 only (B) 2 only
(C) Both 1 and 2 (D) Neither 1 nor 2

126. Consider the following languages:
1. Sanskrit **2.** Tamil
3. Telugu
Which of the above has/have been declared as 'Classical Language / Languages' by the Government?
(A) 1 only (B) 1 and 2 only
(C) 2 and 3 only (D) 1, 2 and 3

127. Consider the following languages:
1. Kannada **2.** Malayalam
3. Odia
Which of the above has/have been declared as 'Classical Language / Languages' by the Government?
(A) 1 only (B) 1 and 2 only

(C) 2 and 3 only (D) 1, 2 and 3

128. How many members are there in the Vidhan Parishad of Uttar Pradesh?
(A) 540 (B) 100
(C) 210 (D) 404

129. Consider the following statements:
1. T.N. Seshan made it clear that no elections will be held without the voter ID after January 1, 1995.
2. The age of voting has been reduced from 21 to 18 years by the 61st Constitution Amendments Act, 1989.
Which of the statements given above is/are correct?
(A) 1 only (B) 2 only
(C) Both 1 and 2 (D) Neither 1 nor 2

130. Part-II of constitution of India deals with which of the following?
(A) The Union
(B) Citizenship
(C) Fundamental Rights
(D) Directive Principles of State Policy

131. The first Speaker against whom a motion of no-confidence was moved in the Lok Sabha was-
(A) Balram Jhakhar (B) G.V. Mavalankar
(C) Hukum Sing (D) K.S. Hegde

132. Who among the following was the first Tribal Speaker of Lok Sabha?
(A) G. V. Mavalankar (B) G.M.C. Balayogi
(C) Manohar Joshi (D) P.A. Sangama

133. Who among the following forms the following committee of the parliament?
1. Public Accounts Committee
2. Estimates Committee
(A) Speaker of the Lok Sabha
(B) Vice-President of India
(C) Minister of Parliamentary Affairs
(D) President of India

134. What is 'zero hour'?
(A) When the proposals of the opposition are raised.
(B) When matters of utmost importance are raised.

(C) Interval between the morning and afternoon sessions.

(D) When a Money Bill is introduced in Lok sabha.

135. After the general elections, the Protem Speaker is-
(A) Elected by the Lok Sabha.
(B) Appointed by the President of India.
(C) Appointed by the Chief Justice of the Supreme Court.
(D) The Seniormost member of the Lok Sabha.

136. Which one of the following is not a 'canon of taxation' according to Adam Smith?
(A) Canon certainty
(B) Canon of simplicity
(C) Canon of convenience
(D) Canon of economy

137. Who wrote the book 'Economic History of India'?
(A) Ramesh Chandra Dutt
(B) Pherozeshah Mehta
(C) Dada bhai naoroji
(D) Surendra Nath Banerjee

138. The headquarter of International Finance Corporation is situated at-
(A) New Delhi   (B) Washington D.C.
(C) New York   (D) London

139. When two goods are completely interchangeable, they are called?
(A) Perfect Substitutes
(B) Perfect Complements
(C) Giffen Goods
(D) Veblen Goods

140. Gadgil Committee is associated with which sector?
(A) Lead Banking System
(B) Reforms in Insurance Sector
(C) Income Distribution
(D) Tax Reforms

141. Which of the following is not matched correctly?
(A) Wanchoo Committee : Financial Inclusion
(B) J Reddy Committee: Reforms in Insurance Sector
(C) Mahalanobis Committee: Income Distribution

(D) Raja Chelliah Committee :Tax Reforms

142. Rourkela steel plant was developed in collaboration with which of the following countries?
(A) Russia   (B) Japan
(C) Germany   (D) United Kingdom

143. Rourkela steel plant is located in which state?
(A) Maharashtra   (B) Odisha
(C) Jharkhand   (D) Karnataka

144. Rourkela Steel Plant was established in which year?
(A) 1950   (B) 1955
(C) 1959   (D) 1964

145. Bhilai Steel Plant is situated in which state?
(A) Uttar Pradesh   (B) Jharkhand
(C) Chhattisgarh   (D) West Bengal

146. Select the correct match using the code given below:

Column-I	Column-II
A. Cellulose	1. Honey
B. Fructose	2. Sugarcane
C. Maltose	3. Cotton wool
D. Sucrose	4. Starch

A B C D
(A) 3 1 4 2   (B) 2 1 4 3
(C) 3 2 1 4   (D) 2 1 3 4

147. Acidity in the stomach involves
(A) A headache
(B) Stomach aches
(C) Asthma
(D) Due to Hormonal deficiency

148. Biological names are generally derived from which language?
(A) French   (B) Latin
(C) Mexican   (D) German

149. What Does Stand For DNA?
(A) Double nitrogen argon
(B) Dioxide nickel acid
(C) Deoxyribonucleic acid
(D) Deoxy nuclides acid

150. A few organisms can tolerate and thrive in a wide range of temperatures. Such organisms are called _____.

(A) Osmotic **(B)** Eurythermal
(C) Stenothermal **(D)** Hydrothermal

Solution

Part - A

Ans.1(D) To crush the teacher's head with a stone at night is the correct option.

Ans.2(D) The Gurukula system of learning Spanishis the correct option.

Ans.3(D) The teacher had seen him talking with other boys is the correct option.

Ans.4(B) To teach him as he was not paying attention is the correct option.

Ans.5(C) The weeping of Samrat is the correct.

Ans.6(B) The best student in the class.

Ans.7(B) how wrong am I to kill such a nice teacher is the correct option.

Ans.8(A) The Gurukula system of education was forced on Samrat.

Ans.9(A) In old days boys at young age were sent to teacher's house is the correct option.

Ans.10(A) Unleash means cause (a strong or violent force) to be released or become unrestrained.

Ans.11(B) MYRIAD means countless or extremely great in number.

Ans.12(A) GULLIBLE means easily persuaded to believe something; credulous.

Ans.13(C) SUFFICE means to meet or satisfy a need.

Ans.14(C) EMBRACE means hold (someone) closely in one's arms, especially as a sign of affection.

Ans.15(A) PECULIARITIES means a strange or unusual feature or habit.

Ans.16(C) DISSEMINATION means the action or fact of spreading something, especially information, widely.

Ans.17(D) Boats means talk with excessive pride and self- satisfaction about one's achievements, possessions, or abilities. Minimizes means reduce (something, especially something undesirable) to the smallest possible amount or degree.

Ans.18(B) Moderate means average in amount, intensity, quality, or degree. Intense means of extreme force, degree, or strength.

Ans.19(C) Irrelevant

Ans.20(A) Ridiculous

Ans.21(A) Mechanical

Ans.22(D) Anonymous

Ans.23(D) **Going places**
Meaning - Exhibiting talent and ability that will lead to a successful future.
Example - Rakesh was a performer at the school sports club. It was obvious that he was going places.

Ans.24(C) **Get a grip on yourself**
Meaning - Controlling your feelings to deal with a situation.
Example - Reema saw her jewelry and cash missing from the almirah. After the initial shock, she got a grip on herself and called up the police

Ans.25(B) **Hang on by fingernails**
Meaning - Continuing to do something in a very difficult situation.
Example - The market of watches has suffered a big loss after the arrival of mobile phones.
The survivors are just hanging on by their fingernails.

Ans.26(C) **Pull out all the stops**
Meaning - Doing everything you can to make something successful.
Example - The deadline for the project is fast arriving; we have pulled out all the stops for timely completion.

Ans.27(C) **Buckle down**
Meaning - Doing some hard work with determination and full attention.
Example - Getting through the exam for civil services is possible when you have buckled down yourself.

Ans.28(D) Broke means separate into pieces as a result of a blow, shock, or strain. Determine means cause (something) to occur in a particular way or to have a particular nature. Qualify means be entitled to a particular benefit or privilege by fulfilling a necessary condition.

Ans.29(B) Declaration means say something in a solemn and emphatic manner.

Demanded means an insistent and peremptory request, made as of right.

Ans.30(A) Various means different from one another; of different kinds or sorts. Curious means eager to know or learn something.

Ans.31(B) Adherence means attachment or commitment to a person, cause, or belief.

Ans.32(C) Expressing means convey (a thought or feeling) in words or by gestures and conduct.

Ans.33(D) Protected means keep safe from harm or injury.

Ans.34(D) no error.

Ans.35(A) use has in place of have.

Ans.36(B) use deprive of in place of deprive from. "Deprived of" is usually used in connection with a possession - either physical or abstract. For instance, "He was deprived of his cash by the robbers.

Ans.37(C) use ones in place of one's. The only times "ones" has no apostrophe are when it is being used to mean "examples" or "people" as in "ripe ones" or "loved ones," or in the informal arithmetical expression "the ones column."

Ans.38(A) Replace singh with sings.

Ans.39(C) Replace 'to' with 'across' as across is used for- from one side to the opposite side.

Ans.40(D) No error

Ans.41(A) Use 'with' in place of 'on' as 'on' is used to indicate certain condition whereas 'With' may indicate: together, involved, having, using, feeling, agreement, understanding.

Ans.42(A) Replace 'show' with 'shows' as a singular subject (she, Bill, car) takes a singular verb (is, goes, shines), whereas a plural subject takes a plural verb. Example: The list of items is/are on the desk. If you know that list is the subject, then you will choose is for the verb.

