


**CURRENT AFFAIRS TEST SERIES- CSE PRELIMS 2024****Key with Explanation**

<b>1. D</b> <p>All pairs are correctly matched.</p> <p>Chandubi Festival</p> <ul style="list-style-type: none"><li>• It is organised every year for five days starting from the first day of the New Year along the Chandubi lake, which is situated in the state of Assam.</li><li>• The main attractions of the Chandubi festival are the local folk culture, ethnic cuisine, local handloom and dresses, boating, etc.</li><li>• The major aim of the Chandubi Festival is to promote eco-tourism in this biodiversity hotspot of Assam.</li></ul> <p>Moatsu Festival, Nagaland:</p> <ul style="list-style-type: none"><li>• Celebrated by the Ao tribes of Nagaland, the Moatsu Festival is a time of great rejoicing as the planting season comes to an end.</li><li>• All activities are associated with the harvest.</li></ul> <p>Wangala Festival, Meghalaya:</p> <ul style="list-style-type: none"><li>• The Wangala Festival is the biggest harvest festival of the Garo tribe in Meghalaya.</li><li>• Held in honor of the Sun God of fertility, the festival marks the end of the sowing season and agricultural year.</li><li>• It's celebrated by the beating of drums, blowing horns, and traditional dancing.</li></ul> <p>Chapchar Kut, Mizoram:</p> <ul style="list-style-type: none"><li>• Chapchar Kut is a harvest festival named after the bamboo that has been cut and is drying for burning and subsequent cultivation.</li><li>• The traditional bamboo dance performed by women (while men sit on the ground and beat bamboo sticks against each other), called cheraw, is a big part of the festival.</li></ul>	<b>2. B</b> <p>About Peregrine Lander</p> <ul style="list-style-type: none"><li>• It is designed to carry scientific instruments and other payloads to the Moon's surface, specifically targeting the Sinus Viscositatis region.</li><li>• This area, also known as the Bay of Stickiness, lies adjacent to the Gruithuisen Domes near the Oceanus Procellarum, or Ocean of Storms.</li><li>• Aim: To locate water molecules on the moon, measure radiation and gases around the lander, and evaluate the lunar exosphere (the thin layer of gases on the moon's surface)"</li></ul> <p>The mission's scientific goals are ambitious:</p> <ul style="list-style-type: none"><li>• To analyze the lunar exosphere, assess the thermal properties and hydrogen content of the lunar regolith, study magnetic fields, examine the radiation environment, and test advanced solar arrays.</li></ul> <p>Peregrine Mission 1 will transport approximately ten payloads, with a total mass capacity of 90 kilograms.</p> <p>The scientific payload features cutting-edge instruments such as the Laser Retro-Reflector Array (LRA), Linear Energy Transfer Spectrometer (LETS), Near-Infrared Volatile Spectrometer System (NIRVSS), PROSPECT Ion-Trap Mass Spectrometer (PITMS), and Neutron Spectrometer System (NSS).</p>
<b>3. A</b> <p>Context:</p> <p>A research team at Stanford University has found the absorption capacity of a sisal-based material to be higher than those in commercial menstrual pads.</p> <p>About Sisal Plant</p> <ul style="list-style-type: none"><li>• It is a xerophytic, monocarp, semi-perennial leaf fibre producing plant.</li></ul>	

	<ul style="list-style-type: none"> <li>The leaves are thick, fleshy and often covered with a waxy layer, typical characteristics of xerophytic plants.</li> <li>Its leaves grow up to 2 m long. The lifespan of a sisal plant is about 7-10 years, during which it produces 200-250 usable leaves.</li> <li>Each leaf has about a thousand fibres that can be used to make ropes, paper, and cloth.</li> <li>It could be used to make a highly absorbed material as well.</li> </ul> <p><b>Climatic condition</b></p> <ul style="list-style-type: none"> <li>It is well adapted to arid environments as the species is xerophytic in nature.</li> <li>Temperature and Rain: It can withstand a maximum temperature 40-45°C and grows well with evenly distributed rainfall of 60-125 cm.</li> <li>Soil: It thrives best on dry, permeable, sandy-loam soils with a good amount of liming materials (Ca and Mg) but can also grow on various other types of soils.</li> <li>In India it is grown in light calcareous and gravelly soils with good drainage</li> <li>It is well adapted mainly in Odisha, Jharkhand, Maharashtra, part of Bihar, western part of West Bengal and many southern states.</li> </ul> <p>It is mainly propagated by vegetative means such as 'bulbils' and 'suckers'.</p>	<ul style="list-style-type: none"> <li>It is majorly produced in Southeast Asian region, with the plant being largely found only in China and India.</li> <li>However, the conjunction of climate change and extensive deforestation undertaken for CPT extraction has pushed these plants into the endangered species category.</li> </ul>
<b>4.</b>	<p><b>C</b></p> <p>Context:</p> <p>Researchers at the Indian Institutes of Technology Madras and Mandi have metabolically engineered <i>Nothapodytes nimmoniana</i> plant cells to increase production of anti-cancer drug camptothecin (CPT).</p> <ul style="list-style-type: none"> <li>Camptothecin (CPT) is an important anti-cancer drug lead molecule for high-value drugs like Topotecan and Irinotecan.</li> <li>It is a potent topoisomerase I inhibitor extracted mainly from - <i>Camptotheca acuminata</i> (native to Eastern Asia) and <i>Nothapodytes nimmoniana</i> (native to India).</li> </ul>	<p><b>5.</b></p> <p><b>A</b></p> <ul style="list-style-type: none"> <li>In a first, India is set to chair and host UNESCO's World Heritage Committee in New Delhi from 21st to 31st July 2024. Statement 1 is correct.</li> <li>The World Heritage Committee meets once a year, and consists of representatives from 21 of the States Parties to the Convention elected by their General Assembly. Statement 2 is incorrect.</li> <li>The Committee is responsible for the implementation of the World Heritage Convention, defines the use of the World Heritage Fund and allocates financial assistance upon requests from States Parties.</li> <li>It has the final say on whether a property is inscribed on the World Heritage List. Statement 3 is correct.</li> <li>It examines reports on the state of conservation of inscribed properties and asks States Parties to take action when properties are not being properly managed.</li> <li>It also decides on the inscription or deletion of properties on the List of World Heritage in Danger.</li> </ul> <p><b>6.</b></p> <p><b>C</b></p> <p>Context: Cabinet Committee on Economic Affairs (CCEA) approves launch of Urea Gold</p> <p>About:</p> <ul style="list-style-type: none"> <li>Urea gold will support the other initiative of government in the sphere of Environmentally Friendly Fertilizers (EFFs).</li> <li>Urea gold is a Sulphur-Coated Urea (SCU). Statement I is correct.</li> <li>It is a non-organic slow-release fertilizer and is generally prepared by coating preheated urea granules with molten sulphur.</li> </ul>

	<ul style="list-style-type: none"> <li>• Sulphur coating ensures a more gradual release of nitrogen.</li> <li>• It prolongs the urea action, thus helping plants to stay greener for longer time. Statement II is incorrect.</li> <li>• It will increase efficiency and reduce frequent application of fertilizer, thus enhancing soil health.</li> <li>• As per Indian Council of Agricultural Research (ICAR) study, use of SCU leads to reduction in urea consumption by 25%.</li> <li>• EFFs are fertilizers that can reduce environmental pollution from nutrient loss by retarding, or even controlling, the release of nutrients into soil.</li> <li>• EFFs also include organic fertilizers such as Biocompost, Vermicompost, etc.</li> </ul>	<p>AI's Role in Early Cancer Detection</p> <ul style="list-style-type: none"> <li>• Learning from Data: AI analyzes extensive datasets of radiological and pathological images to recognize features associated with various cancers.</li> <li>• Early Detection: By identifying tissue changes and potential malignancies, AI facilitates early cancer detection, crucial for effective treatment.</li> </ul>
7.	<p><b>C</b></p> <p>Context:</p> <p>Mumbai's Tata Memorial Hospital (TMH) is leveraging artificial intelligence (AI) to create a 'Bio-Imaging Bank' for early-stage cancer detection.</p> <p>What is a 'Bio-Imaging Bank'?</p> <ul style="list-style-type: none"> <li>• Comprehensive Repository: The Bio-Imaging Bank is a repository containing radiology and pathology images linked with clinical information, outcome data, treatment specifics, and additional metadata. Statement 1 is correct.</li> <li>• AI Integration: The project uses deep learning to develop a cancer-specific tailored algorithm for early detection, incorporating data from 60,000 patients. Statement 2 is correct.</li> </ul> <p><b>Project Scope and Collaboration</b></p> <ul style="list-style-type: none"> <li>• Focus on Specific Cancers: Initially targeting head and neck cancers and lung cancers, the project aims to collect data for at least 1000 patients for each type.</li> <li>• Multi-Institutional Effort: Funded by the Department of Biotechnology, the project involves collaboration with IIT-Bombay, RGCIRC-New Delhi, AIIMS-New Delhi, and PGIMER-Chandigarh.</li> </ul>	<p>8. <b>A</b></p> <p>Pair 3 is correct, Pair 1&amp;2 are incorrect.</p> <p>About Ugram:</p> <ul style="list-style-type: none"> <li>• 'Ugram' is a state-of-the-art indigenous assault rifle.</li> <li>• It has been developed by the Armament Research and Development Establishment (ARDE), a unit of DRDO, in collaboration with a private industry partner.</li> <li>• It was developed in less than 100 days.</li> <li>• It has been developed as per the General Staff Qualitative Requirements (GSQR) of the army into consideration.</li> </ul> <p><b>About Drishti 10 'Starliner':</b></p> <ul style="list-style-type: none"> <li>• It is an indigenously manufactured Unmanned Aerial Vehicle (UAV).</li> <li>• It was developed by Adani Defence and Aerospace.</li> <li>• It is an advanced intelligence, surveillance, and reconnaissance (ISR) platform with 36 hours endurance and a 450 kg payload capacity.</li> <li>• It is an all-weather military platform which has clearance to fly in both segregated and unsegregated airspace.</li> <li>• It is equipped with advanced communication systems, including satellite communication and Line-of-Sight (LOS) data links, ensuring reliable and secure data transmission.</li> </ul> <p><b>About INS Kabra:</b></p> <ul style="list-style-type: none"> <li>• It is a naval vessel named after an island of the Andaman and Nicobar archipelago.</li> <li>• It belongs to the Car Nicobar class of high-speed offshore patrol vessels are built by Garden Reach Shipbuilders and Engineers (GRSE) for the Indian Navy.</li> </ul>

	<ul style="list-style-type: none"> <li>It was eighth in a series of 10 Fast Attack Crafts.</li> <li>The vessels are designed as a cost-effective platform for patrol, anti-piracy and rescue operations in India's Exclusive Economic Zone.</li> </ul>		<ul style="list-style-type: none"> <li>HALEU is defined as uranium enriched between 5% and less than 20% of the U-235 isotope.</li> <li>It is crucial for advanced nuclear reactor designs, although not widely available commercially.</li> </ul>
9.	<p><b>B</b></p> <p>Pair 1&amp;2 are correct, Pair 3&amp;4 are incorrect.</p> 	11.	<p><b>D</b></p> <ul style="list-style-type: none"> <li>NUTEC Plastics is the IAEA's (International Atomic Energy Agency) flagship initiative to address the global challenge of plastic pollution.</li> <li>It brings together countries and partners from around the world to fight plastic pollution on two fronts: at point of source, by introducing new technologies to improve plastic recycling; and in the ocean, where the bulk of plastic waste ends up.</li> <li>India is part of the NUTEC Plastics Initiative.</li> </ul>
10.	<p><b>B</b></p> <p>Context:</p> <p>Clean Core Thorium Energy, a Chicago-based company, has developed Advanced Nuclear Energy for Enriched Life (ANEEL), a new nuclear fuel combining Thorium and High Assay Low Enriched Uranium (HALEU).</p> <ul style="list-style-type: none"> <li>ANEEL can be utilized in existing Pressurized Heavy-Water Reactors (PHWRs), making it compatible with India's indigenous reactor system.</li> <li>Offers a quicker and more accessible alternative for deploying thorium, especially in nations lacking infrastructure for other green energy sources.</li> <li>Reduces operation costs and nuclear waste significantly compared to natural uranium.</li> <li>ANEEL fuel bundles have a longer lifespan and burn more efficiently.</li> <li>The spent ANEEL fuel cannot be repurposed for weapons, ensuring non-proliferation.</li> </ul> <p><b>High Assay Low Enriched Uranium (HALEU)</b></p>	12.	<p><b>D</b></p> <p>All pairs are correct</p> <p>About Sri Kateel Yakshagana Mela</p> <ul style="list-style-type: none"> <li>It is a famous Yakshagana troupe (Kateel Sri Durgaparameshwari Yakshagana Dashavatara Mandali), which was founded in the middle of the 19th Century.</li> <li>It is popularly known as Kateel Mela is an important 'Harake Seva' troupe.</li> <li>Yakshagana troupe performs on request by devotees who have taken a vow (Harake) to arrange a show of Yakshagana for fulfilment of a desire or as a service.</li> <li>Yakshagana activity is centuries old at Kateel, a well known temple village, pilgrim centre near Mangalore in Karnataka.</li> </ul> <p><b>Shamlaji Fair</b></p> <ul style="list-style-type: none"> <li>Lord Shamlaji "the Dark Divine," who is supposed to be incarnate of Krishna or Vishnu, is honoured by a tribal community in Gujarat.</li> <li>Thousands of devotees flock to the Meshno River to worship the deity and take a sacred bath.</li> </ul>

	<ul style="list-style-type: none"> <li>The 'Bhils' have great faith in Shamlaji, whom they affectionately refer to as 'Kaliyo Dev.'</li> <li>It takes place in November for around three weeks, with Kartik Poornima being the most prominent day of the fair.</li> </ul> <p><b>Sonepur Mela</b></p> <ul style="list-style-type: none"> <li>It is one of Asia's major cattle fairs.</li> <li>The mela takes place at the confluence of the Ganga and the Gandak rivers in Sonepur, Bihar.</li> <li>It usually takes place in November on Kartik Poornima, a Hindu festival day considered auspicious.</li> <li>It is the only fair where huge numbers of elephants are auctioned, and legend has it that Chandragupta Maurya used to go there to buy elephants and horses.</li> </ul> <p><b>Gangasagar Mela</b></p> <ul style="list-style-type: none"> <li>It takes place near the mouth of the Hooghly River in West Bengal throughout January and February.</li> <li>Hindus consider a sacred dip in the Ganges, especially on Makar Sankranti day, to be extremely auspicious.</li> <li>Hundreds of thousands of pilgrims have flocked to the site. The presence of Naga sadhus gives the fair a distinct identity.</li> </ul>	<ul style="list-style-type: none"> <li><b>Benefits:</b> Momentum investing can generate high returns that comfortably beat the benchmark indices.</li> <li><b>Issues:</b> Momentum investing can cause an unsustainable rise or fall in prices and It can eventually lead to heavy losses for investors.</li> </ul>
<b>13. D</b>	<p>About Momentum investing:</p> <ul style="list-style-type: none"> <li>It refers to a style of investing wherein investors purchase assets such as stocks or bonds that are consistently rising in price while selling assets whose prices are falling. Option (d) is correct.</li> <li>The "buy high, sell higher" philosophy of momentum investing is in stark contrast to the traditional "buy low, sell high" advice given to investors.</li> <li><b>Features:</b> Momentum investors buy assets with rising prices in the hope that the upward price momentum of these assets would continue, thus allowing them to sell these assets at higher prices in the future to make profits.</li> <li>Similarly, they sell assets that are falling in price expecting the fall in prices to continue for some time.</li> </ul>	<p><b>14. D</b></p> <p>About Einstein Probe (EP):</p> <ul style="list-style-type: none"> <li>A Long March-2C carrier rocket carried a satellite called Einstein Probe.</li> <li>It is new astronomical satellite which is shaped like a lotus in full bloom,</li> <li>It is a mission of the Chinese Academy of Sciences (CAS) dedicated to time-domain high-energy astrophysics.</li> <li>It consists of wide-field X-ray telescopes (WXT) and follow-up X-ray telescopes (FXT).</li> </ul> <p><b>Purpose:</b></p> <ul style="list-style-type: none"> <li>It aims to capture the first light from supernova explosions,</li> <li>Search for X-ray signals accompanying gravitational wave events, and</li> <li>Discover dormant black holes and other celestial objects.</li> </ul> <p>The satellite's X-ray detection technology is inspired by lobster-eye telescopes.</p>
		<p><b>15. A</b></p> <p>Pair 3 is correct, Pair 1,2&amp;4 are incorrect</p> <p>About Belgorod Region:</p> <ul style="list-style-type: none"> <li>It is situated in the centre of the European part of Russia, on the southern and south-eastern slopes of the Central Russian Upland.</li> <li>It is one of Russia's successfully developing industrial and agricultural regions.</li> <li>It borders on the Kursk and Voronezh regions, the Lugansk People's Republic.</li> <li>It also shares a state border with Ukraine.</li> <li>The region is crisscrossed with rivers.</li> <li>The largest rivers are the Psjol, Seversky Donets, Vorskla, Oskol, Tikhaya Sosna and Valui.</li> </ul>

- The region has a moderate continental climate with hot summers and relatively cold winters.



#### About Aigai

- The city of Aigai was the ancient first capital of the Kingdom of Macedonia.
- It was discovered in the 19th century near Vergina, in northern Greece.
- The most important remains are the monumental palace, lavishly decorated with mosaics and painted stuccoes, and the burial ground.
- Alexander the Great was crowned in the ancient Palace of Aigai.
- It was built by Philip II, the father of Alexander the Great, the tombs of Philip and other Macedonian kings are nearby.
- After the assassination of his father, Alexander was crowned at the palace in 336 BC.
- The palace and the nearby tombs are listed as a World Heritage Site by UNESCO.



#### About Okinawa:

- Okinawa Prefecture is located in the eastern part of the Asian continent
- It is the southwestern most point of the Japanese archipelago.
- It is located between Taiwan and Kyushu, the southwestern-most of Japan's four main islands.
- Okinawa remains under Japanese administration today.
- Okinawa comprises 160 islands of varied sizes and enjoys warm and pleasant temperatures throughout the year.
- The warm Kuroshio Current flows through the clear ocean waters of Okinawa, creating an environment in which coral, fish, and other sea creatures thrive.
- It is the only region in Japan that is in the subtropical zone, and is blessed with a warm climate all year round.



#### About Kinmen Island

Governed by: Kinmen, alternatively known as Quemoy, is a group of islands governed by Taiwan.

#### Location:

- In reference to China: At the southeastern coast of the People's Republic of China, from which they are separated by Xiamen Bay.
- To the east of Xiamen.
- In reference to Taiwan: On the west from the closest shoreline of the island of Taiwan across the Taiwan Strait.

		<ul style="list-style-type: none"> <li>• Afghanistan occupies the bottom spot on the list, with access to just 28 countries without a visa. Statement 2 is incorrect.</li> <li>• Syria, with visa-free access to only 29 destinations, holds the second-lowest position, followed by Iraq with 31 and Pakistan with 34.</li> <li>• The United Arab Emirates was the fastest climber over the past decade, jumping to 11th place and offering access to 183 destinations without a visa. Statement 3 is correct.</li> </ul>
16.	<p><b>A</b></p> <p>Statement 3 is correct, Statement 1&amp;2 are incorrect.</p> <p>About Henley Passport Index:</p> <ul style="list-style-type: none"> <li>• It is the original, authoritative ranking of all the world's passports according to the number of destinations their holders can access without a prior visa.</li> <li>• It started in 2006 as the Henley &amp; Partners Visa Restrictions Index (HVRI).</li> <li>• The index is based on exclusive data from the International Air Transport Association (IATA), the largest, most accurate travel information database, and enhanced by Henley &amp; Partners' research team. (Henley &amp; Partners is a London-based advisory firm).</li> <li>• The index includes 199 different passports and 227 different travel destinations.</li> <li>• The number of countries that a specific passport can access becomes its visa-free 'score'.</li> </ul> <p><b>Highlights of Henley Passport Index 2024:</b></p> <ul style="list-style-type: none"> <li>• France, Germany, Italy, Japan, Singapore, and Spain hold the top spot as the world's most powerful passports, allowing visa-free entry to 194 global destinations.</li> <li>• The top 10 is largely dominated by European countries.</li> <li>• The average number of destinations travellers are able to access visa-free has nearly doubled, from 58 in 2006 to 111 in 2024.</li> <li>• India's passport ranked 80th in the list, with citizens allowed to travel to 62 countries without a visa. Statement 1 is incorrect.</li> </ul>	<p><b>17. D</b></p> <p>All statements are correct</p> <p>About GREAT Scheme:</p> <p>Grant for Research and Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT) Scheme focuses on supporting individuals and companies to translate prototypes to technologies &amp; products, including commercialisation.</p> <p>Aim: To provide much-needed impetus for the development of the technical textiles startup ecosystem in India, especially in niche sub-segments such as bio-degradable and sustainable textiles, high-performance and speciality fibres, and smart textiles. Statement 1 is correct.</p> <p><b>Funding:</b></p> <ul style="list-style-type: none"> <li>• Under this scheme, a grant-in-aid of up to Rs 50 lakh for up to a period of 18 months will be provided. Statement 2 is correct.</li> <li>• The textile ministry will additionally provide 10 per cent of the total grant-in-aid to incubators.</li> <li>• Only a minimum of 10 per cent contribution has to be made by the incubatee.</li> </ul> <p>All of this is being done by incubators like IITs, NITs, Textiles Research Associations, and Centres of Excellence.</p> <p>The textiles ministry has also given a nod to 26 institutes for upgrading their laboratory infrastructure and training of trainers in the application areas of technical textiles.</p>


	<p>The scheme will be commensurate with the National Technical Textiles Mission. Statement 3 is correct.</p> <p>Key facts about the National Technical Textiles Mission (NTTM)</p> <ul style="list-style-type: none"> <li>It was launched to increase the penetration level of technical textiles in India while leveraging the extraordinary growth rate of the sector.</li> <li>The mission aims to position India as a global leader in Technical Textiles.</li> </ul> <p>The mission will comprise the following four components:</p> <ul style="list-style-type: none"> <li>Research, Innovation and Development</li> <li>Promotion and Market Development</li> <li>Export Promotion</li> <li>Education, Training, Skill Development</li> </ul> <p>Nodal Ministry: Ministry of Textiles</p> <p>Implementation: It has been approved with an implementation period of four years, starting from FY 2020-21 till FY 2023-24.</p>	<ul style="list-style-type: none"> <li>This means that QLED TVs do not have the same perfect blacks and infinite contrast as OLED TVs, but they can still produce very high levels of brightness and colour accuracy. Statement 1 is incorrect.</li> <li>QLED TVs also tend to be more durable and have a longer lifespan than OLED TVs.</li> </ul> <p>What is the difference between picture quality?</p> <ul style="list-style-type: none"> <li>In terms of picture quality, OLED TVs are generally considered to be the better option due to their perfect blacks and infinite contrast. However, QLED TVs can still produce very high levels of brightness and colour accuracy, and they are often more affordable than OLED TVs.</li> <li>In addition, QLED TVs with the local dimming feature have an edge over OLEDs. This feature divides the screen into small zones, each with its own LED backlight. This allows for better control of the image and deeper blacks.</li> </ul> <p>Which tech will last longer and is more durable?</p> <ul style="list-style-type: none"> <li>In terms of durability and lifespan, QLED TVs are generally considered to be more reliable than OLED TVs.</li> <li>OLED TVs are susceptible to burn-in and image retention, which can occur when the same image is displayed on the screen for an extended period of time. Statement 2 is correct.</li> <li>QLED TVs, on the other hand, do not have these issues.</li> </ul>
<b>18. B</b>	<p>Statement 2&amp;3 are correct, Statement 1 is incorrect</p> <p>OLED (organic light-emitting diode) and QLED (quantum dot LED) are both types of display technologies used in televisions.</p> <p>The main difference between the two is the way they produce light. How does OLED work?</p> <ul style="list-style-type: none"> <li>OLED TVs use a layer of organic materials that emit light when an electric current is applied to them.</li> <li>This means that each individual pixel in an OLED display can turn on and off independently, producing perfect blacks and infinite contrast.</li> <li>OLED TVs also tend to be more energy efficient and have a wider viewing angle than other types of TVs.</li> </ul> <p>How does QLED work?</p> <ul style="list-style-type: none"> <li>QLED TVs, on the other hand, use a layer of tiny semiconductor crystals called quantum dots that emit light when excited by a backlight. Statement 3 is correct.</li> </ul>	<p><b>19. D</b></p> <p>All statements are correct</p> <p>What is Remission?</p> <ul style="list-style-type: none"> <li>The remission is reducing the period of a sentence without changing its character.</li> <li>The Code of Criminal Procedure (CrPC) provides for remission of prison sentences, which means the whole or a part of the sentence may be cancelled.</li> </ul>



	<p><b>Constitutional Provisions</b></p> <p>Under Article 72, the President can grant pardons, reprieves, respites or remissions of punishment or suspend, remit or commute the sentence of any person convicted of any offence; Statement 1 is correct.</p> <ul style="list-style-type: none"> <li>• In all cases where the punishment or sentence is by a court-martial,</li> <li>• In all cases where the punishment or sentence is for an offence under any law relating to the Union government's executive power, and</li> <li>• In all cases of death sentences.</li> </ul> <p>Under Article 161 of the Constitution, the governor can grant pardons, reprieves, respites and remissions of punishment or suspend, remit and commute the sentence of any person convicted of any offense against a state law.</p> <p>But, the pardoning power of the governor differs from that of the President in following two respects:</p> <ul style="list-style-type: none"> <li>• The President can pardon sentences inflicted by court martial (military courts) while the governor cannot. Statement 3 is correct.</li> <li>• The President can pardon death sentences while the governor cannot. Statement 2 is correct.</li> </ul>	<p>electrons. It plays a crucial role in separating the anode and cathode reactions. Statement II is correct.</p> <p><b>Components and Working of Polymer Electrolyte Membrane (PEM) Fuel Cell</b></p> <ul style="list-style-type: none"> <li>• <b>Anode and Cathode:</b> At the anode, hydrogen gas is typically supplied, and it undergoes electrochemical oxidation to produce protons (H<sup>+</sup>) and electrons (e<sup>-</sup>). The electrons flow through an external circuit, creating an electric current.</li> <li>• <b>Catalysts:</b> Platinum or other platinum-group metals are commonly used as catalysts on the anode and cathode to facilitate the electrochemical reactions.</li> <li>• <b>Proton Exchange:</b> Protons generated at the anode move through the PEM to the cathode, while electrons flow through an external circuit, creating an electrical current.</li> </ul> <p><b>Characteristics of Polymer Electrolyte Membrane Cell (PEMC)</b></p> <ul style="list-style-type: none"> <li>• <b>Operating Temperature:</b> PEM fuel cells operate at relatively low temperatures (typically between 60 to 80 degrees Celsius), allowing for quick start-up times (less warm up time) and increased efficiency in certain applications.</li> <li>• <b>Catalyst Requirement:</b> To facilitate the separation of electrons and protons in hydrogen, PEM fuel cells use a noble-metal catalyst, typically platinum leading to high cost.</li> <li>• <b>Carbon Monoxide Sensitivity:</b> The platinum catalyst in PEM fuel cells is highly sensitive to carbon monoxide (CO) poisoning. If the hydrogen used in the fuel cell is derived from a hydrocarbon fuel, it may contain trace amounts of carbon monoxide. The presence of CO can significantly degrade the performance of the platinum catalyst, leading to a decrease in fuel cell efficiency.</li> <li>• <b>Carbon Monoxide Reduction Reactor:</b> To address the issue of carbon monoxide poisoning, an additional reactor is often employed to reduce the levels of carbon monoxide in the fuel gas before it reaches the fuel cell. This reactor adds complexity and cost to the overall system.</li> <li>• <b>Water Management:</b> PEM fuel cells</li> </ul>
20.	<p><b>D</b></p> <p>About Polymer Electrolyte Membrane Fuel Cell:</p> <p>A Polymer Electrolyte Membrane (PEM) fuel cell is a type of electrochemical cell that converts chemical energy from the reaction of hydrogen with oxygen or another oxidising agent into electrical energy. Statement I is incorrect.</p> <p>The key component of a PEM fuel cell is the polymer electrolyte membrane, which serves as the electrolyte.</p> <p><b>Key feature of PEM fuel cells</b></p> <ul style="list-style-type: none"> <li>• <b>Polymer Electrolyte Membrane (PEM):</b> The PEM is a solid polymer electrolyte typically made of a perfluorosulfonic acid material, such as Nafion.</li> <li>• <b>Use of Polymer Electrolyte Membrane:</b> This membrane allows protons to pass through while blocking the passage of</li> </ul>	


	<p>require effective water management to maintain the hydration level of the polymer electrolyte membrane. Water produced during the electrochemical reactions needs to be removed from the membrane to prevent flooding.</p> <p><b>Applications of Polymer Electrolyte Membrane (PEM) Fuel Cell</b></p> <ul style="list-style-type: none"> <li>• PEM fuel cells are commonly used in various applications, including transportation (such as fuel cell vehicles), stationary power generation (backup power systems, distributed generation), and portable electronic devices.</li> <li>• These fuel cells are known for their high efficiency, fast start-up times, and ability to operate under varying loads.</li> <li>• However, challenges such as cost, durability, and sensitivity to contaminants in the hydrogen fuel remain areas of ongoing research and development.</li> </ul>	<ul style="list-style-type: none"> <li>• To support the "Make in India" campaign.</li> <li>• The scheme provides financial assistance of up to 75 percent of the total cost of certification, with a maximum subsidy ceiling of Rs 50,000, along with up to Rs 2 lakh in support for handholding/consultancy to achieve the next certification level. Statement 3 is incorrect.</li> <li>• For technology upgradation, the scheme offers assistance of up to Rs 3 lakhs for moving towards zero effect solutions/pollution control measures/cleaner technology.</li> <li>• MSMEs are charged Rs 10,000 for bronze certification, Rs 40,000 for silver certification, and Rs 90,000 for gold certification.</li> <li>• In December 2023, the MSME Ministry made the ZED scheme free for women-led MSMEs.</li> <li>• In addition, the government will now make guarantee payment of 100 percent financial support for the certification costs under the scheme.</li> <li>• The ZED certification is valid for three years, and the MSME units are required to re-apply for the certificate as per the validity of the scheme.</li> <li>• Currently, the scheme is applicable for manufacturing MSMEs only. Statement 4 is incorrect. It is led by Ministry of MSME.</li> </ul>
21.	<p><b>A</b></p> <p>Statement 2 is correct, Statement 1,3&amp;4 are incorrect</p> <p>About Zero Effect, Zero Defect Scheme (ZED)</p> <p>Launched in October 2016 and revamped in April 2022, the ZED scheme offers certification for environmentally conscious manufacturing under three certification levels (gold, silver, and bronze) classified according to 20 performance-based parameters such as quality management, timely delivery, process control, waste management, etc. Statement 1 is incorrect and statement 2 is correct.</p> <p><b>The major objectives of the ZED Scheme are:</b></p> <ul style="list-style-type: none"> <li>• To create proper awareness in MSMEs about ZED manufacturing and motivate them for the assessment of their enterprise for a ZED rating.</li> <li>• To drive manufacturing with the adoption of Zero Defect production processes without impacting the environment (Zero Effect).</li> <li>• To encourage MSMEs to constantly upgrade their quality standards in products and processes.</li> </ul>	<p><b>D</b></p> <p>All statements are incorrect</p> <p>About VIPER Rover</p> <ul style="list-style-type: none"> <li>• The Volatiles Investigating Polar Exploration Rover, or VIPER will get a close-up view of the location and concentration of ice and other resources at the Moon's South Pole.</li> <li>• It is NASA's first mobile robotic mission to the Moon. Statement 1 is incorrect.</li> <li>• It will directly analyze ice on the surface and subsurface of the Moon at varying depths and temperature conditions within four main soil environments. Statement 2 is incorrect.</li> </ul>
		22.