Ans.43(B) Replace 'unless' with 'until' as 'Unless' is used while specifying a condition simply and 'Until' is used when a condition that is related with time is to be specified.

Ans.44(B) Use 'against' in place of 'with' as against is used not to take the advantage or favour of somebody /something.

Ans.45(D) No error

Ans.46(C) Congratulated means give (someone) one's good wishes when something special or pleasant has happened to them.

Ans.47(A) Emerged means move out of or away from something and become visible.

Ans.48(A) Conducted means led by a guide; managed.

Ans.49(C) Prosperous means successful in material terms; flourishing financially.

Ans.50(D) Crack down means to take severe or stern measures.

Part - B

Ans.51(D) In vacuum the velocity of light is maximum or equal to the speed of light because in vacuum the index of refraction is 1 and no matter in it.

Ans.52(A) Average speed = $\dfrac{Distance\ travelled}{time\ taken}$

Let t_1 and t_2 be time taken by the car to go from X to Y and then from Y to X, respectively.

Then, $t_1 + t_2 = \dfrac{XY}{v_v} + \dfrac{XY}{vd}$

$= XY\left(\dfrac{v_v + v_d}{v_u v_d}\right)$

Total distance travelled = XY + XY = 2XY

$\therefore v_{av} = \dfrac{2XY}{XY\left(\dfrac{v_u + v_d}{v_u v_d}\right)} = \dfrac{2v_u v_d}{v_u + v_d}$

Ans.53(D) The magnitude of the electrostatic force of attraction or repulsion between two-point charges is directly proportional to the product of the magnitudes of charges and inversely proportional to the square of the distance between them.

Ans.54(C)

Ans.55(A) An electric generator/dynamo is based on Faraday's law of electromagnetic induction.

Ans.56(D) Solar Energy Generating Systems is currently the largest operational solar power plant in the world. It is located in the Mojave Desert of California, US.

Ans.57(C) The Kiel Canal is located at the root of the Jutland Peninsula near the border between Germany and Denmark. It is formally called the North Sea-Baltic Sea Canal and is ranked among the world's three major canals with the Suez and Panama Canals.

Ans.58(B) Bass Strait is a sea strait separating Tasmania from the Australian mainland, specifically the state of Victoria.

Ans.59(D) The industrial triangle is located at the western end of Italy's largest area of lowland, the North Italian Plain. The region is the richest area in Italy. The cities of Milan, Turin and Genoa are at the three corners of the triangle.

Ans.60(A) Andaman and Nicobar islands are submerged parts of mountain range called arakan yoma.

Ans.61(A) Deserts cover 20 to 33% of the Earth's land surface, and can be found in the tropics, at the poles, and in between.

Ans.62(B)

Ans.63(B) A plateau which is enclosed by mountain ranges is known as an intermontane plateau. The Plateau of Tibet and the Plateau of Mongolia are the two intermontane plateaus in Asia.

Ans.64(A) Istanbul's European part is separated from its Asian part by the Bosphorus strait, a 31-km-long waterway that connects the Black Sea with the Sea of Marmara, and forms a natural boundary between the two continents.

Ans.65(A) Death Valley National Park is an American national park that straddles the California—Nevada border, east of the Sierra Nevada.

Ans.66(C) gravitational forces are inversely proportional to the square of the distance between the two bodies.

Ans.67(B) A ray of white light strikes the surface of an object. If all the colours are reflected the surface would appear white :

Ans.68(B) The core has positive charge, the electrons have negative charge. When you are rubbing the glass rod with the silk cloth, electrons are stripped away from the atoms in the glass and transferred to the silk cloth. This leaves the glass rod with more positive than negative charge, so you get a net positive charge.

Ans.69(A) Concept of Centripetal Force: A force that acts on a body that performs circular motion and acts along the radius of the circular path and is directed towards the center of the path known as the centripetal force.

Ans.70(B) The SI unit of electric current is ampere, which is the flow of electric charge across a surface at a rate of one coupling per second.

Ans.71(D) Like other energy, its unit is also joules but it is also expressed in calories.

Ans.72(A) Steam produces more severe burns than boiling water because the LATENT HEAT of steam is greater than water. It means that steam has greater heat energy than boiling water which causes more severe burns.

Ans.73(D) As the full spectrum of visible light travels through a prism, the wavelengths separate into the colors of the rainbow because each color is a different wavelength. Violet has the shortest wavelength, at around 380 nanometers, and red has the longest wavelength, at around 700 nanometers.

Ans.74(A) Frequency modulation or FM is a form of modulation which conveys information by varying the frequency of a carrier wave

Ans.75(C) Aryabhata was India's first satellite, named after the famous Indian astronomer of the same name. It was launched on 19 April 1975 from Kapustin Yar, a Russian rocket launch and development site in Astrakhan Oblast using a Kosmos-3M launch vehicle. It was built by the ISRO.

Ans.76(B) The distance between Pole and focus is also known as focal length.

Ans.77(C) We know, Momentum = mass * velocity; So Momentum / Velocity = Mass

Ans.78(C) Rocket works on the conservation of momentum. In a rocket, the fuel burns and produces gas at high temperature.

Ans.79(A) It is not possible to measure a cusec in liters, because cusec is not a measurement of water, but a unit of water flow.

Ans.80(D) Soldering is the process of joining two metals by the use of a solder alloy, and it is one of the oldest known joining techniques. It is possible because of the property of cohesion,

Ans.81(C) The 'Potassium graphite' and 'Calcium Graphite' can be used as Superconductors.

Ans.82(C) The 'Potassium graphite' and 'Calcium Graphite' can be used as Superconductors. These substances

conduct electricity so freely that there is absolutely no obstruction to the flow of free charges.

Ans.83(B) The number of moles of solute present in 1 litre of a solution is called its molarity.

Ans.84(C) Fluorine is the most electro negative element because it has 5 electrons in it's 2P shell. The optimal electron configuration of the 2P orbital contains 6 electrons, so since Fluorine is so close to ideal electron configuration, the electrons are held very tightly to the nucleus.

Ans.85(A) Reduction method is used in general to obtain metal from its sulphide ore.

Ans.86(D) Iron is used to recover copper from copper sulphate.

Ans.87(D)

Ans.88(A) The metallurgical process in which a metal is obtained in a fused state is called Smelting.

Ans.89(A) A molecule is a particle made up of two or more atoms that are chemically bonded together; the number of atomic nuclei making up a molecule is a determinate number. highest speed gas H2 at -73Oc

Ans.90(C) Is one of the three main rock types, the others being sedimentary and metamorphic rock. Igneous rock is formed through the cooling and solidification of magma or lava. Igneous rock may form with or without crystallization, either below the surface as intrusive (plutonic) rocks or on the surface as extrusive (volcanic) rocks. This magma can be derived from partial melts of pre-existing rocks in either a planet's mantle or crust.

Ans.91(C) Bleaching agents are compounds which are used to remove color from substances such as textiles. A bleaching agent is a material that lightens or whitens a substrate through the chemical reaction. The bleaching reactions usually involve oxidative or reductive processes that degrade colour.

Ans.92(B) Polythene, or polyethylene as it is known in the US, is made from the monomer ethylene. So, Monomer of Polythene Is Monomer Ethylene.

Ans.93(D) Metals are lustrous because of the free electrons they have. The free electrons can move freely in the metal causing any light incident on them to get reflected back. This reflection is specular reflection rather than diffused and thus the metal surface appears shiny or lustrous.

Ans.94(B) One drop of water has the volume 0.0018 mL. The mass is 0.0018 g. The molar mass of water (H2O) is 18.0 grams/mol (1.008 + 1.008 + 16.0). No of water molecules in 1 drop = 0.0001 × 6.022 ×1023 = 6.022×1019 water molecules.

Ans.95(D) "Oil of mirbane" is the most common name of Nitrobenzene.

Ans.96(C) Included organisms range from unicellular microalgae, such as Chlorella and the diatoms, to multicellular forms, such as the giant kelp.

Ans.97(C) Chlamydomonas is a genus of green algae consisting of about 325 species all unicellular flagellates, found in stagnant water and on damp soil, in freshwater, seawater, and even in snow as "snow algae".
Chlorella is a genus of single-celled green algae belonging to the division Chlorophyta.

Ans.98(B) The rete testis is an anastomosing network of delicate tubules located in the hilum of the testicle that carries sperm from the seminiferous tubules to the efferent ducts.

Ans.99(C) Liver is the largest gland in human body. It carries out many functions such as secretion of bile juices for decomposition of lipids and vitamins, preparation of proteins for blood plasma that enables blood clotting and also detoxification.

Ans.100(C) Saprophytes such as many types of fungi and bacteria, obtain their food in liquid form from the remains of dead organisms. Parasites such as tapeworms and mosquitoes live on in another living organism from which they obtain food.

Ans.101(C) Gastric juice is a digestive fluid formed in the stomach and is composed of hydrochloric acid (HCl), potassium chloride (KCl), and sodium chloride (NaCl). The pH value of gastric juice is 1.5 to 3.5.

Ans.102(C) Most enzyme reactions are reversible, an enzyme can synthesize and decompose molecules. Enzymes reaction rate is dependable on several factors: pH, temperature.