	<ul style="list-style-type: none"> <li>The data VIPER transmits back to Earth will be used to create resource maps, helping scientists determine the location and concentration of ice on the Moon and the forms it's in, such as ice crystals or molecules chemically bound to other materials.</li> <li>It navigates across the rugged terrain of the lunar South Pole and gathers valuable data that will help us better understand the history of the Moon and the environment where NASA is planning to send Artemis astronauts. Statement 3 is incorrect.</li> <li>Mission duration: 100 Earth days, covering 3 cycles of lunar day and night.</li> <li>It will land at the South Pole of the Moon in late 2024.</li> </ul>	<p>What is the Selection Process of Tableaux?</p> <ul style="list-style-type: none"> <li>The Ministry of Defence (MoD) is responsible for conducting the parade and coordinating arrangements with States and other agencies. Statement 1 is incorrect.</li> <li>Preparations for the ceremony, which has become synonymous with national pride and patriotism, begin months in advance. This process includes the selection and shortlisting of tableaux.</li> </ul> <p><b>Selection and Shortlisting:</b></p> <ul style="list-style-type: none"> <li>There is a standard procedure for selecting parade participants. Every year, months ahead of the event, the MoD Invites States, UTs and departments to submit sketches or designs for tableaux on a broad theme.</li> <li>For instance, the theme of 2024 is 'Viksit Bharat' (Developed India) and 'Bharat-Loktantra ki Matruka' (India-Mother of Democracy).</li> <li>The sketch or design must be simple, colourful, easy to comprehend and avoid statistical data and unnecessary details.</li> <li>The MoD constitutes a committee of experts from the fields of arts, culture, painting, sculpture, music, architecture, and choreography, among others, to screen proposals. Statement 2 is correct.</li> </ul> <p>What are the guidelines for tableau models and performers?</p> <ul style="list-style-type: none"> <li>Writing or use of logos on tableaux is not allowed except the name of states or Union Territories that are presenting it.</li> <li>The names of the states should be written in Hindi in the front, in English on the back and in regional language on the sides of the tableau.</li> <li>The number of performers on the trailer will not be more than 10 persons and artists performing on or along the tableau should be from the concerned state/UT only. Statement 4 is correct.</li> <li>One tractor and one trailer upon which a tableau would be fabricated, would be provided by the Ministry of Defence free of charge.</li> </ul>
<b>23.</b>	<p><b>B</b></p> <p>Statement 1,3,4&amp;5 are correct, Statement 2,6,7 are incorrect</p> <p>Examples of Direct Tax</p> <ul style="list-style-type: none"> <li>Income Tax</li> <li>Corporation Tax</li> <li>Minimum Alternate Tax</li> <li>Capital Gain Tax</li> <li>Securities Transaction Tax</li> <li>Commodities Transaction Tax</li> <li>Alternate Minimum Tax</li> <li>Estate Duty</li> <li>Wealth Tax</li> <li>Gift Tax</li> <li>Fringe Benefits Tax</li> </ul> <p>Examples of Indirect Tax</p> <ul style="list-style-type: none"> <li>Customs Duty</li> <li>Sales Tax</li> <li>Excise Duty</li> <li>Service Tax</li> <li>Value Added Tax</li> <li>Dividend Distribution Tax</li> </ul>	
<b>24.</b>	<p><b>B</b></p> <p>Statement 2,4 are correct, Statement 1,3 are incorrect</p>	

	<ul style="list-style-type: none"><li>There is no objection to the use of vehicles other than tractor and trailers for fabrication of tableaux to give them a different look. But these vehicles will have to be arranged by the sponsoring authorities themselves. Statement 3 is incorrect.</li></ul>	<b>Who sets them?</b> <ul style="list-style-type: none"><li>The standards and timeline for implementation are set by the Central Pollution Control Board under the Ministry of Environment, Forests and Climate Change. Statement 2 is correct.</li><li>In April 2020, India leapfrogged from BS-IV to the implementation of BS-VI. The central government has mandated that vehicle makers must manufacture, sell, and register only BS-VI (BS6) vehicles from April 1, 2020.</li><li>It is applicable for cars, trucks, buses, three-wheelers, and two-wheelers (motorcycles, scooters, and mopeds).</li><li>This emission norm does not apply to off-highway equipment and vehicles such as tractors, back-hoe loaders, excavators, etc.</li></ul> <b>Difference between BS-IV and BS-VI:</b> <ul style="list-style-type: none"><li>Both BS-IV and BS-VI are unit emission norms that set the maximum permissible levels for pollutants that an automotive or a two-wheeler exhaust can emit.</li><li>Compared to BS4, BS6 emission standards are stricter.</li><li>The main difference is in the amount of sulphur in the fuel, which is reduced from 50 ppm in BS IV fuel to 10 ppm in BS VI fuel for both gasoline and diesel. Hence, BSVI engines produce less harmful emissions and pollutants. Statement 3 is correct.</li></ul>																																							
25.	<p><b>C</b></p> <p>Statement 1,2,3 &amp; 6 are correct, Statement 4,5 are incorrect</p> 																																								
26.	<p><b>C</b></p> <p>All statements are correct</p> <p>About BS Norms</p> <ul style="list-style-type: none"><li>Bharat stage (BS) emission standards are laid down by the government to regulate the output of air pollutants from internal combustion engine and spark-ignition engine equipment, including motor vehicles.</li><li>India has adopted BS Emission Standards since 2000, modelled on European Union norms. Statement 1 is correct.</li><li>The first emission norms with the name 'India 2000' were introduced in the year 2000. BS2 and BS3 were introduced in 2005 and 2010, while BS4 norms came into effect in 2017 with stricter emission standards or norms.</li><li>The BS standards regulate tailpipe emissions of air pollutants, including particulate matter, SOx, and NOx, as well as carbon monoxide, hydrocarbons, and methane.</li></ul>	<p><b>27. A</b></p> <p>Pair 2 is correct, Pairs 1,3&amp; 4 are incorrect</p> <table><tr><th>Major Dams in India</th><th>State</th><th>River</th></tr><tr><td>Bhavani Sagar dam</td><td>Tamil Nadu</td><td>Bhavani</td></tr><tr><td>Tungabhadra Dam</td><td>Karnataka</td><td>Tungabhadra</td></tr><tr><td>Rihand Dam</td><td>Uttar Pradesh</td><td>Rihand</td></tr><tr><td>Maitthi Dam</td><td>Jharkhand</td><td>Barakar</td></tr><tr><td>Koyna Dam</td><td>Maharashtra</td><td>Koyna</td></tr><tr><td>Bisalpur Dam</td><td>Rajasthan</td><td>Banas</td></tr><tr><td>Mettur Dam</td><td>Tamil Nadu</td><td>Kaveri</td></tr><tr><td>Krishnarajasagar Dam</td><td>Karnataka</td><td>Kaveri</td></tr><tr><td>Indira Sagar Dam</td><td>Madhya Pradesh</td><td>Narmada</td></tr><tr><td>Cheruthoni Dam</td><td>Kerala</td><td>Cheruthoni</td></tr><tr><td>Sardar Sarovar Dam</td><td>Gujarat</td><td>Narmada</td></tr><tr><td>Nagarjuna Sagar Dam</td><td>Telangana</td><td>Krishna</td></tr></table>	Major Dams in India	State	River	Bhavani Sagar dam	Tamil Nadu	Bhavani	Tungabhadra Dam	Karnataka	Tungabhadra	Rihand Dam	Uttar Pradesh	Rihand	Maitthi Dam	Jharkhand	Barakar	Koyna Dam	Maharashtra	Koyna	Bisalpur Dam	Rajasthan	Banas	Mettur Dam	Tamil Nadu	Kaveri	Krishnarajasagar Dam	Karnataka	Kaveri	Indira Sagar Dam	Madhya Pradesh	Narmada	Cheruthoni Dam	Kerala	Cheruthoni	Sardar Sarovar Dam	Gujarat	Narmada	Nagarjuna Sagar Dam	Telangana	Krishna
Major Dams in India	State	River																																							
Bhavani Sagar dam	Tamil Nadu	Bhavani																																							
Tungabhadra Dam	Karnataka	Tungabhadra																																							
Rihand Dam	Uttar Pradesh	Rihand																																							
Maitthi Dam	Jharkhand	Barakar																																							
Koyna Dam	Maharashtra	Koyna																																							
Bisalpur Dam	Rajasthan	Banas																																							
Mettur Dam	Tamil Nadu	Kaveri																																							
Krishnarajasagar Dam	Karnataka	Kaveri																																							
Indira Sagar Dam	Madhya Pradesh	Narmada																																							
Cheruthoni Dam	Kerala	Cheruthoni																																							
Sardar Sarovar Dam	Gujarat	Narmada																																							
Nagarjuna Sagar Dam	Telangana	Krishna																																							

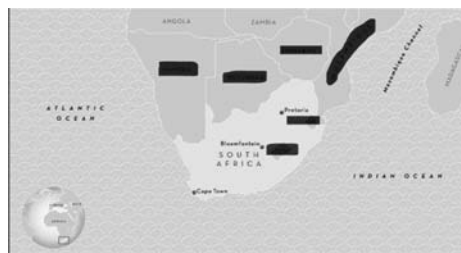
	<table border="1"> <tr> <td>Hirakud dam</td><td>Odisha</td><td>Mahanadi</td></tr> <tr> <td>Bhakra Nangal Dam</td><td>Punjab-Himachal Pradesh Border</td><td>Sutlej</td></tr> <tr> <td>Thein Dam project</td><td>Punjab</td><td>Ravi</td></tr> <tr> <td>Beas Project (Sharda Sahayak Project)</td><td>A joint venture of Punjab, Haryana, and Rajasthan, Uttar Pradesh</td><td>Beas</td></tr> <tr> <td>Tehri Dam</td><td>Uttarakhand</td><td>Bhagirathi</td></tr> <tr> <td>Dulhasti project</td><td>Jammu and Kashmir</td><td>Chenab</td></tr> <tr> <td>Salal project</td><td>Jammu and Kashmir</td><td>Chenab</td></tr> <tr> <td>Banasagar project</td><td>M.P., Bihar, and U.P.</td><td>Son</td></tr> <tr> <td>Rihand Scheme Reservoir</td><td>Uttar Pradesh</td><td>Rihand</td></tr> <tr> <td>Damodar valley multipurpose project four dams: Tilaiya and Maithon (on the Barakar River), Konar (Konar River), and Panchet (Damodar River).</td><td>West Bengal (also shared by Jharkhand).</td><td>Damodar</td></tr> </table>	Hirakud dam	Odisha	Mahanadi	Bhakra Nangal Dam	Punjab-Himachal Pradesh Border	Sutlej	Thein Dam project	Punjab	Ravi	Beas Project (Sharda Sahayak Project)	A joint venture of Punjab, Haryana, and Rajasthan, Uttar Pradesh	Beas	Tehri Dam	Uttarakhand	Bhagirathi	Dulhasti project	Jammu and Kashmir	Chenab	Salal project	Jammu and Kashmir	Chenab	Banasagar project	M.P., Bihar, and U.P.	Son	Rihand Scheme Reservoir	Uttar Pradesh	Rihand	Damodar valley multipurpose project four dams: Tilaiya and Maithon (on the Barakar River), Konar (Konar River), and Panchet (Damodar River).	West Bengal (also shared by Jharkhand).	Damodar	<ul style="list-style-type: none"> <li>PRANA (Portal for Regulation of Air-pollution in NAC) has been also launched monitor the implementation of NCAP.</li> <li>NCAP's progress in last 5 years reveals a mixed scenario.</li> <li>As per studies, PM2.5 in 27 cities recorded improvements out of 49 cities. Similarly, for PM10, 24 cities saw an improvement out of 46.</li> <li>In terms of cities, Varanasi achieved a significant reduction in PM2.5 and PM10 levels, along with Agra and Jodhpur.</li> </ul>
Hirakud dam	Odisha	Mahanadi																														
Bhakra Nangal Dam	Punjab-Himachal Pradesh Border	Sutlej																														
Thein Dam project	Punjab	Ravi																														
Beas Project (Sharda Sahayak Project)	A joint venture of Punjab, Haryana, and Rajasthan, Uttar Pradesh	Beas																														
Tehri Dam	Uttarakhand	Bhagirathi																														
Dulhasti project	Jammu and Kashmir	Chenab																														
Salal project	Jammu and Kashmir	Chenab																														
Banasagar project	M.P., Bihar, and U.P.	Son																														
Rihand Scheme Reservoir	Uttar Pradesh	Rihand																														
Damodar valley multipurpose project four dams: Tilaiya and Maithon (on the Barakar River), Konar (Konar River), and Panchet (Damodar River).	West Bengal (also shared by Jharkhand).	Damodar																														
28.	<p><b>A</b></p> <p>Context: National Clean Air Programme (NCAP) completes 5 years.</p> <p>Ministry of Environment, Forest and Climate Change (MoEFCC) launched NCAP in 2019 in the backdrop of the rising air pollution in the country.</p> <p>It is the first-ever effort in the country to frame a national framework for air quality management with a time-bound reduction target. Statement 1 is correct.</p> <p><b>About NCAP:</b></p> <ul style="list-style-type: none"> <li>About: Aims to improve air quality in 131 cities (non-attainment cities (NAC) and Million Plus Cities) in 24 States by engaging all stakeholders.</li> <li>The cities which are exceeding the National Ambient Air Quality Standards (NAAQS) for 5 consecutive years are identified as NAC by Central Pollution Control Board (CPCB).</li> <li>The NCAP's initial target was to reduce two key air pollutants, PM10 and PM2.5, by 20-30% by 2024, with 2017 levels as the base. In September 2022, the Centre revised this to a 40% reduction by 2026. Statement 2 is incorrect.</li> <li>Implementation: CPCB at the national level.</li> <li>Under it, City Action Plan's (CAPs) are implemented by state government and its agencies at state and city level (Municipal bodies).</li> </ul>	<p>29. <b>B</b></p> <p>The Global Risks Report is published by the World Economic Forum.</p> <p>WEF's Global Risks report 2024: Misinformation, Economic Uncertainty, and Environmental Perils</p> <p>Misinformation and Societal Polarization: The Global Risks Report 2024 highlights that risks posed by AI-driven misinformation and disinformation are closely linked with societal polarization.</p> <ul style="list-style-type: none"> <li>Environment of Elections and Concerning Nexus of Misinformation and Societal Polarization: With elections in major economies in the next two years, the main concern is for the nexus between falsified information and potential societal unrest.</li> <li>Misinformation and disinformation is the 1st risk in India</li> </ul> <p><b>Economic Uncertainty:</b> There will be persistent economic uncertainty and widening economic and technological gaps in the coming years.</p> <p><b>Societal Issues:</b> Over the longer term, a significant portion of the population may face challenges accessing economic opportunities, potentially leading to societal issues.</p> <p><b>Cost of Living Crisis:</b> A persistent cost-of-living crisis may lead to uncertainties in the global economic stability.</p> <p><b>Noticeable Risks:</b> Inflation and economic downturn have emerged noteworthy top risks.</p>																														