Ans.103(B) Typhoid fever is caused by Salmonella enterica serotype Typhi bacteria. Typhoid fever is contracted by the ingestion of contaminated food or water.

Ans.104(A) Flower

Ans.105(D) Ribosomes are the organelles responsible for protein translation and are composed of ribosomal RNA (rRNA) and proteins. Some ribosomes are found in the cytoplasm, a gel-like substance that organelles float in and some are found in the rough endoplasmic reticulum.

Ans.106(B) The Torah is part of the larger text known as the Tanakh or the Hebrew Bible, and supplemental oral tradition represented by later texts such as the Midrash and the Talmud. With between 14.5 and 17.4 million adherents worldwide, Judaism is the tenth largest religion in the world.

Ans.107(B) The Khilafat movement, also known as the Indian Muslim movement, was a pan-Islamist political protest campaign launched by Muslims of British India led by Shaukat Ali, Mohammad Ali Jauhar and Abul Kalam.

Ans.108(D) The song Vande Mataram, composed in Sanskrit by Bankimchandra Chatterji, was a source of inspiration to the people in their struggle for freedom. The first political occasion when it was sung was the 1896 session of the Indian National Congress.

Ans.109(C) Lord Chelmsford was the Viceroy of India when Jallianwala Bagh Massacre took place on April 13, 1919.

Ans.110(A) All these radical developments on the peasant front culminated in the formation of the All India Kisan Sabha (AIKS) at the Lucknow session of the Indian National Congress in April 1936 with Swami Sahajanand Saraswati elected as its first President.

Ans.111(A) This slogan was coined by the Urdu poet, Indian freedom fighter and a Leader of Indian National Congress Maulana Hasrat Mohani in 1921. It was popularized by Bhagat Singh (1907 - 1931) during the late 1920s through his speeches and writings.

Ans.112(A) The Sarvodaya Movement was started by Vinoba Bhave on 18 April 1951 at Pochampally village in Nalgonda district who was directly influenced by Gandhi.

Ans.113(A) Muhammad Bin Qasim first captured Debal, . At Rohri he was met by Dahir's forces. Dahir died in the battle, his forces were defeated and Muhammad bin Qasim took control of Sind. Mohammad Bin Qasim entered Daibul in 712 AD.

Ans.114(A)

Ans.115(A) Town planning, Drainage system and Use of Bronze are the features of Indus Valley Civilization. Use of Iron was not the feature of this.

Ans.116(A) The socio-political movement, derived from ancient rite of shuddhikaran, or purification was started by the Arya Samaj, and its founder Swami Dayanand Saraswati and his followers like Swami Shraddhanand, who also worked on the Sangathan consolidation aspect of Hinduism, in North India,

Ans.117(A) The Beat Generation was a literary movement during the late 1940's and the 1950's. The movement was started by a group of authors who explored American culture and politics in the works during the post-war era. it was aligned with the Postmodern movement.

Ans.118(A) B.R. Ambedkar and Tej Bahadur Sapru took part in all the three round table conferences. Mahatma Gandhi took part in Second Round Table Conference.

Ans.119(A) Morarji Desai was the Prime Minister of India who led the country's first non-Congress government. and Abhay Ghat is resting place of Morarji Desai

Ans.120(B) The ancient goal of astrology was to predict human events.

Ans.121(D) Manmohan Singh was also the first prime minister since Jawaharlal Nehru to be re-elected after completing a full five-year term.

Ans.122(C) Indira gandhi was appointed as a member of the Rajya Sabha (upper house) and latter she became a member of Lal

Bahadur Shastri's cabinet as Minister of Information and Broadcasting.

Ans.123(C) Nagar palikas are also a form of local self-government, entrusted with some duties and responsibilities, as enshrined and guided upon by the Constitutional (74th Amendment) Act,1992.

Ans.124(B) 2005 was a momentous year for right to information in India because it saw the enactment of a national right to information law. The Central Act was passed by the Indian Parliament on 12 May 2005 and received Presidential assent on 15 June 2005. It came into force on 12 October 2005.

Ans.125(C) The Parliamentary Government is also known as cabinet government or Responsible Government responsible and Westminster forms of government and is prevalent in Britain, Japan Canada, India and other countries.

Ans.126(D) Classical Languages declared by the government are: Sanskrit, Tamil, Telugu, Kannada, Malayalam, and Odia.

Ans.127(D) Classical Languages declared by the government are: Sanskrit, Tamil, Telugu, Kannada, Malayalam, and Odia.

Ans.128(B) Uttar Pradesh is one of the six states in India, where the state legislature is bicameral, comprising two houses: the Vidhan Sabha (Legislative Assembly) and the Vidhan Parishad (Legislative Council). The Vidhan Parishad is a permanent House, consisting of 100 members.

Ans.129(C) Seshan announced that if voter identity cards were not issued, no elections would be held after January 1, 1995. A The Sixty-first Amendment of the Constitution of India, officially known as The Constitution (Sixty- first Amendment) Act, 1988, lowered the voting age of elections to the Lok Sabha and to the Legislative Assemblies of States from 21 years to 18 years.

Ans.130(B) Part II of the Constitution of India (Articles 5-11) deals with the Citizenship of India. Article 5 speaks about citizenship of India at the commencement of the Constitution. Article 11 gave powers to the Parliament of India to regulate the right of citizenship by law.

Ans.131(B) The first speaker against whom a motion of non confidence was moved in the Lok Sabha was G.V. Mavalankar.

Ans.132(D) Purno Agitok Sangma was an Indian politician who served as the First Tribal Speaker of the Lok Sabha from 1996 to 1998 and Chief Minister of Meghalaya from 1988 to 1990.

Ans.133(A) The Public Accounts Committee consists of not more than twenty-two members, fifteen elected by Lok Sabha, the lower house of the Parliament, and not more than seven members of Rajya Sabha, the upper house of the Parliament. The members are elected every year from amongst its members of respective houses according to the principle of proportional representation by means of single transferable vote. The chairperson is appointed by the Lok Sabha speaker. The term of office of the members is one year.

The Estimates committee consists of thirty members, all elected from Lok Sabha, the lower house of the Parliament of India. The members are elected every year from amongst its members of the Lok Sabha, according to the principle of proportional representation by means of single transferable vote. The chairperson is appointed by the Lok Sabha speaker.

Ans.134(B) Zero Hour, the time of a sitting session of India's Lok Sabha immediately following the Question Hour. When matters of utmost importance are raised.

Ans.135(B) After a general election and the formation of a new government, a list of senior Lok Sabha members prepared by the Legislative Section is submitted to the Minister of Parliamentary Affairs, who selects a protem speaker. The appointment has to be approved by the President.

Ans.136(B) It argues that the tax system should be simple; otherwise there would be confusion and, worse still, corruption. During the war and after, certain taxes, e.g., on sale of cloth and lather essential

supplies in India resulted in corruption mainly because they lacked in simplicity.

Ans.137(A) Romesh Chunder Dutt (13 August 1848 – 30 November 1909) was an Indian civil servant, economic historian, writer, and translator of Ramayana and Mahabharata. he wrote the book 'Economic History of India

Ans.138(B) The International Finance Corporation (IFC) is an organization established in 1956 by the World Bank Group with an aim of reducing poverty and creating jobs in developing countries through the development of private enterprises. The IFC has 184 countries as its members and its headquarter is located in Washington, D.C.

Ans.139(A) A perfect substitute is a situation where two goods are viewed as identical. Perfect substitutes are commodities such that it is impossible to build a brand whereby customers prefer your product. Producers of a perfect substitute must except a market price and typically have no influence on the price.

Ans.140(A) The Lead Bank Scheme was introduced in 1969 to provide lead roles to individual banks (both in public sector and private sector) for the districts allotted to them. The Lead Bank Scheme was introduced by RBI on the basis of the recommendations of both the Gadgil Study Group and Banker's Committee.

Ans.141(A) Wanchoo Committee Report, provides for settlement of huge tax disputes and immunity from criminal proceedings by a Commission to be constituted by the Central Government when approached without...chapter in action and its fall-out may benefit the nation by information about who the true beneficiaries of this legislation.

Ans.142(C) Rourkela Steel Plant (RSP), in Rourkela, Odisha is the first integrated steel plant in the public sector in India. It was set up with West Germany collaboration with an installed capacity of 1 million tonnes in the 1960s. It is operated by Steel Authority of India.

Ans.143(B) Rourkela Steel Plant (RSP), in Rourkela, Odisha is the first integrated steel plant in the public sector in India. It was set up with West Germany collaboration with an installed capacity of 1 million tonnes in the 1960s.

Ans.144(B) One of the largest steel plants of the Steel Authority of India Limited is situated here. It is surrounded by a range of hills and encircled by rivers. It is situated in an area with the richest deposit of mineral wealth in Orissa. It came into prominence in 1955, with the establishment of the Rourkela Steel Plant.

Ans.145(C) The Bhilai Steel Plant (BSP), located in Bhilai, in the Indian state of Chhattisgarh, is India's first and main producer of steel rails, as well as a major producer of wide steel plates and other steel products.

Ans.146(A) Cellulose - Cotton wool
Fructose - Honey
Maltose - Sugarcane
Sucros - Starch

Ans.147(B) The highly acidic environment in the stomach causes proteins from food to lose their characteristic folded structure.

Ans.148(B) Biological names are generally derived from Latin language.

Ans.149(C) Deoxyribonucleic acid (DNA)

Ans.150(B) A few organisms can tolerate and thrive in a wide range of temperatures (they are called eurythermal), but, a vast majority of them are restricted to a narrow range of temperatures (such organisms are called stenothermal).

"People Who Are Crazy Enough To Think They Can Change The World, Are The Ones Who Do."

"Failure Will Never Overtake Me If My Determination To Succeed Is Strong Enough."

SSB CORNER

Word Association Test

Word Association Test is a test that is conducted under the Psychological testing series. This test is conducted for the candidates who have successfully passed the screening test. This test is very important as it reflects the way you think and brings out your personality.

In this test, the candidates are shown 60 words, one after the other and are expected to make sentences using those words. Your sentence can make use of any form of the word. For example, if the word is run, then your sentence can use any form of the word run as run, ran, running, etc. For every word, a time of around 15 seconds are given after which, the next word is shown. You have to see the word and write a sentence within those thirty seconds. As you are bound by time, so you cannot mask your original responses. Hence, practice is highly required for that test. The difficulty of the words is not very high. Remember, the test is to test your personality and your behavior, not your vocabulary. However, you need to have a good vocabulary, as it helps in the other parts of the interview.

- WAT helps psychologist to understand the real behavior of the candidate under pressure.
- WAT totally depends on how you react to words in your real life.
- A better introspection will help you to know your real personality, your interests, your fears and your weaknesses. By knowing your weaknesses one can work on that and can change them in one's strengths. It will help you in changing the image of a word in your mind {explained later}.
- Write sentences from human point of view.

Assessment of Officer Like Qualities (OLQs)

Factor
Planning & Organising
1. Effective Intelligence
2. Reasoning Ability
3. Organising Ability
4. Power of Expression

Factor
Social Effectiveness
1. Initiative
2. Self Confidence
3. Speed of Decision
4. Ability to Influence the Group
5. Liveliness

Factor
Social Adjustment
1. Social Adaptability
2. Cooperation
3. Sense of Responsibility

Factor
Dynamic
1. Determination
2. Courage
3. Stamina

Points worth bearing in mind:

1. Don't ever make negative sentences. Always make a sentence that is positive in the meaning, even when there is a word which conveys a negative sense. For example: the word disturb conveys a negative meaning in itself. One should not make sentences like 'Ram disturbed his sister 'or any such negative sentence. You should make positive sentence like 'Nothing disturbs the brave' and other such sentences which are positive. Some examples for you to practice are: cannot, confuse, bad, cry, defeat, fearful, exploitation, bluff, lonely, Untouchability etc.

2. Do not use 'I'. Use of such words should be avoided. For example: for the word friend, don't make sentence like I am very Friendly or I have many friends. Instead, you should make sentences like, one must choose friends carefully, or friends are trustworthy, etc. Excess use of 'I' can reflect that the person is self-centered which leaves a negative impact.

3. Don't use famous Idioms or phrases. For example: for the word spoil, try not to write famous lines like 'too many cooks spoil the broth'. But make simple sentences like freedom without restriction spoils a child. Use of such famous lines shows your lack of imagination and thinking capacity.

4. Also one should avoid sentences that are preaching or very bookish. Also negative sentences should be highly avoided.

5. Positive sentences should be written. The sentences should always be written in legitimate handwriting. As time is short, so you have to write fast. Practicing only would help in that scenario.

6. Do not write sentences for words whose meaning is not clear to you. Remember, you do not have to necessarily attempt all the words. Try to attempt near fifty to fifty-five words. You must attempt more than forty-five words.

7. Write sentences which are based on facts and recent happenings. For example: for the word bomb, you can write that 'City of Mumbai has faced several bomb blasts in the past'.

8. The famous saying goes as 'Honesty is the best policy'. Well, in this case you have to be honest and write sentences which come to your mind first. Although, in fifteen seconds you cannot mask your natural responses. So, practice as much as you can. Start by collecting words for the Word Association Test from the internet. Next make sentences based on them in the given fifteen seconds of time limit. After you have done it for sixty words, check your response thoroughly and try to see any mistake that you might have made. While practicing again, make sure you do not repeat those mistakes again. Some examples to practice are:

- Consider
- Rose
- Create
- Brain
- Ability
- Academy
- Faith
- Fellow
- Leader
- Attach
- Axe
- Kill
- Infantry
- Defence
- High
- Cheer
- Faith
- Exercise
- Important
- Love
- Beware
- Ability
- Beat
- Love
- Sacrifice
- Nation
- Books
- Practice.
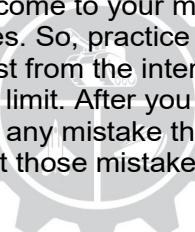
How to Prepare for WAT

WAT is a partly guided, subconscious and also the test of your imagination. It is not a sentence making test. This test evaluates your quality of ideas associated with all the 60 words shown on the screen.

Detailed Schedule of NDA **5 Days SSB**

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
Personal information questionnaire Briefing by GTO	Officer Intelligence Rating Test Thematic Perception Test Picture Perception Description Test Word Association Test	Group discussion, Group planing, Progressive group tasks,	Individual obstacles, Group obstacles race	Conference, Result Declaration

SSB Interview Preparation at Chandigarh Academy

Points to remember while attempting WAT

1. First of all look at the words carefully as it will be shown only for 15 seconds. If you'll miss even a single word, you'll miss the whole sequence.
2. As you'll see the word your mind will form an idea, now it depends on your personality to make a positive idea or a negative idea.
3. Then write a sentence on the idea you have formed. Make sure your writing is legible.
4. There are no negative words, if you'll look them with a positive approach. Words will work in your favor automatically.
5. Do not use too many sentence on defence forces.
6. Try to give rare piece of information.
7. If you leave a word in between, then please leave the word according to serial to maintain the similarity.
8. If you do not complete the sentence, try your best to write something.
9. DO not give one word response. If you do not complete the sentence, try your best to write something.
10. DO not give one word response.

Dos and Don'ts of Word Association Test

WAT Word Association Test is a critical exercise. It lets the psychologist analyze by just a few sentences! Hence you must know how crucial it is to give the correct responses in this test. So here is a guide on some dos and don'ts of this test.

Dos and Don'ts of WAT

1. Do write your natural response.
2. Don't mug up sentences on certain words, and write responses then and there.
3. Do write your good thinking, or your positive thinking.
4. Don't write simple observations. E.g. - Sleep-A dog is sleeping. (Wrong response). Sleep refreshes us (Correct Response).
5. Write the effect of the word. E.g.: War- War causes destruction.
6. Don't write idioms, phrases, quotations, universal truths. They show lack of original thoughts.
7. Write a meaningful sentence.
8. Don't give negative response or any word, try remaining positive as much as you can. If a negative word comes try to write something positive for that as well.
9. Write sentences from human point of view.
10. Don't use the word "I or Me" much.
11. Don't write the word in the answer sheet.
12. Maintain as far as possible a good hand-writing.
13. Attempt at least 45-50 words.
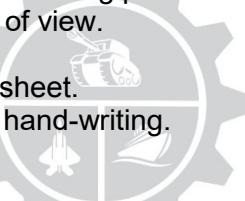
WAT Word Association Test is meant to put you under pressure and squeeze the real you out of you! You need practice to do well in WAT. Several PPT's and words are present online and also on SSBCrack you can take them and write your responses keeping the given points in mind.

How to tackle a Negative Word in WAT

When your reaction to a negative word is positive, it will be easy for you to make a sentence from the word. The tip is to form a positive idea from a negative word shown in the slide.

For example- Defeat: - Now when we hear defeat, an image of failure comes to our mind. It is natural but a little practice will help you to change the image out of your mind.

1. Sentence- A brave man defeats his weakness.
2. Danger- Indian defence is always ready for dangers
3. Weapon- weapon is used for protection.
4. Hijack- commandos are trained for
5. Difficult-difficulties are solved by patience.
6. Fear- winners bravely face his fear.
7. Aggressive- A leader patiently deals with his team.

Do not use readymade sentence. This will break the pattern of loop created by psychologist.

Practice writing negative words, it will help you in changing the image of those words in your mind.

25 Most Common Words in WAT:

25 Most Common Words Comes in WAT:

1. Dark
2. Beat
3. Alone
4. Organize
5. Heat
6. Ability
7. Beware
8. Bolt
9. Boast
10. Sputnik
11. Award
12. Power
13. Defeat
14. Lure
15. Behave
16. Cooperate
17. Duty
18. Discipline
19. Lead
20. Problem
21. Wisdom
22. Noble
23. Luck
24. Fear
25. Government

These are few words which are common in most of the WAT conducted in different SSB Boards. You can write the answer for these words in the comment box below. After few days best selected responses will be posted against each words.

How to Tackle Word Association Test [WAT] in Psychology Test

A candidate. It brings out attitudes, thoughts, desires, feelings and even negative aspects of one's personality. The words are easy and of day-to-day usage. Time given to the candidates is so short that they have to write down the very first thought that comes after seeing the word. The psychologists analyses the personality traits, attitudes and feelings on the basis of these natural reactions of the candidates to specific words.