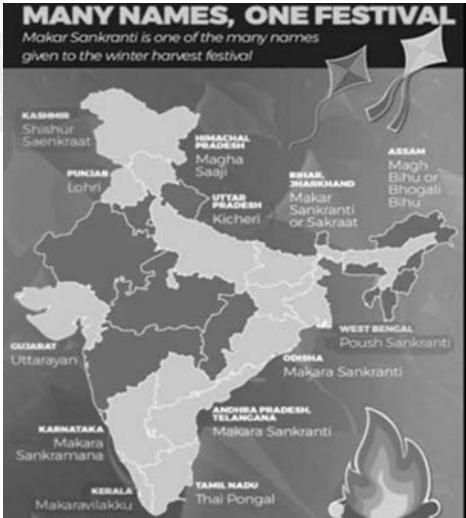
	<p><b>Interstate Armed Conflict:</b> The risk of interstate armed conflict is the immediate concern.</p> <p><b>Risk of Conflict Contagion:</b> The ongoing conflicts, coupled with underlying geopolitical tensions pose the risk of conflict contagion.</p> <p>Absence of Secure Livelihoods &amp; Arising Threats: In the absence of secure livelihood options, individuals may be prone to crime, militarization, or radicalization.</p> <p><b>Growing Isolation:</b> The Global Risks Report 2024 says countries with a history of conflict or vulnerability to climate change may face growing isolation from investment, technologies and job opportunities.</p> <p><b>Environmental Risks:</b> There is continued dominance of environmental risks in the World.</p> <ul style="list-style-type: none"> <li>• <b>Severe Risks:</b> Extreme weather events, critical shifts in Earth systems, biodiversity loss, ecosystem collapse, natural resource shortages, and pollution emerge as severe risks over the next decade.</li> </ul>	<ul style="list-style-type: none"> <li>• Location: The Reserve is located in the southern reaches of the Satpura hills in the Seoni and Chhindwara districts in Madhya Pradesh and continues in Nagpur district in Maharashtra as a separate Sanctuary.</li> </ul>
30.	<p><b>C</b></p> <p><b>About India's First Dark Sky Park:</b></p> <ul style="list-style-type: none"> <li>• The Pench Tiger Reserve (PTR) in Maharashtra is India's first Dark Sky Park within a tiger reserve for earmarking areas around the park that restrict light pollution for stargazers to access pristine dark skies.</li> <li>• Dark Sky Place certification focuses on lighting policy, dark sky-friendly retrofits, outreach and education, and monitoring the night sky.</li> <li>• This designation positions PTR as a sanctuary where tourists can witness celestial spectacles, shielded from the intrusion of artificial light pollution.</li> <li>• PTR became the fifth such park in Asia.</li> <li>• The certification was given by the International Dark-Sky Association, a global dark-sky movement to promote astronomy.</li> </ul>	<p><b>31. C</b></p> <p><b>About LiDAR</b></p> <ul style="list-style-type: none"> <li>• Lidar, which stands for Light Detection and Ranging, is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth.</li> <li>• These light pulses-combined with other data recorded by the airborne system - generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. Statement I is correct</li> <li>• A lidar instrument principally consists of a laser, a scanner, and a specialized GPS receiver.</li> <li>• Airplanes and helicopters are the most commonly used platforms for acquiring lidar data over broad areas.</li> </ul> <p><b>How Does It Work?</b></p> <ul style="list-style-type: none"> <li>• A LiDAR system calculates how long it takes for beams of light to hit an object or surface and reflect back to the laser scanner.</li> <li>• The distance is then calculated using the velocity of light. These are known as 'Time of Flight' measurements.</li> </ul> <p>Two types of lidar are topographic and bathymetric.</p> <ul style="list-style-type: none"> <li>• Topographic lidar typically uses a near-infrared laser to map the land, while bathymetric lidar uses water-penetrating green light to also measure seafloor and riverbed elevations.</li> </ul> <p>Lidar systems allow scientists and mapping professionals to examine both natural and man-made environments with accuracy, precision, and flexibility.</p> <p>It is used in a wide range of land management and planning efforts, including hazard assessment (including lava flows, landslides, tsunamis, and floods), forestry, agriculture, geologic mapping, and watershed and river surveys.</p>

	<p>What is the difference between Radar and LiDAR?</p> <ul style="list-style-type: none"> <li>LiDAR works in a similar way to Radar and Sonar yet uses light waves from a laser, instead of radio or sound waves. Statement II is incorrect.</li> </ul>	<ul style="list-style-type: none"> <li>It is the statutory committee constituted under the "Rules for the Manufacture, Use/Import/Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells (Rules, 1989)" framed under Environment (Protection) Act, 1986.</li> <li>It functions under the Ministry of Environment, Forest, and Climate Change (MoEF&amp;CC). Statement 1 is correct.</li> </ul> <p><b>Functions:</b></p> <ul style="list-style-type: none"> <li>It is responsible for the approval of activities involving large-scale use of hazardous living microorganisms and recombinants in research and industrial production from an environmental perspective. Statement 2 is correct.</li> <li>The committee is also responsible for the appraisal of proposals relating to the release of genetically engineered (GE) organisms and products into the environment, including experimental field trials.</li> <li>Clearance of GEAC is mandatory for the environmental release of GM crops.</li> </ul> <p>The committee or any person authorized by it has the power to take punitive action under the Environment Protection Act. Statement 3 is incorrect.</p> <p><b>Composition:</b></p> <ul style="list-style-type: none"> <li>GEAC is chaired by the Special Secretary/Additional Secretary of MoEF&amp;CC and co-chaired by a representative from the Department of Biotechnology (DBT). Statement 4 is correct.</li> <li>Presently, it has 24 members and meets every month to review the applications in the areas indicated above.</li> <li>The members comprise experts from other ministries as well as institutions such as the ICAR, ICMR, CCMB, and so on.</li> </ul>
32.	<p><b>D</b></p> <p>About Saqqara</p> <ul style="list-style-type: none"> <li>It is part of the necropolis (burial place) of the ancient Egyptian city of Memphis.</li> <li>It is located on the western bank of the Nile, 40 kilometres south of Cairo, the capital of Egypt.</li> <li>Saqqara's name derives from the name of the burial god Sokar.</li> <li>It was an active burial ground for more than 3500 years and is Egypt's largest archaeological site.</li> <li>Sakkara is best known for the Step Pyramid, the oldest of Egypt's 97 pyramids.</li> <li>It was built in 2700 BC for King Djoser (Zoser) of the 3rd Dynasty by the architect and genius Imhotep, who was the first to build stone tombs in honor of the king's majesty.</li> <li>Today, it is considered one of the oldest stone structures built by man, and it was the first time the Ancient Egyptians would attempt to use limestone.</li> </ul>	
33.	<p><b>A</b></p> 	
34.	<p><b>C</b></p> <p>Statement 1,2&amp;4 are correct, Statement 3 is incorrect</p> <p>About Genetic Engineering Appraisal Committee (GEAC)</p>	<p><b>35. D</b></p> <p>All statements are correct</p> <p>Context:</p> <p>Recently, India's first National Highway Steel Slag road section (on NH-66 Mumbai-</p>

<p>Goa National Highway) was inaugurated. Statement 3 is correct.</p> <p>More in news</p> <ul style="list-style-type: none"> <li>• It was developed by CSIR-Central Road Research Institute (CSIR-CRRI) in collaboration with the Union Ministry of Steel. Statement 1 is correct.</li> <li>• It involved converting around 80,000 tons of CONARC Steel slag into processed steel slag aggregates.</li> <li>• The processed steel slag aggregates exhibit superior mechanical properties compared to natural aggregates, making them a preferred choice for all layers of the road instead of natural aggregates.</li> <li>• It is built with 28% less thickness in comparison to conventional bituminous roads.</li> </ul> <p><b>Steel Slag Road Technology</b></p> <ul style="list-style-type: none"> <li>• It is focused on Waste to Wealth, turning steel industry waste into a valuable resource, contributing to the construction of robust and eco-friendly national highways in India.</li> <li>• The technology involves processing the steel slag to remove impurities and metal content and then using it as an aggregate for road base or sub-base layers. Statement 2 is correct.</li> <li>• The processed steel slag has high strength, hardness, abrasion resistance, skid resistance, and drainage capacity, making it suitable for road construction.</li> <li>• CSIR-CRRI has implemented steel slag in road construction projects in Gujarat, Jharkhand, Maharashtra and Arunachal Pradesh.</li> <li>• The 1st road made with this technology in Surat, Gujarat, has become famous for its technological excellence.</li> <li>• Border Roads Organization (BRO) has constructed a steel slag road in Arunachal Pradesh along with CRRI and Tata Steel on the India-China border.</li> </ul>	<p><b>36. D</b></p> <p><b>Context:</b></p> <p>Multi-institution study found India's oldest living city in Vadnagar, Gujarat.</p> <ul style="list-style-type: none"> <li>• Vadnagar town is a multi-layered and multi-cultural mercantile settlement with its history stretching back to nearly 8th Century BCE.</li> <li>• Explorations and excavations show evidence of a human settlement that is contemporary to Late-Vedic/pre-Buddhist Mahajanapadas or oligarchic republics.</li> <li>• The earliest archaeological record is the rock-inscription of Emperor Ashoka during the Mauryan period (320-185 BCE) at Sudarsana Lake, Girnar hill, Gujarat.</li> <li>• A joint study by the IIT Kharagpur has found evidence of cultural continuity in Vadnagar even after the collapse of Indus Valley Civilisation (IVC), thus making it likely that the 'Dark Age' was a myth.</li> <li>• The period between the collapse of IVC and the emergence of the Iron Age and cities like Gandhar, Koshal, and Avanti is often depicted as a Dark Age by archaeologists.</li> <li>• Excavation revealed the presence of seven cultural stages (periods) namely, Mauryan, Indo-Greek, Indo-Scythian or Shaka-Kshatrapas (AKA 'Satraps', descendants of provincial governors of ancient Achaemenid Empires, Hindu-Solankis, Sultanate-Mughal (Islamic) to Gaekwad-British colonial rule.</li> </ul> <p><b>About Vadnagar</b></p> <ul style="list-style-type: none"> <li>• It was a multicultural and multireligious (Buddhist, Hindu, Jain and Islamic) settlement, currently located in the Mehsana district of North Gujarat, India.</li> <li>• It is also known by names like Vridhanagar, Anandapur, Anantapur and Nagar.</li> <li>• It is an L-shaped town with Sharmishtha Lake on its northeastern edge.</li> <li>• The town represents a continuously evolving historic urban landscape/area which played a major role in the</li> </ul>
--	--

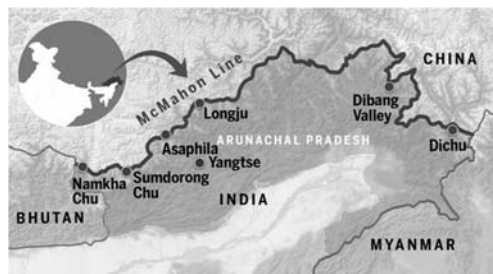


	<p>hinterland trade network of Western India.</p> <ul style="list-style-type: none"><li>World Heritage Site (UNESCO): Vadnagar was added to the tentative list in December 2022.</li></ul>	<p><b>38. C</b></p> <p>Statement 1,2,3&amp;5 are correct, Statement 4 is incorrect.</p>  <p><b>Context:</b></p> <p>Judges at the International Court of Justice (ICJ) opened two days of legal arguments in a case filed by South Africa accusing Israel of genocide in Gaza war.</p> <p><b>About Issue</b></p> <ul style="list-style-type: none"><li>South Africa had moved the ICJ, invoking the Convention on the Prevention and Punishment of the Crime of Genocide, 1948, against Israel, accusing it of committing genocide during its ongoing military campaign in Gaza.</li><li>Both South Africa and Israel are signatories to the Genocide Convention of 1948.</li><li>Earlier Instances: In 2019, the Gambia had approached the ICJ against Myanmar for its alleged genocide against the Rohingya community.</li></ul>
<p><b>37. B</b></p> <p><b>Context</b></p> <p>India's masur (lentil) production is estimated to touch an all-time high of 1.6 million tonnes in 2023-24.</p> <p><b>About</b></p> <ul style="list-style-type: none"><li>The total masur acreage has increased to 1.94 million hectares in the ongoing rabi season, when compared to 1.83 million hectares in the year-ago period.</li><li>Despite being the world's largest producer and consumer of pulses, India imports certain pulses, including masur and tur, to meet domestic shortages.</li></ul> <p><b>Production of Pulses in India</b></p> <ul style="list-style-type: none"><li>India is the largest producer (25% of global production), consumer (27% of world consumption) and importer (14%) of pulses in the world.</li><li>Pulses account for around 20 percent (one-fifth) of the area under food grains and contribute around 7-10 percent of the total foodgrains production in the country. Statement 2 is correct</li><li>Though pulses are grown in both Kharif and Rabi seasons, Rabi pulses contribute more than 60 percent of the total production. Statement 1 is incorrect.</li><li>Gram is the most dominant pulse having a share of around 40 percent in the total production followed by Tur/Arhar at 15 to 20 percent and Urad/Black Matpe and Moong at around 8-10 percent each.</li><li>The main regions with high productivity are Punjab, Haryana, Western Uttar Pradesh, West Bengal delta region, coastal Andhra Pradesh, Tamil Nadu, Kerala, coastal and eastern Karnataka and some parts of Maharashtra.</li></ul>	<p><b>39. A</b></p> <p>Why in news?</p> <p>Recently, INS Cheetah, Guldar and Kumbhir were decommissioned from the service. They were decommissioned after 40 years of service. The decommissioning event was conducted at Port Blair in a traditional ceremony.</p> <p><b>What are these ships?</b></p> <ul style="list-style-type: none"><li>Built at: Gdynia Shipyard, Poland.</li><li>They are Polnocny class Landing Ships.</li><li>Note: The Polnocny class ships are amphibious warfare vessels.</li></ul>	

	<ul style="list-style-type: none"> <li>• The INS Cheetah joined the Indian Navy in 1984, followed by Guldar in 1985, and Kumbhir in 1986.</li> <li>• They were initially stationed in mainland India before establishing their permanent base in the Andaman and Nicobar Command.</li> </ul> <p>What was significance of these ships?</p> <ul style="list-style-type: none"> <li>• Over the years, these ships traversed a staggering 17 lakh nautical miles, spending over 12,300 days at sea.</li> <li>• They served as the backbone of amphibious operations in the region, conducting over 1300 beaching operations to land troops ashore and secure the islands.</li> <li>• The ships played a crucial role in numerous maritime security missions and humanitarian assistance efforts.</li> <li>• They participated in Operation Aman during the IPKF operations in Sri Lanka and Operation Tasha, a joint venture with the Indian Coast Guard to curb smuggling and illegal immigration.</li> <li>• They also provided critical relief in the aftermath of the 1997 cyclone in Sri Lanka and the devastating 2004 Indian Ocean Tsunami.</li> </ul>	<p>gates, and others.</p> <p>What are the key applications of Quantum gates in quantum computing?</p> <ul style="list-style-type: none"> <li>• <b>Quantum Circuits:</b> Quantum gates are used to construct quantum circuits, analogous to classical circuits in traditional computers.</li> <li>• <b>Quantum Algorithms:</b> Quantum gates play a vital role in implementing quantum algorithms, such as Shor's algorithm for integer factorization and Grover's algorithm for unstructured search problems.</li> <li>• <b>Quantum Machine Learning:</b> Quantum gates are explored for applications in quantum machine learning algorithms.</li> </ul> <p><b>41. D</b></p> <p>All pairs are correct.</p>
<p><b>40</b></p>	<p><b>D</b></p> <p><b>What are Quantum Gates?</b></p> <ul style="list-style-type: none"> <li>• Quantum gates are fundamental components in quantum computing that manipulate quantum bits or qubits.</li> <li>• These gates perform operations on qubits, allowing the creation of quantum circuits that execute complex calculations.</li> <li>• Unlike classical bits in traditional computing, which can only be in a state of 0 or 1, qubits can exist in super positions of both states simultaneously.</li> <li>• Quantum gates enable the implementation of quantum algorithms by performing operations such as the application of quantum logic gates like Hadamard gates, CNOT (controlled NOT)</li> </ul>	 <p>Ellu Birodhu in Karnataka; Hangrai in Tripura; Poush Sangkranti in West Bengal; Pusna in West Bengal, Assam, and Meghalaya; Shishur Saenkraat in Kashmir Valley; Tusu in West Bengal, Jharkhand, Odisha; and Uttarayan in Gujarat; Ugadi in Andhra Pradesh, Karnataka &amp; Telangana; Nuakhai in Odisha; Onam in Kerala; Gudi Padwa in Maharashtra, Karnataka &amp; Andhra Pradesh, Khichdi in Eastern Uttar Pradesh and Magh Bihu or Bhogali Bihu in Assam.</p>