There can be no readymade solutions to the word association test. However, with a little bit of practice the candidates can choose correct sentence. The pessimistic, negative, pervert and counter-productive feelings must be avoided whereas positive feelings of success, honesty, respectfulness, uprightness, optimism, humanism, etc. should be highlighted. For example, the word "failure", can be used as "Failure cannot always be avoided", or "Failures are the pillars of success". Whereas the former sentence depicts pessimism and defeat, the latter sentence shows how a negative word can also be used in a positive manner. On similar lines the candidates must prepare himself beforehand for words like defeat, death, disease wrong, etc. It must be ensured that the sentences used are small and convey some positive aspect of one's psyche. Due care must be taken to ensure that the sentences do not depict the feeling of fear, insecurity, anxiety, cowardice, etc. To do well in this test the candidates must practice with several sets of words and do the self-appraisal.

1. WAR
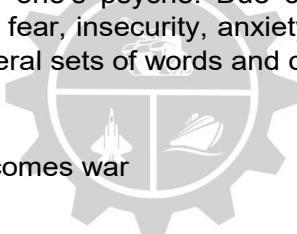
Candidate's reactions: a) Peace overcomes war

b) War is destruction

c) I hate war

d) War means bloodshed

Suggestion: Love Peace, but be prepared for war

2. PEACE

Candidate: a) Everyone loves peace (Acceptable)

b) I love peace

c) Peace brings Progress (Very Good)

3. WORK

Candidate: a) work is worship

b) Hard work pays (Acceptable)

c) Hard work leads to success (Very Good)

d) Work while you work play while you play (Avoid using proverbs)

4. DEFEAT

Candidate a) Defeat the enemy

b) Defeat the defeat

c) Defeat -don't get upset

d) Don't get depressed by defeats (Acceptable)

Suggestion: a) Defeat teaches us lessons.

b) Analyze causes of defeat to succeed

5. COUNTRY

Candidate: a) I Love my Country (Good)

b) Serving our country is Nobel (Acceptable)

C) it's our duty to safeguard our country (A)

d) Country first self-next

6. HOME Suggestion: Home teaches us Manners.

These are the best **WAT** responses and answers which can be used by candidates in SSB. These are the most common **word association test examples** which you might face in SSB interview for Army, Navy and Air Force.

Here are some examples for WAT:

- Choice: Choosing a correct profession leads to happiness.
- Co-Education: Co-Education teaches adaptability with the opposite gender.
- Champion: India won the World Cup.
- Deteriorate: Indo-Pak relations are deteriorating with time.
- Cure: Ayurveda cures without any side effects.
- Cooperate: Team work is all about cooperating with each other.
- Clever: Being extra clever will annoy friends.
- Disease: Hygiene prevents spread of diseases.
- Demand: People of Telangana are demanding a separate state.
- Friend: Company of friends gives immense joy.
- Compel: Indian students are compelled to choose Engineering or Medical professions.
- Doctor: Doctor is like a God in human form.
- Forest: Deforestation is causing Global Warming.
- Home: Home is a heaven on earth.
- Crowd: Cricket attracts the crowd in India.
- Earn: Earning money through hard work is very satisfying.
- Instruction: It is important to read instruction before starting the exam.
- Lie: Telling lie is a bad habit.
- Exercise: Regular exercise is good for health.
- Patriotism: Soldiers inspire patriotism in every Indian.
- Live: World Cup Football will be telecasted live on Sony Pix.
- Fearful: Nothing is Fearful for a brave person.
- Progress: Hard work leads to progress in life.
- Respect: Indian Children respect their elders.
- Bank: Central Bank of the country issues the currency notes.
- Rude: rude behavior is never liked by anyone.
- Team: Team's aim is more important than an individual's aim.
- Future: Children are the future of a country.
- Book: Book is the best friend.
- Get: Working hard is important to get success.
- Easy- Proper planning makes a task easy to execute.
- Ahead- India's future is bright ahead.
- Sacrifice-A team player sacrifice his interests for his team.

- Happy- Family and friends gives us joy and happiness.
- Discussion- Discussion leads to understand others better.
- Satisfaction- Working for country gives utmost satisfaction.
- Encourage- Team player always encourages his team.
- System-leader makes a workable and systematic plan.
- Quick- Spontaneous people quickly adapt things.
- Judge- P.sathasivam is the Chief justice of India.
- Women- women are leading our country from the front.
- Love- Love for country gives strength and optimism.
- Difficulty- Difficulty serves as an opportunity for a brave man.
- Duty- Working for the welfare and safety of the country is a duty.
- Idea- Different ideas help us to find the solution in a short interval of time.
- Books- Eleanor Catton won 2013 booker prize
- Future- Hard work in present gives the best in future.
- Music – Music gives peace, dedication and determination.
- Error- Errors are removed by revaluation.
- Work-Hard work, determination and optimism lead us to our aims.
- Justice – President appoints the chief justice of India.
- Charity- Altruist people give charity and empower others.
- Kindness- Altruists people are Kind and generous.
- Self-control- Self-control is the character of a leader.
- Educate- Education aware and empower us.
- Medicine-Medicines save lives.
- Exercise – Exercise keeps us physically and mentally fit.
- Poetry- Poetry fills us with Zeal and enthusiasm.
- Hard work- A winner always put hard work and dedication in a work.
- Blood- Blood donation camps help collecting blood.
- Face- A Brave man always wins over his fear.
- Snake- Snake poison is used for the manufacturing of medicines.
- Luck- Luck comes with hard work.
- Won- Babur won the 1st battle of Panipat.
- Company- Proper coordination leads a company to greater heights.
- Attempts- Continuous attempts lead us to our aim.
- Knowledge- Knowledge becomes the foundation of a great future.
- Honey- Honey is the outcome of hard work.
- Tackle- Team coordination helps in tackling a situation.
- Punctuality- Punctuality is the character of winners.
- Reaction- Reactions helps to understand others better.
- Offer- A friendly person always offer help.
- Drive- Passion, dedication and determination drives us to our goal.

- Atom: India uses her atomic energy for peace purpose.
  - Future source of energy.
- Assist: A good leader assists his seniors with due respect.
  - India assisted UNO whenever asked.
- Agree: Agreement is the result of mutual understanding.
  - Defence agreement with USA shows India's growing status.
- Affection: Prevails in close-knit family.
  - Love and affection goes hand in hand.
- Accept: Strong people accept challenge willingly.
- Attack: On right time with good strategy wins battle.
- Afraid: Brave people are never afraid of adversity.
- Alone: When alone, books give good company.
  - Youth alone brings changes in society
- Admire: Admiring others for good deeds bring them closer to us.

- o India's progress in space science/BPO is admirable.
- Active: Sports keep body active.
  - o Inspiration activates people to do well.
  - o Youth takes active part in nation building.
- Avoid: Proper planning avoids suffering.
- Attempt: Serious attempts ensure good results.
  - o Determined people attempt till the goal is achieved.
- Army: The backbone of a nation's security.
  - o Symbol of discipline.
- Accomplish: Capt. Batra accomplished his mission bravely.
  - o Perseverance accomplishes success.
- Appeal: Human right groups appeal against injustice.
  - o Indians have right to appeal directly in Supreme Court.
- Abuse: US army committed human abuse in Iraq.
- Annoy: Mature people keep everyone happy.
- Award: Hard work is an award itself.
- Accident: Implementation of traffic rules avoids accidents.
  - o Konkan Railway uses anti-collision device to avoid accidents.
- Against: Government is working against Polio and Hepatitis B.
  - o Government works against the odds to make nation develop.
- Average: Average People rise to glory with continuous efforts.
- Ask: India forces always help UNO whenever asked for.
- Approach: Positive approach always gives positive results.
- Aloof: Company of friends removes aloofness.
- Aid: The whole world provided aid to Tsunami victims.
- Argument: Reasonable argument promotes good ideas.
- Architect: Architecture is the game of Imagination.
- Ambassador: Pt. Nehru was an ambassador of peace.
  - o Mother Teresa was an ambassador of charity.
- Again: Practicing again and again improves performance.
- All: All citizens are responsible formation.
- Aware: Awareness minimizes the cases of AIDS/Polio.
- Adult: Education helps to remove orthodoxy from society.
- Boredom: Removed by engaging experience.
  - o Remove by reading/talking to friends.
- Bachelor: Is the state of gaining experience.
- Ballot: Plays important role in democracy.
- Barrier: Large population is a barrier in development.
- Beauty: Nature is bestowed with beauty.
  - o Nature beauty refreshes mind and body.
- Bride: Taking and giving bribe is moral crime.
- Books: Power house of knowledge.
  - o Are good companions.
- Behave: Good behaviors shows maturity.
  - o Good behaviors reflect good upbringing.
- Break: Continuous efforts help to break records.
- Blood: Saves life.
  - o O+ is universal donor.
  - o Patriots nurture national interest with their blood.
- Begin: A good beginning entails a good end.
- Beggar: Social workers work for beggar's upliftment.
  - o Relations are based on loyalty.
- Bed: After hard work; be gives relief.
- Bad: Life if full of good things
- Brave: Brave men build society.

- Borrow: USA is borrowing good brains from India.
  - Pak borrowed missiles from China/North Korea.
- Beat: Indian Scientists beat the world in IT.
- Burden: Cheerfulness eases the burden.
  - Good citizens burden their responsibility willingly.
- Bilateral: India is improving bilateral relations with Pak/China.
- Blame: US blamed Saddam to have WMDs.
  - Weak always blames others.
- Bomb: Vast population acts as a bomb.
  - Bombing on Hiroshima/Nagasaki was inhuman act.
- Calamity: Tsunami was great calamity.
  - Effectively disaster management minimizes the harm in a calamity.
- Calm: Calm and cool people win other's heart.
  - Calm and cool mind brings better results.
- Careful: Careful preparation keeps errors away.
- Compel: Compelling reasons win a lot of supports.
- Captain: Motivates his men/leads by example.
- Capable: Continuous efforts increase capability.
- Congratulation: Congratulating others on their success motivates them to do well again.
- Company: Of friends gives pleasure.
  - Of good people gives good habits.
- Cheat: Cheating does not give long-lasting results.
  - Cheaters need strict punishment.
- Clean: Systems serve better.
- Cult: India is a home of different cults and creeds.
- Culprit: Is brought to justice by law.
- Cruel: Cruelty of Hitler led to the Second World War.
  - Cruelty of Saddam was the cause of his fall.
- Cry: To check growing population is the crying need of the hour.
- Cup: Life is a cup of joy.
- Child: Priceless asset of parents.
  - Future torch bearer of country's progress.
  - UNICEF runs may schemes for uplifement of children.
- Care: Caring and sharing makes the relations strong.
- Casual: Attitude harms the success.
- Change: Determined people change the fate.
  - Gandhi fought for a change in the system.
- Conduct: Conducting environmental campaigns increases awareness.
- Class: Food for work scheme helps lower class of society.
  - Class differences are slowly but surely fading.
- Convince: Confident people convince others easily.
- Criticize: Positive criticism improves performance.
  - Healthy criticism improves performance.
- Decide: India and China have decided to improve their relations.
- Develop: Youth plays crucial role in the development of country.
- Discourage: Coach encourages team to win the match.
- Duty: Duty and responsibility goes hand in hand.
  - Duty implies responsibilities.
  - To perform duty is always joyful.
- Delay: Doing work without delay shows sincerity.
- Dictator: Democracy is the answer to dictatorship.
- Drink: Clean drinking water is essential for public health.
  - Interlinking of revers will provide enough drinking water.
- Differ: India is a home of different yet unified cultures.
- Death: The brave soldier died a martyr's death.

- o Death of a martyr inspires young blood.
- Deteriorate: Illiteracy deteriorates a country's progress.
  - o ASI checks the deterioration of historical monuments.
- Disagree: disagreement is removed by pragmatic approach.
- Doubt : Knowledge removes all doubt
- Desire: Indian youth desires for a developed nation.
- Diversity : Crop diversification is beneficial for good cultivate
- Determined: India is Determined people achieve their goals definitely.
- Dialogue: Is the only solution of problems like Kashmir.
- Difficult: Strong people face difficulties bravely.
- Demand: Talented people are always demanded.
  - o Indian brain is demand in the world.
- Earn: Honesty earns respect.
  - o Gandhiji earned respect from countrymen and others as well.
- Escape: Braves don't escape from difficulties.
- Elder: Is the best inspiration.
- Examination : Test the level of preparation
  - o Good leader examines problem from all angles.
- Enjoy: Friend's company is enjoyable.
  - o Friends enjoy each other's company.
- Encourage: Encouragement motivates people, Improve performance.
- Efficiency: Encouragement motivates people, Improve performance.
- Enemy: Lively people have lots of friends.
  - o Troop's fights with enemy will full enthusiasm.
- Excuse: Strong people never give lame excuse.
- Fight: Indian army fight with exemplary courage.
- Fear: Courage removes it.
  - o Enemy is fearful of Indian troops.
- Future: Future of Indian space research is very bright.
  - o Upcoming generation is the future of country.
- Failure: Gives chance to mend the shortcomings.
- Fair: Is the confidence of multi-cultures.
  - o Book fairs draw people from diverse fields.
- Fellow: Trust and understanding is the bond among the fellows.
- Follow: Good leaders command healthy following.
- Friend: Friends help/trusts/understands each other.
  - o Is the gift of God?
- Future: Is good for go-getters.
- Family: Always stand together.
  - o Indians stand together like a family.
- Flower: Relaxes and freshens from inside.
- Favorite: Dr. Abdul Kalam is favorite of all Indians.
- Film: Documentary films educate masses.
  - o Is the showcase of creative message?
- Guard: Defence forces guard the border who full devotion.
- Girl: Deserves equal opportunities for development for society.
- Gallant: Gallant mountaineers scaled the peak successfully.
- Happy: Meeting friends gives happiness
- Having a goal is a state of happiness.
- Honest: Good citizens show honesty
  - o Towards their responsibilities.
- Holiday: Helps to keep mind relaxed.
- Hesitation: Practice removes hesitation.
  - o Knowledge overcomes it.
- Home: Learning starts from home.

- Habit: Good habits lead a long way in life.
  - Good habits are inculcated by practice.
- Headmaster: Takes his institution to great heights.
  - Is the role model for students?
- Hard work: Always pays in life.
  - Persistent hard work in right direction brings positive result.
  - India always gives a helping hand to its neighbors.
- Hand: India joined hand with others to fight terrorism.
  - India always gives a helping hand to its neighbors.
- Illiterate: Literacy bring prosperity in society.
  - Literacy gives a helping hand to its neighbors.
- Impossible: Persistence made it possible to reach the moon.
  - Consistent effort make everything possible.
- Insult: He respects his elders.
  - Gandhiji converted it into motivation, get success.
- Jump: India jumped to great heights in IT field.
- Joke: Creates Light-moments in life.
- Jungle: Is the home to diverse flora and fauna.
  - Is a natural treasure for living being?
- Joy: Life is full of joy.
- Jealous: Love overcomes jealousy.
  - Caring and sharing removes jealousy.
- Lose: Strong people bounced back from their loss.
- Love: Binds people.
  - Brings unity.
  - Is the sweetest and strongest bond.
- Leader: Always shows right path to his men.
  - Good Leaders lead their men effectively.
- Lonely: Company of friends overcomes effectively.
- Luck: Luck favors those who take initiatives.
  - Great efforts bring good luck automatically.
- Loyal: Loyalty towards duty/work shows strong character.
  - Loyalty makes relations stronger.
- Language: Makes communication possible.
  - Language of love is known by all.
- Logic: Logical ideas are welcomed by all.
- Mad: Fanaticism is a madness of making.
- Make: Timely decisions help in making the career.
- Meet: Meeting regularly creates better understanding.
- Mend: Mending fences improves relations with neighbors.
- Mother: Is an embodiment of faith and sacrifice.
- Movement: High morale gives momentum to the goal.
- Necessity: Motivates a man to work hard.
- Newspaper: Improve the knowledge.
- Notice: Great deeds are notice by everyone.
- Obey: Proper command and control brings obedience to orders.
  - Firm and just orders are always obeyed.
- Opportunities: Wiseman always makes proper use of opportunities.
- Overcome: One can overcome the hurdles with determination.
  - Self-confidence helps in overcoming difficulties early.
- Quick: Army Officers take quick and correct decision.
- Read: Reading enhances knowledge.
- Recognition: Great deeds are always recognized.
- Respect: Good deed are always respected.
- Responsible: Rank and responsibility go together.

- Rest: Rest is essential after handwork.
- Revolution: Brings a change.
- Rights: Rights and duties are co-related.
- Risk: Higher the risk, higher the aims.
- Rule: Enforcement of rules and regulations brings discipline.
- Shy: Shyness can be avoided by free interaction with others.
- Sister: Elder sister is a good friend and an advisor
- Sportsman: Sportsman spirit helps in winning the match.
- Stamina: Regular exercise increases stamina.
  - Sports help in building stamina.
- Struggle: Struggle makes life thrilling experience.
- System: Systematic approach makes work easier.
- Teacher: Guides and helps in drawing best in a child
- Team: Team's victory depends on each ones efforts.
- Temper: Short tempered people create more enemies than friends.
- Thank: Thanking people cost nothing.
- Tired: Short break after handwork avoids tiredness.
- Travel: Traveling improves knowledge.
- Understand: Friendship in based on mutual understanding.
- Uniform: Gives pride and unity.
- Union: Mutual understanding brings unity in a team.
- Victory: Sincere efforts leads to victory.
- War: War is not the solution to human problems.
- Worry: Hurry and worry brings diseases only.
- Young: Young performers are goal oriented.
- Youth: Youth alone can built society.
- Zeal: He plays with Zeal & Josh.

Basically, one should make positive and factual sentences based on recent happenings. Hence, practice is necessary.

How to write a positive sentence from a negative word

- When your reaction to a negative word is positive, it will be easy for you to make a sentence from the word.
- Form a positive idea from a negative word shown in the slide.

For example- DIE: - Now when we hear die, an image of death comes to our mind. It is natural but a little practice will help you to change the image out of your mind.
Sentence- Indian people are diehard fans of cricket. Or

Sentence-With Agni- V, Indian security system becomes a deadly combination.

- Do not use readymade sentence. This will break the pattern of loop created by psychologist.
- Practice writing negative words, it will help you in changing the image of those words in your mind.