	<p><b>Significance of these festivals</b></p> <ul style="list-style-type: none"> <li>Harvest festivals signify cultural, social, and religious aspects.</li> <li>The festival is celebrated to mark the beginning of the harvesting season in the country and is probably the only one that is celebrated in every region of India, on the same day, but in different manners and names.</li> <li>Sun's northward Movement: It is associated with the sun's northward journey.</li> </ul>		<ul style="list-style-type: none"> <li>It symbolises the significance of two of the oldest cities Ayodhya in India and Ayutthaya in Thailand, the historic legacies, rich cultural ties and shared historical narratives dating back to several centuries.</li> <li>Indigenously built Indian Naval ships Kulish and IN LCU 56 participated in the inaugural edition of the exercise.</li> <li>With the institution of a Bilateral Exercise, both navies have taken a step towards strengthening operational synergy and progressively increasing the exercise complexity.</li> <li>During the maiden edition of the exercise, participating units from both navies conducted surface and anti-air exercises including weapon firing, seamanship evolutions and tactical manoeuvres.</li> <li>The 36th edition of India-Thailand Coordinated Patrol (Indo-Thai CORPAT) was also conducted along with the maiden bilateral exercise.</li> <li>Maritime Patrol Aircraft from both navies participated in the Sea Phase of the exercise.</li> <li>As part of Government of India's vision of SAGAR (Security And Growth for All in the Region), the Indian Navy has been proactively engaging with countries in the Indian Ocean Region towards enhancing regional maritime security.</li> <li>The Indian Navy and Royal Thai Navy have maintained a close and friendly relationship which has strengthened over the years.</li> </ul>
42.	<p><b>C</b></p> <p>What is Green Fuels Alliance India (GFAI)?</p> <ul style="list-style-type: none"> <li>Green Fuels Alliance India (GFAI) is an alliance between the Denmark and India to boost collaborative efforts in the sustainable energy solutions sector. Statement 1 is correct.</li> <li>Led by: Danish Embassy and the Consulate General of Denmark in India.</li> <li>Aim: to advance the green fuels sector, including green hydrogen, through innovation and partnerships.</li> <li>Objective: To promote sustainable energy growth in India by establishing an ecosystem that encourages collaboration among businesses, government entities, research institutions, and financial stakeholders. Statement 2 is correct.</li> </ul> <p><b>Founding members of the GFAI</b></p> <ul style="list-style-type: none"> <li>Nine prominent Danish organisations such as Maersk, Topsoe, Umwelt Energy, Mash Makes, European Sustainable Solutions, Novozymes, Danfoss, Brdr. Christensen, and Hydrogen Denmark.</li> </ul> <p>Advisory board members of the GFAI</p> <ul style="list-style-type: none"> <li>India Hydrogen Alliance, Energy Consortium at the Indian Institute of Technology Madras, the Danish Energy Agency and State of Green.</li> </ul>		
43.	<p><b>B</b></p> <p>About Exercise Ayutthaya</p> <ul style="list-style-type: none"> <li>The India-Thailand Bilateral Exercise is being named as 'Ex-Ayutthaya', which literally translates to 'The Invincible One' or 'Undefeatable'.</li> </ul>		
		44.	<p><b>A</b></p> <p><b>About Instrument Landing System</b></p> <ul style="list-style-type: none"> <li>It is a ground-based radio navigation system that provides pilots with accurate information about their aircraft's position and alignment with the runway. Statement I is correct.</li> </ul> <p>It comprises two main components, the localiser, and the glide slope,</p> <ul style="list-style-type: none"> <li>The localizer ensures lateral alignment, guiding the aircraft along the correct azimuth toward the runway centreline.</li> </ul>

	<ul style="list-style-type: none"> <li>• Simultaneously, the glide slope provides vertical guidance, aiding pilots in maintaining the proper descent angle for a safe landing.</li> <li>• It guides pilots along both horizontal and vertical axes, aiding them in maintaining the correct approach path during low-visibility conditions. Statement II is correct.</li> <li>• With the help of ILS systems, pilots are able to understand how their aircraft is positioned with respect to an airport runway without needing to physically see it.</li> <li>• This system warns pilots in case their jets are not flying to meet the runway's centreline.</li> <li>• It will also warn pilots in case their jets are too low or too high and thus, at the risk of undershooting or overshooting the runway.</li> <li>• Both of these tasks performed by the Instrument Landing System are crucial in ensuring landing in cases where the pilots aren't able to see the runway clearly.</li> <li>• In addition to ILS, modern aircraft are equipped with advanced avionics and autopilot systems that enhance precision during foggy landings.</li> <li>• These systems, often coupled with radar altimeters, help maintain a stable descent and ensure the aircraft follows the designated glide path with minimal reliance on external visibility.</li> <li>• It is a standard International Civil Aviation Organisation (ICAO) precision landing aid that is used to provide accurate azimuth (angular measurement in a spherical coordinate system) and descent guidance signals for guidance to flight for landing on the runway under adverse weather conditions.</li> </ul>	<p>About Committee</p> <ul style="list-style-type: none"> <li>• It was set up by the Ministry of Defence (MoD) in 2023 to review the functioning of the Defence Research and Development Organisation (DRDO).</li> <li>• Need: The government's decision to review the functioning of DRDO comes against the backdrop of several of its projects suffering from huge delays.</li> </ul> <p><b>Major Recommendations:</b></p> <ul style="list-style-type: none"> <li>• Set up Defence Technology Council: Chaired by the Prime Minister, with the Defence Minister and the National Security Advisor as its Vice Presidents</li> <li>• It should determine the country's defence technology roadmap and decide on major projects and their execution</li> <li>• It is proposed to have an executive committee chaired by the Chief of Defence Staff.</li> <li>• The Principal Scientific Advisor, along with the three service chiefs and their vice chiefs, will also be its members.</li> <li>• Furthermore, it will include representation from academia and industry, with two members from each sector.</li> <li>• Department of Defence Science, Technology, and Innovation: It is proposed to be headed by a technocrat, will not only promote defence research and development in the academic and start-up ecosystem but also serve as the secretariat for the Defence Tech Council, chaired by the Prime Minister.</li> <li>• It will draw scientists from DRDO and academia, building a repository of knowledge on production expertise and conducting background research for the DTC, hence aiding its decisions on technology production.</li> <li>• For DRDO: The DRDO should focus on its original goal of research and development for defence and refrain from involving itself in productization, production cycles, and product management, tasks that are more suitable for the private sector.</li> <li>• At present, DRDO remains engaged in</li> </ul>
45.	<p><b>A</b></p> <p><b>Context</b></p> <p>A nine-member committee headed by former Principal Scientific Advisor to government, K Vijay Raghavan has submitted its report recently.</p>	


	all aspects, from research to development to production, in its projects.	47.	A
46.	<p><b>C</b></p> <p><b>Context</b></p> <p>The government has launched the Members of Parliament Local Area Development Scheme (MPLADS) e-SAKSHI Mobile Application for revised fund flow procedure under MPLAD Scheme.</p> <p><b>About</b></p> <ul style="list-style-type: none"> <li>• The mobile app would offer convenience and accessibility, allowing MPs to propose, track, and oversee the projects at their fingertips.</li> <li>• This real-time access enhances decision-making processes, enabling swift responses to emerging needs or issues.</li> <li>• The application will streamline the communication between MPs and relevant authorities, facilitating a more efficient exchange of information.</li> </ul> <p><b>About MPLAD Scheme</b></p> <ul style="list-style-type: none"> <li>• The MPLADS is a Plan Scheme fully funded by the Government of India.</li> <li>• The annual MPLADS fund entitlement per MP constituency is Rs. 5 crores.</li> <li>• MPs are to recommend every year, works costing at least 15 percent of the MPLADS entitlement for the year for areas inhabited by Scheduled Caste population and 7.5 percent for areas inhabited by Scheduled Tribes population.</li> <li>• Lok Sabha Members can recommend works within their Constituencies and Elected Members of Rajya Sabha can recommend works within the State of Election.</li> <li>• Nominated Members of both the Rajya Sabha and Lok Sabha can recommend works anywhere in the country.</li> <li>• All works to meet locally felt infrastructure and development needs, with an emphasis on creation of durable assets in the constituency are permissible under MPLADS as prescribed in the scheme guidelines.</li> </ul>	 <p><b>The India-China Borders:</b></p> <ul style="list-style-type: none"> <li>• India considers the LAC to be 3,488 km long, while the Chinese consider it to be only around 2,000 km.</li> <li>• It is divided into three sectors: the eastern sector which spans Arunachal Pradesh and Sikkim, the middle sector in Uttarakhand and Himachal Pradesh, and the western sector in Ladakh.</li> <li>• Western Sector or Aksai Chin Sector: The region is claimed by the Chinese government post-1962 war as an autonomous part of the Xinjiang region which was originally a part of the Indian state of Jammu and Kashmir.</li> <li>• Middle Sector: It is the less disputed section of the Indo-China border but the recent Doklam standoff and Nathu La Pass trading issues have brought distress at all levels.</li> <li>• Eastern Sector or Arunachal Pradesh: McMahon Line had differentiated India and China in this sector but in the 1962 war the People's Liberation Army covered 9000 sq. km. area.</li> <li>• The announcement of a unilateral ceasefire made them step back on the international borderline.</li> <li>• However, China has been claiming that area as their own and recently they have started to claim the whole of Arunachal Pradesh as their own.</li> </ul>	
		48.	A
			<p>Pair 1 is correct, Pairs 2,3,4 are incorrect</p> <p>Mount Merapi, is an active stratovolcano located on the border between the province of Central Java and the Special Region of Yogyakarta, Indonesia. It is the most active</p>

	<p>volcano in Indonesia and has erupted regularly since 1548.</p> <p>Nyiragongo (Democratic Republic of the Congo): This volcano has been erupting continuously since October 2023, with lava flows and gas emissions posing a threat to nearby communities.</p> <p>Bagana (Papua New Guinea): Ongoing eruptions since December 2023, are generating ash and lava flows in this frequently active volcano.</p> <p>Lewotobi (Indonesia): Situated on Flores Island, Lewotobi's eruption started on December 2023. It is ejecting ash and lava flows, impacting nearby villages.</p>		<p>choking, eye gouging, murderous assault, and attempted or actual breach of flight crew compartment.</p> <p>What penalties can unruly behaviour by a flight passenger attract?</p> <ul style="list-style-type: none"> <li>• The airline can ban the unruly passenger for up to 30 days immediately after the incident.</li> <li>• If the Internal Committee doesn't reach a decision within 30 days, the passenger will be allowed to fly. Statement 3 is correct.</li> <li>• Airlines must keep a database of unruly passengers, sharing it with the DGCA and other airlines to maintain a No-Fly List.</li> <li>• Level 1 and 2 offenses may result in flying bans of up to three months and six months, respectively.</li> <li>• Level 3 offense incurs a minimum 2-year ban with no maximum limit.</li> <li>• Appeal- Banned individuals can appeal within 60 days to an Appellate Committee led by a retired High Court judge. An appeal against the appellate panel's decision shall be made to a High Court. Statement 4 is correct.</li> </ul>
49.	<p><b>D</b></p> <p>All statements are correct</p> <p>How are airlines supposed to respond to incidents of unruly passenger behaviour?</p> <p>The DGCA has issued guidelines known as 'Civil Aviation Requirements (CAR)' to all airlines. It outlines procedures to be followed in handling varying degrees of unruly passenger behaviour during and after incidents. Statement 1 is correct.</p> <ul style="list-style-type: none"> <li>• The airline should first notify passengers that unruly behaviour, as per guidelines, may lead to possible arrest.</li> <li>• If the pilots and central control determine that cabin crew cannot manage the unruly passenger, they must promptly land at the nearest airport.</li> <li>• Upon landing, an airline representative will file an FIR (First Information Report) with the relevant security agency at the aerodrome, where the unruly passenger will be handed over.</li> </ul> <p>There are 3 different levels of unruly passenger behaviour outlined in the guidelines: Statement 2 is correct.</p> <ol style="list-style-type: none"> <li>1. Level 1: Unruly behaviour, including physical gestures, verbal harassment, and unruly inebriation.</li> <li>2. Level 2: Physically abusive behaviour, including pushing, kicking, hitting, and grabbing or inappropriate touching or sexual harassment.</li> <li>3. Level 3: Life-threatening behaviour, including damage to aircraft operating systems, physical violence such as</li> </ol>	50.	<p><b>D</b></p> <p><b>All pairs are correct</b></p> <p><b>Kolam Tribe:</b></p> <ul style="list-style-type: none"> <li>• Kolam tribes, also known as Kolamboli, Kulme and Kolmi, occupy a major portion of Madhya Pradesh.</li> <li>• The main concentration of this tribe is on the plains and in the mountainous region.</li> <li>• These tribal groups are reckoned as scheduled tribes and apart from Madhya Pradesh they reside in some parts of Maharashtra and Andhra Pradesh.</li> <li>• They are listed as Particularly Vulnerable Tribal Group (PVTG) in the state of Maharashtra and Andhra Pradesh.</li> </ul> <p><b>Nyishi Tribe:</b></p> <ul style="list-style-type: none"> <li>• They are people of eastern Bhutan and Arunachal Pradesh, a mountainous state in northeastern India.</li> </ul>

	<ul style="list-style-type: none"> <li>• They speak the Tibeto-Burman language of the Sino-Tibetan family.</li> <li>• The Nyishi support themselves with slash-and-burn agriculture and with hunting and fishing.</li> </ul> <p><b>Mankidia Tribe:</b></p> <ul style="list-style-type: none"> <li>• The Mankidia are a nomadic tribal group of people who live in Odisha.</li> <li>• The term 'Mankidia' is derived from Odia's word 'Mankada' meaning monkey.</li> <li>• This is in reference to their ability in catching monkeys.</li> <li>• They are categorised as a particularly vulnerable tribal group.</li> <li>• The group is an offshoot of the Birhor tribe of the Chota Nagpur region.</li> </ul> <p><b>Tharu Tribe:</b></p> <ul style="list-style-type: none"> <li>• The community belongs to the Terai lowlands, amid the Shivaliks of the lower Himalayas. Most of them are forest dwellers and some practise agriculture.</li> <li>• The word Tharu is related to the followers of Theravada Buddhism.</li> <li>• The Tharus live in both India and Nepal.</li> <li>• In the Indian Terai, they live mostly in Uttarakhand, Uttar Pradesh, and Bihar.</li> </ul>	<p><b>Stamp duties</b></p> <ul style="list-style-type: none"> <li>• Stamp duty is a government indirect tax, which is levied on all legal property transactions. Statement 1 is incorrect.</li> <li>• Union List: Stamp duties on documents specified in Entry 91 of the Union List in the 7th Schedule of the Constitution (viz. Bills of Exchange, cheques, promissory notes, bills of lading, letters of credit, policies of insurance, transfer of shares, debentures, proxies and receipts) are levied by the Union.</li> <li>• State List: Stamp duties on documents specified in entry 63 are levied and collected by the States.</li> <li>• Concurrent List: Stamp duties other than duties or fees collected by means of judicial stamps, but not including rates of stamp duty which fall within the scope of Entry 91 and Entry 63 mentioned above, fall under Entry 44 of the Concurrent List of the Seventh Schedule.</li> </ul>
51.	<p><b>B</b></p> <p>Statement 2 &amp; 3 are correct, Statement 1 is incorrect.</p> <p><b>Context</b></p> <p>The Department of Revenue, Ministry of Finance, has prepared a draft 'Indian Stamp Bill, 2023' to align with the modern stamp duty regime.</p> <p><b>About</b></p> <ul style="list-style-type: none"> <li>• The Bill intends to replace the Indian Stamp Act, 1899. It is a fiscal statute, laying down the law relating to tax levied in the form of stamps on instruments recording transactions. Statement 2 is correct.</li> <li>• Stamp duties are levied by the Central Government, but within the States are collected and appropriated by the concerned States in terms of provisions of Article 268 of the Constitution. Statement 3 is correct.</li> </ul>	<p>52. <b>B</b></p> <p>Statement 1, 4 are correct, Statement 2, 3 are incorrect</p> <p><b>Coastal Regulation Zone</b></p> <p>CRZ along the country has been placed in four categories:</p> <ol style="list-style-type: none"> <li>1. CRZ-1: These are ecologically sensitive areas; these are essential in maintaining the ecosystem of the coast. They lie between low and high tide lines. Exploration of natural gas and extraction of salt are permitted. Statement 1 is correct.</li> <li>2. CRZ-2: These areas are urban areas located in the coastal areas. Statement 2 is incorrect.</li> <li>3. CRZ-3: Rural and urban localities which fall outside the CRZ-1 and CRZ-2. Only certain activities related to agriculture and even some public facilities are allowed in this zone. Statement 3 is incorrect.</li> <li>4. CRZ-4: This lies in the aquatic area up to territorial limits. Fishing and allied activities are permitted in this zone. No Solid waste should be let off in this zone. Statement 4 is correct.</li> </ol>

<div data-bbox="215 344 355 405" data-label="Section-Header"> <h3>Coastal Zone Regulations</h3> </div> <div data-bbox="215 409 718 663" data-label="Figure"> </div> <div data-bbox="215 701 767 736" data-label="Section-Header"> <h3>Coastal Zone Management Plan (CZMP)</h3> </div> <div data-bbox="215 745 780 1028" data-label="List-Group"> <ul style="list-style-type: none"> <li>Coastal zone management plans (CZMP) are designed to promote sustainable development within coastal zone environments.</li> <li>Till now the CZMP has been approved for Odisha, Karnataka and Maharashtra and ICRZP has been approved for Great Nicobar Island and Little Andaman Island as per CRZ Notification, 2019.</li> </ul> </div> <div data-bbox="215 1037 780 1097" data-label="Section-Header"> <h3>Coastal Regulation Zone (CRZ) notification, 2019</h3> </div> <div data-bbox="215 1108 780 1417" data-label="List-Group"> <ul style="list-style-type: none"> <li>The notification implemented by the Ministry of Environment, Forest and Climate Change (MoEFCC) classifies the coastal area into different zones to manage infrastructure activities and regulate them.</li> <li>It incorporates recommendations of the Shailesh Nayak committee which looked into the concerns relating to the CRZ, 2011 notification.</li> </ul> </div>	<div data-bbox="919 302 1458 365" data-label="Text"> <p>requirement of license. Statement 1 is incorrect.</p> </div> <div data-bbox="882 378 1465 754" data-label="List-Group"> <ul style="list-style-type: none"> <li>The rule covers those companies / persons who have loaded more than 25 megawatts and 10 megawatts on inter-state and intra-state transmission networks.</li> <li>New formula to reduce open access charges: It prescribed, if a person availing General Network Access (GNA) or Open Access, the additional surcharge shall be linearly reduced and get eliminated within four years from the date of grant of access. Statement 2 is correct.</li> </ul> </div> <div data-bbox="882 766 1174 801" data-label="Section-Header"> <h3>Open access charges</h3> </div> <div data-bbox="882 810 1465 1370" data-label="List-Group"> <ul style="list-style-type: none"> <li>Open access charges are levied by power distribution companies (discoms) on those consumers which buy electricity from any other source.</li> <li>These charges were capped by the union ministry of power but the discoms started levying a variety of other charges such as additional surcharge.</li> <li>Cost reflective tariff: There shall not be any gap between approved Annual Revenue Requirement and estimated annual revenue from approved tariff except under natural calamity conditions. Statement 3 is correct.</li> <li>Such a gap, created if any, shall not be more than three percent of the approved Annual Revenue Requirement.</li> </ul> </div> <div data-bbox="882 1379 1062 1417" data-label="Section-Header"> <h3>Significance</h3> </div> <div data-bbox="882 1426 1465 1908" data-label="List-Group"> <ul style="list-style-type: none"> <li>Affordable electricity: The rules will ensure the reduction of discom losses and increased efficiency, leading to them being able to provide better services to the consumers.</li> <li>Industrial development: Doing away with the requirement of license for dedicated transmission lines for industry will lead to ease of doing business for the industry.</li> <li>Promotion of renewable energy: Rationalization of open access charges will lead to faster adoption of renewable energy by the industry and reducing emission.</li> </ul> </div>
<div data-bbox="140 1431 188 1460" data-label="Text"> <p>53.</p> </div> <div data-bbox="215 1431 240 1460" data-label="Text"> <p>C</p> </div> <div data-bbox="215 1471 780 1534" data-label="Text"> <p>Statement 2,3 are correct, Statement 1 is incorrect</p> </div> <div data-bbox="215 1545 333 1576" data-label="Section-Header"> <h3>Context</h3> </div> <div data-bbox="215 1588 780 1682" data-label="Text"> <p>The Ministry of Power issued Electricity (amendment) Rules, 2024, under the aegis of the Electricity Act, 2003.</p> </div> <div data-bbox="215 1691 304 1722" data-label="Section-Header"> <h3>About</h3> </div> <div data-bbox="215 1733 780 1912" data-label="List-Group"> <ul style="list-style-type: none"> <li>Exemption in license requirement: The rules allow consumers which have specified energy load and Energy Storage Systems (ESS) to establish, operate and maintain their dedicated transmission lines themselves without the</li> </ul> </div>	

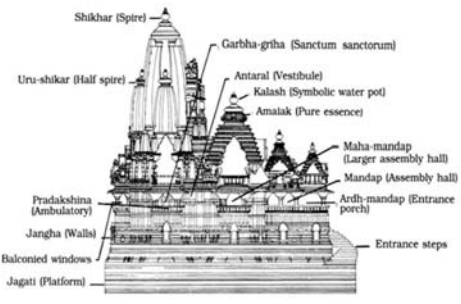



54.	<p><b>C</b></p> <ul style="list-style-type: none"> <li>The fertilizer subsidy in India has two components: urea subsidy and nutrient-based subsidy (NBS).</li> <li>Urea is the most widely used nitrogenous fertilizer in India, accounting for about 80% of the total consumption. Urea is sold at a statutorily notified uniform maximum retail price (MRP).</li> <li>The Nutrient Subsidy (NBS) scheme was introduced in 2010 to replace the earlier administered pricing system for decontrolled phosphatic and potassic (P&amp;K) fertilizers. Statement I is correct.</li> <li>Under the NBS scheme, the government fixes a per kg subsidy rate for each nutrient, i.e., nitrogen (N), phosphorus (P), potash (K) and sulphur (S), based on their nutrient content, international and domestic prices and exchange rate.</li> <li>The manufacturers/importers/marketers are free to decide the MRP of P&amp;K fertilizers at reasonable levels. The subsidy is paid to them on receipt of fertilizers in district warehouses.</li> <li>The Food Subsidy gets the maximum share in the total subsidy given by the Central Government of India. Statement II is incorrect.</li> </ul> <p><b>Steps Taken to Reform Fertilizer Subsidy</b></p> <ul style="list-style-type: none"> <li>Introducing the Nutrient Based Subsidy (NBS) scheme in 2010 to rationalize the subsidy on P&amp;K fertilizers and encourage balanced use of nutrients.</li> <li>Implementing the neem coating of urea in 2015 to improve the efficiency and effectiveness of urea and reduce its diversion and black marketing.</li> <li>Launching the direct benefit transfer (DBT) system for fertilizer subsidy in 2018 to ensure timely and transparent payment of subsidy to the manufacturers/importers based on actual sales to farmers through point of sale (PoS) devices.</li> <li>Increasing the subsidy rates for NBS nutrients in 2021 and 2022 to ensure adequate availability and affordable</li> </ul>	<p>prices for farmers despite the uptrend in the international market.</p> <ul style="list-style-type: none"> <li>Converting the existing village, block/sub-district/taluk and district-level fertilizer retail outlets into model fertilizer retail outlets called Pradhan Mantri Kisan Samridhi Kendra (PMKSK) to act as "one-stop shop" for all agriculture-related inputs and services.</li> </ul>
55.	<p><b>D</b></p> <p>Statement 1,2,4,5&amp;6 are correct, Statement 3 is incorrect</p> 	<p><b>56. A</b></p> <p><b>About Qanat system</b></p> <ul style="list-style-type: none"> <li>It is an ancient type of water-supply system, developed and still used in arid regions of the world.</li> <li>It taps underground mountain water sources trapped in and beneath the upper reaches of alluvial fans and channels the water downhill through a series of gently sloping tunnels.</li> <li>The qanats have been used for centuries in arid and semi-arid parts of north Africa, the Middle East and Asia, where water supplies are limited.</li> <li>It's known by a variety of names, "foggara" in north Africa, "falaj" in Oman and "qarez" in parts of Asia.</li> <li>Many old qanats are still used in Iran and Afghanistan, chiefly for irrigation.</li> <li>It's a system that's managed by everyone and its benefits are shared.</li> </ul>


	<ul style="list-style-type: none"> <li>Some of the region's qanat systems, like those in Iran, are protected under heritage status.</li> </ul> <p><b>Significance of the system</b></p> <ul style="list-style-type: none"> <li>The qanat is sustainable as it works with gravity and no electricity is needed. It can even be used to create clean energy.</li> <li>Water lost to evaporation is minimal in comparison to surface water supplies.</li> <li>It can have a wide scale impact. Qanats are multiple kilometres long and once this water hits a floodplain, it can irrigate multiple hectares of land.</li> <li>It fosters social cohesion. Many people, with different skills, are involved in maintaining the system.</li> <li>The lifespan of the system extends beyond that of a deep water well, which is only about 20 years. Tunnels do not clog as easily as wells.</li> <li>The quality of water coming from the mountains is much better than water on the plains. It'll have lower salinity and be better for crops and people.</li> </ul>	<ul style="list-style-type: none"> <li>The government imposes a Universal Service Levy (USL) on the gross revenue of the telecom companies, which is a percentage of their Adjusted Gross Revenue (AGR). Statement 2 is correct.</li> <li>This levy is collected and deposited into the USOF.</li> </ul> <p><b>Administration:</b></p> <ul style="list-style-type: none"> <li>USOF is headed by the Administrator, USO Fund who is appointed by the Central Government, for the administration of the fund.</li> <li>It is an attached office of the Department of Telecommunications (DoT), Ministry of Communications.</li> </ul>
57.	<p><b>C</b></p> <p>About Universal Service Obligation Fund (USOF)</p> <ul style="list-style-type: none"> <li>USOF was set up by an Act of Parliament in December 2003 by amending the Indian Telegraph Act, 1885. Statement 1 is correct.</li> <li>The objective of the USOF is to provide access to telecom services in a non-discriminatory manner to people in rural and remote areas at affordable and reasonable prices, thereby bridging the rural-urban digital divide.</li> <li>For commercially non-viable rural and remote areas, USOF provides subsidy support in the form of Net Cost or Viability Gap Funding (VGF) to incentivize telecom service providers for the expansion of telecommunications and broadband services in those areas.</li> </ul> <p><b>Funding Mechanism:</b></p> <ul style="list-style-type: none"> <li>The USOF is funded through a levy on the revenue earned by telecom operators.</li> </ul>	<p><b>58. B</b></p> <p>Context:</p> <p>Indian Space Research Organisation (ISRO) has developed an improvised Distress Alert Transmitter (DAT) with advanced capabilities and features for the fishermen at sea to send emergency messages from fishing boats.</p> <ul style="list-style-type: none"> <li>The first version of DAT has been operational since 2010.</li> </ul> <p>" The fishermen at sea send emergency messages from fishing boats.</p> <p>" The messages are sent through a communication satellite and received at a central control station (INMCC: Indian Mission Control Centre) where the alert signals are decoded for the identity and location of the fishing boat.</p> <p>" The extracted information is forwarded to Maritime Rescue Co-ordination Centres (MRCCs) under Indian Coast Guard (ICG).</p> <p>" Using this information, the MRCC co-ordinates to undertake Search and Rescue operations to save the fishermen at distress.</p>
		<p><b>59. C</b></p> <p><b>Context:</b></p> <p>After relocating deer from Cuttack, the Odisha state government is planning to introduce Sambar and Gaur (bison) in the Chandaka-Dampara wildlife sanctuary.</p>

	<ul style="list-style-type: none"> <li>It is located in Khurda district of Odisha represents the north-eastern limits of Eastern Ghats.</li> <li>It is also a home to a number of threatened wild animals and birds.</li> <li>This landscape has got a sanctuary status in 1982.</li> <li>The climate of the area is tropical climate with three distinct and well-marked seasons i.e. summer, Rainy season and winter.</li> <li>Vegetation: Flora is moderately diverse with intimate mixture of evergreen and deciduous elements. The area comes under semi-evergreen forest zone but the interplay of biotic factors has changed the original character of the vegetation.</li> <li>Flora: Dhaman (<i>Grewia Tiliaefolia</i>), Bankapasia (<i>Kydia calycina</i>), Jamu (<i>Syzygium Cuminii</i>), Gandhana (<i>Premna mucronata</i>), Kansa (<i>Hymenodictyon excelsum</i>), Kusum (<i>Schleichera oleosa</i>), Marua (<i>Vitex pinnata</i>), Sidha (<i>Lagerstroemia parviflora</i>), Karanja, Thorny bamboo etc.</li> <li>Fauna: Elephants, Chital, Barking Deer, Wild Boar, Rhesus Monkey, Pangolin, Sloth Bear, Indian Wolf, Hyena and other mammals.</li> </ul>	<p><b>Jatar Deul Temple</b></p> <ul style="list-style-type: none"> <li>Jatar Deul also called tower temple (rekha-deul), is located in the numerous rivers criss-crossed by stone-free alluvial and bush landscape of the southern Sundarbans settlements in West Bengal. Pair 3 is incorrect.</li> <li>The temple has a curvilinear tower similar to temple architecture of the Nagara order of Odisha temples.</li> </ul> <p><b>Chausath Yogini Temple</b></p> <ul style="list-style-type: none"> <li>It is situated in Mitaoli village, in Morena district of Madhya Pradesh.</li> <li>It is circular, with 64 chambers dedicated to the 64 yoginis, and a central shrine dedicated to Shiva.</li> </ul>
60. C	<p>Pair 1,2&amp;4 are correct, Pair 3 is incorrect</p> <p><b>Guruvayur Temple</b></p> <ul style="list-style-type: none"> <li>Guruvayoor Sree Krishna Swamy Temple, also known as the Dwarka of the South, is dedicated to Lord Vishnu and the young form of Lord Krishna.</li> <li>It is located in the small town of Guruvayur, in the Thrissur District of Kerala.</li> </ul> <p><b>Kothandaramaswamy Temple</b></p> <ul style="list-style-type: none"> <li>The Kothandaramaswamy Temple, situated in Rameswaram, Tamil Nadu, stands as a shrine dedicated to the revered Hindu deity Rama.</li> <li>Recognized as one of the 108 Abhimana Kshethram of the Vaishnavate tradition, the temple holds cultural and historical significance.</li> </ul>	<p><b>61. D</b></p> <p><b>About Soligas and Yeravas</b></p> <ul style="list-style-type: none"> <li>Indigenous groups Soligas and Yeravas have been living in the Cauvery Basin and the surrounding hills of peninsular India for thousands of years.</li> <li>Soligas, one of the oldest indigenous communities in the country, are the original inhabitants of Karnataka and live mostly in the Chamarajanagar and Mandya districts.</li> <li>Honey is an important part of the diet for the Soliga people, who still forage large parts of their food from the biodiversity-rich Ghats.</li> <li>They reside in the peripheral forest areas near Biligiri Rangana Hills and Male Mahadeshwara.</li> <li>They are the first tribal community living inside the core area of a tiger reserve in India to get their forest rights officially recognised by a court of law.</li> <li>Soligas use Silver cockscomb as a nutritious leafy green vegetable, as it is high in nutrients such as beta-carotene and folic acids, and has vitamin E, calcium and iron.</li> <li>Also the scientific community has named a new genus (<i>Soliga ecarinata</i>) of wasp after this community.</li> </ul> <p><b>Who are Yeravas?</b></p> <ul style="list-style-type: none"> <li>The Yeravas, on the other hand, came to the state from Wayanad district in</li> </ul>