Examples of Some WAT

1. Sacrifice- A person with morals never sacrifice with his principles.
2. Defeat – A winner defeat his weakness.
3. Danger- Indian defence is always ready for dangerous situations.
4. Risk- A winner always ready to take calculated risk.
5. Worry- A fighter never worries about failures.
6. War- Indian war of independence got tremendous support.
7. Problem-Proper planning lead to an easy solution of the problem.
8. Failure-failures are the foundation of success.
9. Challenge - challenges increase the abilities.
10. Difficult-difficulties are solved by patience.
11. Fear- winners bravely face his fear.
12. Aggressive- A leader patiently deals with his team.
13. Confusion-leaders have a clear vision.
14. Weapon- weapon is used for protection.
15. Hijack- commandos are trained for hijack.

From the examples, you can understand how to change the image of the word in your mind and if you're able to change the image of negative words from your mind, then you'll be able to tackle your WAT test easily.

ONE IMPORTANT THING YOU NEVER FORGET THAT

• <u>Golden Tips for Word Association Test</u>

- Award
    - o A brave parson is awarded for his valor.
    - o Hard work is an award itself
- Atom
    - o Atomic power is used in India for electricity and eventually development.
    - o India uses its atomic energy for peaceful purpose.
- Accident
    - o Proper execution of traffic laws helps to reduce accident.
    - o Strangers accidently become best friends.
- Assist
    - o A team player and a cooperative person assist others in their work.
    - o A team player assists his seniors in work.
- Annoy
    - o A cool and patient person don't get annoyed
- Agrees
    - o A team player easily agrees and, help them in executing a plan.
- Abuse
    - o Gentlemen always use decent tone.
- Affection
    - o We all have affection towards our country.
    - o Love and affection makes a person content and lively.
- Appeal
    - o Indian army dress and conduct is very appealing.
- Accept
    - o A leader accepts all the point of views of his team.
    - o Leader accepts and takes responsibility for a job.
- Accomplish
    - o A proper planning and execution by a leader accomplish the plan.
- Attack
    - o Indian soldiers are well trained to neutralize attacks.

Infographics

Fare Play: Who's Riding Public Transit?

Share of people who take public transport on their commute to work/school/university

Country	Share
South Korea	41%
Poland	39%
Austria	34%
Mexico	33%
Spain	32%
Japan	30%
Germany	27%
United Kingdom	24%
France	23%
United States	13%
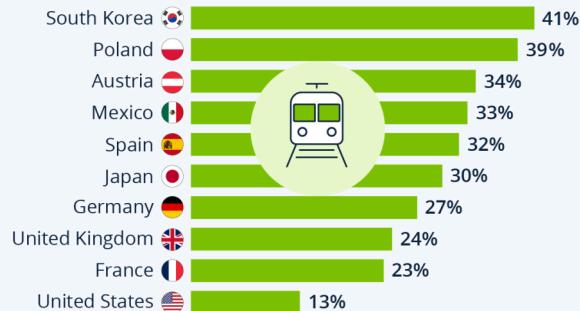
764-7,708 respondents (18-64 y/o) who commute surveyed per country
Jul. 2022-Jun. 2023
Source: Statista Consumer Insights

The World's Small but Deadly Nipah Belt

Total number of confirmed Nipah virus deaths worldwide and average mortality rate per country

India
74 (2001-'23)
74.0%

Bangladesh
237 (2001-'23)
70.7%

Malaysia
105 (1998-'99)
39.6%
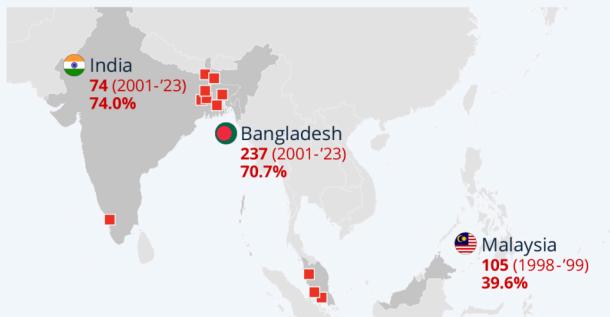
Zoonotic virus Nipah emerged in 1998.
One death in Singapore (part of Malaysia outbreak)
Sources: WHO, Malaysian Journal of Pathology, media reports

The Cities With the Best Public Transport in 2023

Cities with the best public transport according to the 2023 Global Transport Index (10.00=best)*

Oslo 7.65
Stockholm 9.41
London 6.47
Berlin 5.88
Paris 10.00
Brussels 7.06
New York City 8.24
Madrid 4.12
Hong Kong 8.82
Buenos Aires 5.29

* Index based on: cost of public transport, number of metro routes, stops, shared bikes & e-scooter schemes, fleet size, number of electric vehicles. 19 cities surveyed.
Source: William Russell

What's the Most Popular Service to Book Online?

Most booked online services in selected countries by share of respondents who said they had booked them*

- Restaurant delivery
- Grocery delivery
- Education & learning services
- Buying event tickets

Country	Share
IN	51%
CN	49%
ID	46%
NG	42%
VN	41%
US	41%
DE	39%
MA	33%
NO	26%
JP	17%
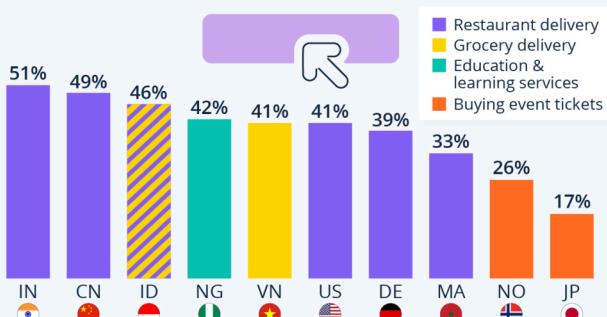
1,000-5,000 respondents (18-64 y/o) per country surveyed Jul. 2022-Jun. 2023
* In the past 12 months
Source: Statista Consumer Insights

The Cities With the Slowest Traffic

Highest average travel time per 10 km in 2022, by city*

City	Time
London 🇬🇧	36 minutes, 20 seconds
Bengaluru 🇮🇳	29 minutes, 10 seconds
Dublin 🇮🇪	28 minutes, 30 seconds
Sapporo 🇯🇵	27 minutes, 40 seconds
Milan 🇮🇹	27 minutes, 30 seconds
Pune 🇮🇳	27 minutes, 20 seconds
Bucharest 🇷🇴	27 minutes, 20 seconds
Lima 🇵🇪	27 minutes, 10 seconds

* Based on trip data from drivers within the larger metropolitan area or a 5 km radius from the city center throughout the complete road network in 390 cities across 56 countries

Source: TomTom Traffic Index

The Looming Retirement Crisis

Projected evolution of the number of retirees per 100 working people in selected countries*

● 2020 ● **2050**

Country	2020	2050
United States 🇺🇸	28.4	40.4
United Kingdom 🇬🇧	32.0	47.1
China 🇨🇳	18.5	47.5
France 🇫🇷	37.3	54.5
Germany 🇩🇪	36.5	58.1
Italy 🇮🇹	39.5	74.4
Spain 🇪🇸	32.8	78.4
South Korea 🇰🇷	23.6	78.8
Japan 🇯🇵	52.0	80.7

* Number of people older than 65 years per 100 people of working age (20-64). Projections based on 2019 demographic data.

Source: OECD - Pensions at a Glance 2021

Grocery Delivery Makes It to the Mainstream

Share of respondents in selected countries who are grocery delivery users (2023)

Country	Share
India 🇮🇳	60%
South Korea 🇰🇷	52%
Mexico 🇲🇽	52%
United Kingdom 🇬🇧	49%
United States 🇺🇸	39%
China 🇨🇳	37%
Japan 🇯🇵	20%
Switzerland 🇨🇭	10%
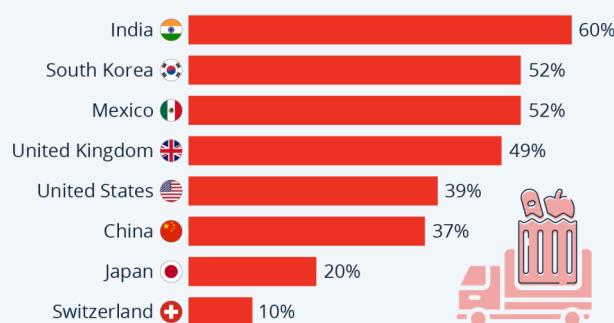
1,000-5,000 respondents (18-64 y/o) per country surveyed Jul. 2022-Jun. 2023
Source: Statista Consumer Insights

The Countries That Attract the Most Migrants

Top destination countries for international migrants in 2000 and 2020* (in millions)
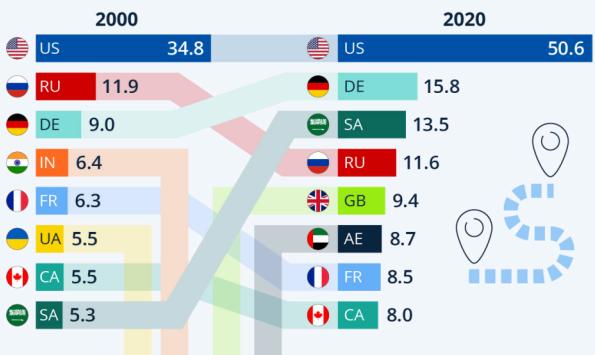
2000		2020	
🇺🇸 US	34.8	🇺🇸 US	50.6
🇷🇺 RU	11.9	🇩🇪 DE	15.8
🇩🇪 DE	9.0	🇸🇦 SA	13.5
🇮🇳 IN	6.4	🇷🇺 RU	11.6
🇫🇷 FR	6.3	🇬🇧 GB	9.4
🇺🇦 UA	5.5	🇦🇪 AE	8.7
🇨🇦 CA	5.5	🇫🇷 FR	8.5
🇸🇦 SA	5.3	🇨🇦 CA	8.0