	<p>Kerala and settled in Kodagu district of the state.</p> <ul style="list-style-type: none"> <li>Yeravas use more tubers than Soligas.</li> <li>Language: They speak their own language of Ravula.</li> <li>Mushrooms become part of the Yerava diet during monsoons</li> <li>Issues: The food that Soligas and Yeravas depend on for survival is now affected by changes in land use and shifting policies. Worse, traditional knowledge is steadily being lost as young people are migrating out.</li> </ul>	<b>63.</b>	<p><b>B</b></p> <p>Statement 1,2 are correct, Statement 3 is incorrect</p> <p>Context</p> <p>The Prime Minister has inaugurated the sixth edition of the Khelo India Youth Games in Chennai.</p> <p>Sixth edition of the Khelo India Youth Games</p> <ul style="list-style-type: none"> <li>Venue: Four cities of Tamil Nadu: Chennai, Madurai, Trichy and Coimbatore from 19th to 31st January 2024.</li> <li>Logo: Statue of Thiruvalluvar</li> <li>Mascot: 'Veera Mangai' (brave woman) Velu Nachiyar</li> <li>Rani Velu Nachiyar, the princess of Ramanathapuram was the first queen to fight against the British colonial power for freedom in India. She is known by Tamils as Veeramangai.</li> </ul> <p><b>New developments:</b></p> <p>Archery, athletics, badminton, and squash have been introduced in this edition. Statement 2 is correct.</p> <p>Silambam, a traditional sport of Tamil Nadu, is being introduced as a demo sport. Statement 3 is incorrect.</p> <p>Background: The first edition was organised in 2018 in Delhi by the Ministry of Youth Affairs &amp; Sports to revive the sports culture in India at the grass-root level. Statement 1 is correct.</p>
<b>62.</b>	<p><b>D</b></p> <ul style="list-style-type: none"> <li>The Union government recently launched India's first graphene centre (IICG) in Kerala.</li> <li>The centre was established to foster research and development, product innovation and capacity building in the area of graphene and 2D material systems.</li> <li>Along with the IICG, the Centre of Excellence (CoE) in IIoT Sensors was also launched.</li> <li>It aims to catalyse the development of sensors within the realm of Intelligent IoT systems covering a broad spectrum of applications of intelligent sensors in networks and devices.</li> <li>The IoT is a network of interconnected devices that communicate and share data with each other through the internet.</li> </ul> <p><b>About the Graphene</b></p> <ul style="list-style-type: none"> <li>Graphene, a single layer of carbon atoms arranged in a honeycomb lattice, holds immense potential for revolutionizing various industries due to its extraordinary properties.</li> </ul> <p>Properties: It is the world's thinnest, strongest, and most conductive material of both electricity and heat.</p> <ul style="list-style-type: none"> <li>It conducts electricity better than copper.</li> <li>It is 200 times stronger than steel but six times lighter. It is almost perfectly transparent as it absorbs only 2% of light.</li> <li>It is impermeable to gases, even those as light as hydrogen and helium.</li> </ul>	<b>64.</b>	<p><b>D</b></p> <p>All pairs are correct</p> <p>Classification of the Nagara Style of Temple Architecture</p> <p>Adam Hardy classifies the Nagara style of temple architecture based on the style of Shikhara:</p> <p><b>Valabhi</b></p> <ul style="list-style-type: none"> <li>They have barrel-vaulted roofs and are rectangular in design.</li> <li>An example of this style is the Teli Ka Mandir, a 9th-century temple in Gwalior.</li> </ul>

<p><b>Phamsana</b></p> <ul style="list-style-type: none"> <li>• These Nagara-style temples are shorter and broader structures.</li> <li>• Multiple slabs rise upwards in a moderate slope on a straight incline like a pyramid, meeting at a single point above the building's mid-point.</li> <li>• An example of this style is the Jagmohan of Konark Temple.</li> </ul> <p><b>Rekha-Prasad or Latina</b></p> <ul style="list-style-type: none"> <li>• It emerged from the previous styles (Valabhi, phamsana).</li> <li>• These temples feature a basic Shikara, a slightly curved tower with four sides of equal length.</li> <li>• It remained the most refereed style till the 10th century.</li> <li>• E.g: Sun Temple at Markhera in Madhya Pradesh (MP) and the Sri Jagannath Temple in Odisha.</li> </ul> <p><b>Shekhari</b></p> <ul style="list-style-type: none"> <li>• From the tenth century onwards, composite Latinas began to emerge, giving rise to Shekhari and Bhumija styles.</li> <li>• It has a primary Rekha-Prasad Shikara and one or more rows of lesser steeples (a tower with a pointed top) on both sides of the centre spire.</li> <li>• Mini Shikaras can also be found at the base and on the corners.</li> <li>• The Kandariya Mahadev Temple in Khajuraho is a notable example of this style</li> </ul> <p><b>Bhumija</b></p> <ul style="list-style-type: none"> <li>• It was developed in Malwa under the Paramara dynasty.</li> <li>• It has miniature spires in horizontal and vertical rows all the way to the top, creating a grid-like effect on each face. The actual shikhara often approaches a pyramidal shape.</li> <li>• The Udayeshwar Temple in Madhya Pradesh is an example of this architectural style.</li> </ul>	<p><b>Nagara Style of Temple Architecture:</b></p>  <p><b>65. C</b></p> <p>Japan's SLIM spacecraft lands on moon, a 1st for the country.</p> <ul style="list-style-type: none"> <li>• SLIM - The Smart Lander for Investigating Moon is a lightweight spacecraft about the size of a passenger vehicle.</li> <li>• It is nicknamed as 'the Moon Sniper'.</li> <li>• Japan became the 5th country in world to reach the lunar surface following the United States, the Soviet Union, China and India. Statement 1 is correct.</li> <li>• Main goals - To test new landing technology that would allow moon missions to land 'where we want to land' and to seek clues about the origin of the moon and analysing minerals with a special camera.</li> <li>• Launched by - Mitsubishi Heavy H2A rocket from the Tanegashima Space Centre on Tanegashima Island, Japan.</li> <li>• Space agency - Japan Aerospace Exploration Agency (JAXA).</li> <li>• Scientific instrument - It was carrying 2 small autonomous probes lunar excursion vehicles LEV-1 and LEV-2.</li> <li>• LEV-1 is tasked with recording SLIM's landing while LEV-2 is a ball-shaped rover equipped with 2 cameras.</li> <li>• Landing - It was aiming to land near the Shioli crater, near a region covered in volcanic rock by using "pinpoint landing" technology to provide greater control than any previous moon landing. Statement 2 is correct.</li> </ul>
--	--

	<ul style="list-style-type: none"> <li>While most previous probes have used landing zones about 10 km wide, SLIM was aiming at a target of just 100 m.</li> <li>Descent path - At an altitude of 5 kms, the lander was in a vertical descent mode, then at 50 m above the surface, it was supposed to make a parallel movement to find a safe landing spot.</li> </ul>	<p>environment from pollution and the rational management of living marine resources that also lead to establishment of PERSGA (Programme for the Environment of the Red Sea and Gulf of Aden) in 1995.</p> 
66.	<p><b>A</b></p> <p><b>Statement 1,2 are correct, Statement 3 is incorrect.</b></p> <ul style="list-style-type: none"> <li>Hypersonic Missiles - They fly at speeds of at least Mach 5 and are highly manoeuvrable and able to change course during flight. Statement 1 is correct.</li> <li>Hypersonic speed is at least more than 5 times the speed of sound (Mach 5) or about 6,200 km per hour.</li> <li>It can also be launched from a submarine and a frigate.</li> <li>Hypersonic glide vehicles - Glide vehicle are launched from a rocket which leaves the Earth's atmosphere and then plunges back into it. Statement 2 is correct.</li> <li>Hypersonic cruise missiles - They are powered by high-speed, air-breathing engines, that can sustain flight on its own through the atmosphere like a cruise missile.</li> <li>Advantages - It can't be detected easily because of its speed, manoeuvrability and low altitude of flight.</li> <li>Fractional orbital bombardment system (FOBS) - The missile can launch the glide vehicle partially into orbit which could strip adversaries of reaction time and traditional defence mechanisms.</li> <li>Different from Ballistic missiles - While both can travel at hypersonic speeds, ballistic missiles follow only set trajectories and limited manoeuvrability. Statement 3 is incorrect.</li> </ul>	<p><b>68. D</b></p> <p><b>Second Thomas Shoal</b></p> <ul style="list-style-type: none"> <li>2nd Thomas Shoal is a submerged reef in the Spratly Islands of the South China Sea.</li> <li>Ren'ai Reef is the Chinese name for what the Philippines call Ayungin Shoal and the U.S. calls the Second Thomas Shoal</li> <li>The shoal is located 105 nautical miles west of Palawan, Philippines and lies within Manila's Exclusive Economic Zone (EEZ).</li> <li>The shoal is a disputed territory and is claimed by China, the Philippines, Taiwan (ROC) and Vietnam.</li> </ul> <p><b>Where is the South China Sea?</b></p> <ul style="list-style-type: none"> <li>The South China Sea is an arm of western Pacific Ocean in Southeast Asia.</li> <li>It is south of China, east &amp; south of Vietnam, west of the Philippines and north of the island of Borneo.</li> <li>It is connected by Taiwan Strait with the East China Sea and by Luzon Strait with the Philippine Sea.</li> <li>Bordering states &amp; territories: the People's Republic of China, the Republic of China (Taiwan), the Philippines, Malaysia, Brunei, Indonesia, Singapore and Vietnam.</li> </ul>
67.	<p><b>D</b></p> <p>Jeddah Convention of 1982, the 'Regional Convention for the Conservation of the Red Sea and Gulf of Aden Environment' aims at protection of coastal and marine</p>	

	<p><b>Contesting Claims Over Islands:</b></p> <ul style="list-style-type: none"> <li>• The Paracel Islands are claimed by China, Taiwan and Vietnam.</li> <li>• The Spratly Islands are claimed by China, Taiwan, Vietnam, Brunei and Philippines.</li> <li>• The Scarborough Shoal is claimed by the Philippines, China and Taiwan.</li> </ul> 	<p><b>Background:</b></p> <ul style="list-style-type: none"> <li>• The Government of India has been conferring awards to children for their exceptional achievements.</li> <li>• The awards for child welfare were also conferred, to individuals as well as institutions.</li> </ul> <p>These awards were given in the following categories:</p> <ol style="list-style-type: none"> <li>1. National Child Award for Exceptional Achievements - since 1996.</li> <li>2. National Child Welfare Award (Individual) - since 1979.</li> <li>3. National Child Welfare Award (Institution) - since 1979.</li> <li>4. Rajiv Gandhi Manav Sewa Award - since 1994.</li> </ol> <p>Since 2017-18, these Awards were given under the following categories:</p> <ul style="list-style-type: none"> <li>• Bal Shakti Puraskar (Earlier known as National Child Award).</li> <li>• Bal Kalyan Puraskar [Individual &amp; Institution] (Earlier known as National Child Welfare Award).</li> <li>• From the year 2022 onwards, Bal Kalyan Puraskar (both Individual and Institution) has been closed and Bal Shakti Puraskar has been subsumed under Pradhan Mantri Rashtriya Bal Puraskar.</li> </ul> <p><b>Eligibility:</b></p> <ul style="list-style-type: none"> <li>• A child who is an Indian Citizen and is a resident of India.</li> <li>• A Child above the age of 5 years and not exceeding 18 years (as on 31st July of respective year). Statement 3 is incorrect.</li> <li>• The act/incident/achievement should have been within 2 years of the last date of receipt of application/nomination for the year of consideration.</li> </ul> <p><b>Number of Awardees:</b></p> <p>25, however, any relaxation to this maximum number may be permitted at the discretion of the National Selection Committee.</p>
69.	<p><b>A</b></p> <p>Statement 1 is correct, Statement 2&amp;3 are incorrect</p> <p>What is Pradhan Mantri Rashtriya Bal Puraskar (PMRBP)?</p> <ul style="list-style-type: none"> <li>• The PMRBP is organized to celebrate the energy, determination, ability, zeal and enthusiasm of children.</li> <li>• The awards are conferred upon the children for their excellence in seven categories, viz. Art &amp; Culture, Bravery, Environment, Innovation, Science &amp; Technology, Social Service and Sports, which deserve national recognition. Statement 1 is correct.</li> <li>• Each awardee of PMRBP is given a medal, cash prize of Rs. 1 Lakh, a Certificate and a Citation.</li> <li>• The selection of awardees was made by a Selection Committee under the chairpersonship of the Union Minister for Women and Child Development. Statement 2 is incorrect.</li> <li>• The Awards are given by the President of India in the week preceding Republic Day every year.</li> </ul>	

70.	<p><b>A</b></p> <ul style="list-style-type: none"><li>Google's Threat Analysis Group (TAG) revealed that the Russian hacking group COLDRIVER is engaged in credential phishing against high-profile targets, including NGOs, former intelligence and military officers, and NATO governments. COLDRIVER conducts campaigns targeting Ukraine, NATO countries, academic institutions, and NGOs.</li><li>The group impersonates experts or individuals affiliated with the targets, sending innocuous-looking PDF documents for feedback.</li><li>If the target attempts to open the document, it appears encrypted. COLDRIVER then provides a link to a supposed decryption utility, which is a backdoor called SPICA, enabling the hackers to control infected devices and execute various commands.</li><li>SPICA is a customer malware tool written in Rust. It uses the websocket communication for commanding and controlling affected devices.</li><li>It will allow the attackers to execute many commands on infected devices, including executing arbitrary shell commands, stealing cookies from Chrome, Firefox, Opera and Edge, uploading and downloading files, using the filesystem, exfiltrating documents and more.</li></ul>	<p><b>Applicability</b> To all associations, groups and NGOs which intend to receive foreign donations.</p> <p><b>2010 Amendment</b> Consolidated the law on utilisation of foreign funds, and to prohibit their use for "any activities detrimental to national interest".</p> <p><b>2020 Amendment</b> Gave the Government tighter control and scrutiny over the receipt and utilisation of foreign funds by NGOs.</p> <p><b>Filing of annual returns</b> The annual returns must be filed on the lines of Income Tax.</p> <p><b>Foreign contribution</b> It means the donation, delivery or transfer made by any foreign source</p> <p><b>How foreign funds can be availed by NGOs</b> All NGOs must receive foreign funds in a designated bank account at SBI's New Delhi branch.</p> <p><b>Utilisation of foreign funds</b> Utilised only for the purpose for which they have been received and as stipulated in the Act.</p> <p><b>Who can receive foreign contribution?</b> It must have a definite cultural, economic, educational, religious or social programme with prior FCRA registration/ permission from the Central Government.</p>								
71.	<p><b>B</b></p> <p><b>Statement 1,2 are correct, Statement 3,4 are incorrect</b></p> <table><tr><th>Key aspects</th><th>Description</th></tr><tr><td>About</td><td>It regulates foreign donations and ensures that such contributions do not adversely affect internal security</td></tr><tr><td>Established</td><td>In 1976 during Emergency period amidst the apprehensions that foreign powers were interfering in India's affairs by pumping money through independent organisations</td></tr><tr><td>Implementation</td><td>Ministry of Home Affairs. Statement 1 is correct.</td></tr></table>	Key aspects	Description	About	It regulates foreign donations and ensures that such contributions do not adversely affect internal security	Established	In 1976 during Emergency period amidst the apprehensions that foreign powers were interfering in India's affairs by pumping money through independent organisations	Implementation	Ministry of Home Affairs. Statement 1 is correct.	<p><b>Who cannot receive foreign contribution?</b> The candidates for elections, journalists or newspaper and media broadcast companies, judges and Government servants, members of legislature and political parties or their office-bearers, and organisations of a political nature. Statement 2 is correct.</p> <p><b>Aadhaar provision</b> It is mandatory for all the office-bearers, directors and other key functionaries of an NGO.</p>
Key aspects	Description									
About	It regulates foreign donations and ensures that such contributions do not adversely affect internal security									
Established	In 1976 during Emergency period amidst the apprehensions that foreign powers were interfering in India's affairs by pumping money through independent organisations									
Implementation	Ministry of Home Affairs. Statement 1 is correct.									