* Mid-year
Source: UN DESA, Population Division: International Migrant Stock

Where Most Money Is Sent Back Home

Top countries receiving international remittances (in USD billion)

2005		2020	
CN	23.63	IN	83.15
MX	22.74	CN	59.51
IN	22.13	MX	42.88
NG	14.64	PH	34.91
FR	14.21	EG	29.60
PH	13.73	PK	26.11
BE	6.88	FR	24.48
DE	6.86	BD	21.75
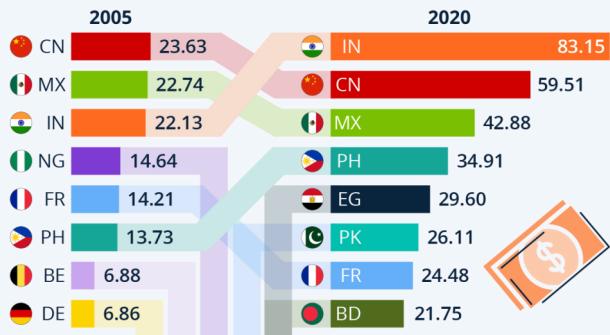
Source: World Bank via World Migration Report 2022

24 and Counting: Djokovic Plays for the Record Books

Number of Grand Slam singles titles won by professional tennis players in the Open Era (since 1968)

Player	Titles
Novak Djokovic	24
Serena Williams	23
Rafael Nadal	22
Steffi Graf	22
Roger Federer	20
Martina Navratilova	18
Chris Evert	18
Pete Sampras	14
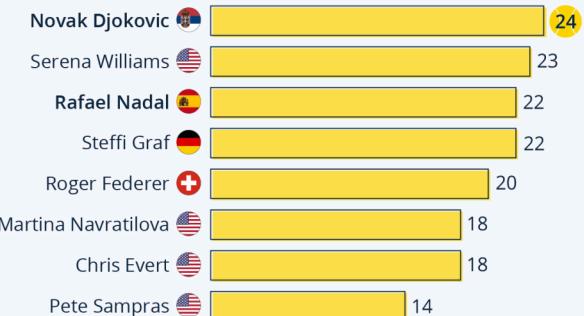
Players in bold still active. As of September 11, 2023.
Sources: ATP, WTA, ESPN

India Has the World's Biggest Diaspora

Top countries of origin for international migrants in 2000 and 2020* (in millions)

2000		2020	
RU	10.7	IN	17.9
MX	9.6	MX	11.2
IN	7.9	RU	10.8
CN	5.9	CN	10.5
UA	5.6	SY	8.5
BD	5.4	BD	7.4
AF	4.8	PK	6.3
GB	3.9	UA	6.1

* Mid-year
Source: UN DESA, Population Division: International Migrant Stock

The Deadliest Floods & Storms of the Past Three Decades

Floods, tsunamis and storm surges with the biggest numbers of estimated fatalities since 1990

Event	Year	Fatalities
Cyclone Gorky, Bangladesh	1991	138,000
Hurricane Mitch, Honduras	1998	11,683
Odisha Cyclone, India	1999	15,000
Vargas flood, mudslide, Venezuela	1999	10,000
Tsunami, Indian Ocean	2004	220,000
Cyclone Sidr, Bangladesh	2007	4,407
Cyclone Nargis, Myanmar	2008	138,373
Tsunami, Japan	2011	18,426
Typhoon Haiyan, Philippines	2013	8,135
North Indian floods, India	2013	5,748

Singular events only
Sources: Munich Re, Swiss Re, Aon, Statista research

The World Behind Bars

Countries with the highest prison population per 100,000 inhabitants*

El Salvador	1,086
Cuba	794
Rwanda	621
Turkmenistan	576
American Samoa	538
United States	531
Panama	499
Guam	475

* Data retrieved on Sep. 9, 2023
Source: ICPR

100 Years of INTERPOL

Timeline of INTERPOL's major milestones and historical events since its founding in 1923

INTERPOL

1923 — Founding of ICPC
INTERPOL, formerly named International Criminal Police Commission (ICPC), established in Vienna with 20 members.

1938 — World War II era
Nazis take over the ICPC. In 1941, the HQ moved to Berlin and remained under Nazi control until WWII's end.

1947 — First Red Notice issued
International alert issued for a Russian man wanted for murdering a police officer.

1955 — Expansion
50 member countries. New additions include: Brazil, UK, U.S., Japan, Ireland, India.

1956 — Headquarters move
Relocation to Lyon, France where the HQ still is today.

1967 — Expansion
100 member countries. New additions include: Congo, Ghana, Hong Kong, Pakistan, Saudi Arabia, Vietnam.

**1986 — General Secretariat building bombed**
Extremist group Direct Action attacks office with machine guns and bomb. One police officer injured.

1989 — Official name change
Renamed the "International Criminal Police Organization" or INTERPOL. 150 member countries.

2001 — Post 9/11 role
INTERPOL becomes operational 24/7.

2013 — Operation Lionfish
30 tonnes of cocaine, heroin and marijuana with an estimated value of 822 million U.S. dollars seized.

2016 — Facial recognition system goes live
System used to verify a person based on analysis of their facial features.

2021 — Expansion
Micronesia joins INTERPOL as the 195th member country.

2023 — I-Familia database, ID-ART app launched
I-Familia is a database that uses DNA samples to identify missing persons. ID-Art is a mobile app that gives access to the Stolen Works of Art database.

100th anniversary of INTERPOL
Also the first year of the UNGA-designated International Day of Police Cooperation on Sep. 7.

Where People Live in Extreme Poverty

Share of people in selected countries living below the international poverty line*

| Country	Share
MG	80.7%
CD	69.7%
TZ	44.9%
HT	29.2%
YE	19.2%
BD	13.5%
HN	12.7%
IN	10.0%
LA	7.1%
PK	4.9%

* Currently at $2.15 a day. Latest available year: 2018-2019.
  Bangladesh: 2016, Yemen: 2014, Haiti, Madagascar, DRC: 2012
Source: World Bank
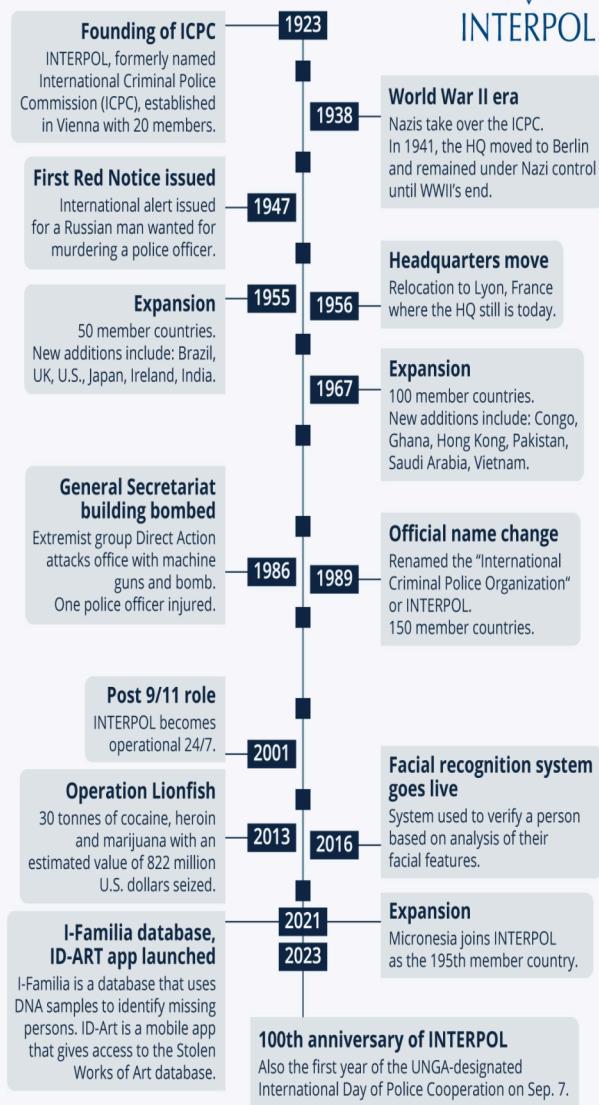
PARMANU

DEFENCE ACADEMY

सर्वदा शक्तिशाली

REGISTERED ADDRESS:

151/1, Doon Vihar, Jakhan, Rajpur Road Dehradun - 248001, Uttarakhand.
Email: admin@parmanudefence.com | **Phone:** +91 8445 901 901 +91 9058 099 339

admin@parmanudefence.com | www.parmanudefence.com

+91 8445 901 901
+91 9058 099 339