	<p><b>Administrative expenses</b> It was capped at 20% of the total foreign funds received, earlier the upper limit was 50%</p> <p><b>Bar on sub-granting</b> It barred sub-granting by NGOs to smaller NGOs who work at the grass roots level.</p> <p><b>What is the procedure for FCRA registration?</b></p> <ul style="list-style-type: none"> <li>• Apply online- NGOs must apply online for FCRA registration with the required documents and information.</li> <li>• Role of Intelligence Bureau (IB)- Ministry of Home Affairs (MHA) verifies the background and objectives of the applicant through the Intelligence Bureau. Statement 4 is incorrect.</li> <li>• Eligibility- The applicant must not be involved in any illegal or anti-national activities, such as religious conversion, communal violence, fund misuse, or sedition.</li> <li>• Time frame- The MHA must decide on the application within 90 days, or inform the NGO of the reasons for delay.</li> <li>• Validity- 5 years.</li> <li>• Renewal- It must be applied for at least 6 months before the expiry date, in case of failure to renew it will amount to expiry of registration.</li> <li>• Due date- NGOs can appeal to the MHA within 4 months of the expiry of registration, by giving valid reasons for the delay.</li> </ul> <p><b>How FCRA registration can be cancelled?</b></p> <ul style="list-style-type: none"> <li>• Right to cancel- The Government can cancel the FCRA registration of any NGOs if it finds to be in violation of the Act.</li> <li>• Grounds for cancellation- It can happen if the NGO is found to be dishonest, inactive, defunct or harmful to public interest, or if it misuses foreign funds.</li> <li>• Right to be heard- As per the act, no order of cancellation of certificate can be made unless the person or NGO concerned has been given a reasonable opportunity of being heard.</li> </ul>	<ul style="list-style-type: none"> <li>• Right to Appeal- All orders of the Government can be challenged in the High Court.</li> <li>• Re-registration- If NGOs registration is cancelled, it can apply for re-registration only after 3 years. Statement 3 is incorrect.</li> <li>• Suspend NGOs activities- MHA can suspend or freeze the NGO's registration and funds for 180 days during inquiry.</li> </ul> <p><b>72. C</b></p> <p>All statements are correct</p> <p>Competition Commission of India (CCI) is a statutory body of the Government of India responsible for enforcing the Competition Act, 2002, it was duly constituted in March 2009.</p> <p>The Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act) was repealed and replaced by the Competition Act, 2002, on the recommendations of Raghavan committee. Statement 2 is correct.</p> <p>Composition: A Chairperson and 6 Members appointed by the Central Government. Statement 1 is correct.</p> <p><b>Duty of the Commission:</b></p> <ul style="list-style-type: none"> <li>• To eliminate practices having adverse effects on competition.</li> <li>• Promote and sustain competition.</li> <li>• Protect the interests of consumers.</li> <li>• Ensure freedom of trade in the markets of India.</li> </ul> <p>The Competition (Amendment) Act, 2007 was enacted to amend the Competition Act, 2002.</p> <ul style="list-style-type: none"> <li>• This led to the establishment of the CCI and the Competition Appellate Tribunal.</li> <li>• The Competition Appellate Tribunal has been established by the Central Government to hear and dispose of appeals against any direction issued or decision made or order passed by the CCI.</li> </ul>
--	--	---

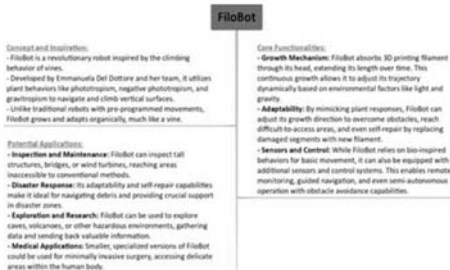
	<ul style="list-style-type: none"><li>The government replaced the Competition Appellate Tribunal (COMPAT) with the National Company Law Appellate Tribunal (NCLAT) in 2017. Statement 3 is correct.</li></ul>		<ul style="list-style-type: none"><li>It is a new alliance for global good, gender equity, and equality established by India on the sidelines of the 54th annual World Economic Forum (WEF) meeting in Davos. Statement 1 is correct.</li><li>The alliance will bring together worldwide best practices, knowledge sharing, and investment opportunities in women's education, health, and enterprise.</li><li>This initiative marks a significant stride toward achieving multiple Sustainable Development Goals (SDGs), including SDG 3 (Good Health and Well-Being), 4 (Quality Education), 5 (Gender Equality and Empowerment), 17 (Global Partnership for Development) and more.</li><li>It has garnered support from industry leaders such as MasterCard, Uber, Tata, TVS, Bayer, Godrej, the Serum Institute of India, IMD Laussane, and over 10,000 partners from industry through the Confederation of Indian Industry (CII).</li><li>Supported by the Bill and Melinda Gates Foundation, the alliance will be housed and anchored by the CII Centre for Women Leadership.</li><li>The WEF has come on board as a 'Network Partner' and Invest India as an 'Institutional Partner'. Statement 2 is correct.</li></ul>
73.	<p><b>C</b></p> <p><b>About NAM Summit:</b></p> <ul style="list-style-type: none"><li>The 19th NAM Summit was held under Uganda's leadership in Kampala. Uganda has taken over as chair from Azerbaijan, to run until 2027.</li><li>Theme: 'Deepening Cooperation for Shared Global Affluence.'</li></ul> <p><b>Key discussions at the summit:</b></p> <ul style="list-style-type: none"><li>Israel-Hamas war</li><li>India's "Vishwa Mitra" initiative</li><li>A call for multipolar world</li></ul> <p><b>About Non-Aligned Movement:</b></p> <ul style="list-style-type: none"><li>The Non-Aligned Movement (NAM) is an alliance of developing nations that refuses to identify with any major superpower.</li><li>It was established in 1961 at the height of the Cold War. Whereas it started with Bandung Conference held in Indonesia in 1955. Statement I is correct.</li></ul> <p><b>Current members:</b></p> <ul style="list-style-type: none"><li>120 countries: 53 from Africa, 39 from Asia, 26 from Latin America and the Caribbean and two from Europe.</li><li>It also includes the non-UN member state of Palestine, 17 other observer countries, and 10 observer organizations.</li><li>India is one of the founding member.</li><li>After the United Nations, NAM is the second-largest grouping of nations.</li><li>NAM does not have a permanent secretariat or a formal founding charter, act, or treaty. Statement II is incorrect.</li><li>The summit usually takes place every three years.</li></ul>		<p><b>75. B</b></p> <p>About Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme:</p> <ul style="list-style-type: none"><li>It is a subcomponent of National Green Hydrogen Mission.</li><li>Aim: To bolster domestic electrolyser manufacturing and green hydrogen production.</li></ul> <p>In the initial stage, two distinct financial incentive mechanisms were proposed with an outlay of ₹ 17,490 crore up to 2029-30:</p> <ul style="list-style-type: none"><li>Incentive for manufacturing of electrolysers</li><li>Incentive for production of green hydrogen.</li><li>Depending on the markets and technology development, specific incentive schemes and programmes will</li></ul>
74.	<p><b>C</b></p> <p>About Global Alliance for Global Good - Gender Equity and Equality</p>		

	<p>continue to evolve as the Mission progresses.</p> <p>Implementing agency: The Solar Energy Corporation of India (SECI) would be the implementing agency responsible for the scheme's execution.</p> <p>What is National Green Hydrogen Mission?</p> <ul style="list-style-type: none"> <li>It is implemented by the Ministry of New and Renewable Energy with an outlay of Rs. 19,744 crore from FY 2023-24 to FY 2029-30.</li> <li>The overarching objective of the Mission is to make India a global hub for the production, usage, and export of Green Hydrogen and its derivatives.</li> </ul> <p>The expected outcomes of the mission by 2030, are as follows:</p> <ul style="list-style-type: none"> <li>India's Green Hydrogen production capacity is likely to reach 5 MMT per annum, contributing to reduction in dependence on the import of fossil fuels. Achievement of Mission targets is expected to reduce a cumulative Rs.1 lakh crore worth of fossil fuel imports by 2030.</li> <li>This is likely to leverage over 78 lakh crore in total investments and create over 6 lakh jobs.</li> <li>Nearly 50 MMT per annum of CO2 emissions are expected to be averted through the production and use of the targeted quantum of Green Hydrogen.</li> </ul> <p>It has a provision for supporting pilot projects for low-carbon steel, mobility, shipping, and ports.</p> <p>The Mission provides allocations for various sub-components of the Mission such as SIGHT, Pilot projects, R&amp;D etc. to fund specific selected projects.</p> <p>There is no State-wise allocation made under the Mission.</p>	<p>and the second at least six months after the first dose.</p> <ul style="list-style-type: none"> <li>The vaccine is recommended for children as part of the routine immunization as well as for individuals at risk of exposure or travel to the regions with high hepatitis A prevalence.</li> <li>In addition to this people with occupational risk of infection and suffering from chronic liver diseases also require Hepatitis A vaccination.</li> </ul>
77.	<p><b>C</b></p> <p><b>MPEMBA EFFECT</b></p> <ul style="list-style-type: none"> <li>The Mpemba effect has intrigued scientists with its counterintuitive observation that hot water can freeze faster than cold water in similar conditions. Statement 1 is correct.</li> <li>Researchers have conducted numerous experiments to determine the causes of the phenomenon, but a consensus conclusion remains wanting.</li> <li>Possible causes include microbubbles, evaporation, the presence of frost in cold water, and the effect of compounds precipitated by boiling. Statement 2 is correct.</li> </ul> <ol style="list-style-type: none"> <li>Microbubbles left suspended in water that has been heated by boiling. These promote convection and transfer heat faster as the water cools.</li> <li>Evaporation, an endothermic (heat absorb) process, contributes to faster heat loss in warmer water.</li> </ol> <ul style="list-style-type: none"> <li>Warmer water's lower density enhances convection and accelerates heat transfer, influencing the freezing process.</li> </ul> <ol style="list-style-type: none"> <li>The presence of frost in cold water may act as an insulator, this raises the freezing point of cold water and slows heat loss and affects freezing times.</li> <li>Compounds in water like calcium carbonate could be precipitated by boiling, and then dissolve, thus increasing the water's freezing point.</li> </ol>	
76.	<p><b>A</b></p> <p>Recently, the Indian Immunologicals Ltd (IIL) a wholly owned subsidiary of National Dairy Development Board (NDDB) launched India's first indigenously developed Hepatitis A vaccine 'Havisure' in Hyderabad.</p> <ul style="list-style-type: none"> <li>It is a two-dose vaccine - first dose administered at above 12 months of age</li> </ul>	

<p><b>78.</b></p>	<p><b>B</b></p> <p>Context</p> <p>The National Human Rights Commission (NHRC) has stressed on the need to implement the Idade Commission report for welfare of NTs, SNTs, and DNTs.</p> <p>Nomadic, Semi Nomadic, and Denotified Tribes (NTs, SNTs, and DNTs)</p> <ul style="list-style-type: none"> <li>• Nomadic and semi-nomadic communities are defined as those who move from one place to another rather than living at one place all the time.</li> <li>• Denotified tribes (DNTs) are communities that were 'notified' as being 'born criminal' during the British regime under a series of laws starting with the Criminal Tribes Act of 1871.</li> <li>• These are communities who are the most vulnerable and deprived.</li> </ul> <p>Idade Commission</p> <ul style="list-style-type: none"> <li>• In 2014 , a National Commission for Denotified, Nomadic and Semi Nomadic Tribes was constituted under the Chairmanship of Bhiku Ramji Idade for a period of three years.</li> <li>• The commission has given the following recommendations;</li> <li>• There is a need to identify challenges faced by the NTs, SNTs, and DNTs owing to the stigma imposed by the enactment of the Criminal Tribes Act, 1871 and later by the Habitual Offenders Act, 1952 and figure out a way to modify discriminatory provisions of the latter.</li> <li>• It also suggested the non-inclusion of DNTs/NTs/SNTs under the SC/ST/OBC and formulation of specific policies for the former, among many others.</li> <li>• Setting up a permanent commission for Nomadic, Semi Nomadic, and Denotified Tribes (NTs, SNTs, and DNTs) in India.</li> <li>• It stressed on taking measures to discern hurdles endured by the communities in availing basic facilities such as education, employment, health care, and legal documents, among others.</li> </ul>	<p><b>79.</b></p> <p><b>D</b></p> <p>All statements are correct</p> <p>About Lakshadweep Islands</p> <ul style="list-style-type: none"> <li>• Lakshadweep is a tropical archipelago comprising 36 atolls and coral reefs situated in the Laccadive Sea, positioned 280 km to 480 km off the Kerala coast.</li> <li>• The name Lakshadweep, meaning "one lakh islands" in Malayalam, the official and widely spoken native language in the territory, reflects its origin.</li> <li>• Fishing stands as the predominant industry.</li> <li>• As the smallest union territory of India, the islands collectively cover a surface area of merely 32 square kilometres.</li> <li>• Kavaratti functions as the capital of this uni-district Union Territory, falling under the jurisdiction of the Kerala High Court.</li> <li>• The primary languages spoken in Lakshadweep include Malayalam, Jeseri (Dweep Bhasha), and Mahl.</li> </ul> <p><b>Geography</b></p> <ul style="list-style-type: none"> <li>• The island is situated in the Laccadive Sea extending between 8 degree N and 12 degree N latitude.</li> <li>• The entire Lakshadweep islands group is made up of coral deposits. Statement 1 is correct.</li> <li>• The islands consist of unconsolidated pebbles, shingles, cobbles, and boulders. All are atolls surrounded by Fringing Reefs.</li> <li>• These islands are a part of Reunion Hotspot volcanism.</li> </ul> <p>Some islands under the Lakshadweep Islands group are:</p> <ul style="list-style-type: none"> <li>• Kavaratti ,Agatti ,Minicoy, Amindivi ,Androth,Kalpeni,Pitti ,Suheli Par ,Keltan, Chetlat, Kadmat, Bitra Perumul Par, Bangaram</li> <li>• Amindivi Islands are the northern-most while the Minicoy island is the southernmost. Statement 2 is correct.</li> <li>• 8 Degree Channel (8 degree north latitude) separates the islands of Minicoy and Maldives. Statement 3 is correct.</li> </ul>
-------------------	--	---

	<ul style="list-style-type: none"> <li>• 9 Degree Channel (9 degree north latitude) separates the island of Minicoy from the main Lakshadweep archipelago. Statement 4 is correct.</li> <li>• Largest island: Minicoy Island (south of the nine-degree channel)</li> <li>• The topography of the Lakshadweep Islands is flat and relief features such as hills, streams, valleys, etc. are absent.</li> </ul>	<b>81.</b>	<p><b>C</b></p> <p><b>Context:</b></p> <p>PM announces a solar rooftop scheme to electrify one crore households with solar electricity.</p> <p>About</p> <ul style="list-style-type: none"> <li>• The government will launch 'Pradhanmantri Suryodaya Yojana' with the target of installing rooftop solar on one crore houses.</li> <li>• It will not only reduce the electricity bill of the poor and middle class, but will also make India self-reliant in the field of energy.</li> </ul> <p><b>Current status</b></p> <ul style="list-style-type: none"> <li>• It is estimated that there are less than 10 lakh households with rooftop solar installations in the country.</li> <li>• There was a target to install 100 GW by 2022 - 60 GW from utility projects (mega concentrated solar parks) and 40 GW from rooftop solar.</li> <li>• But, according to the Ministry of New and Renewable Energy's website, solar power installed capacity in India has reached around 73.31 GW as of December 2023, while rooftop solar installed capacity is around 11.08 GW. Notably, solar power has a major share in the country's current renewable energy capacity, which stands at around 180 GW.</li> <li>• In terms of total solar capacity, Rajasthan is at the top with 18.7 GW. Gujarat is at the second position with 10.5 GW. Statement 1 is correct.</li> <li>• When it comes to rooftop solar capacity, Gujarat tops the list with 2.8 GW, followed by Maharashtra by 1.7 GW. Statement 2 is correct.</li> </ul>
<b>80.</b>	<p><b>B</b></p> <p>Free Movement Regime (FMR) Agreement</p> <ul style="list-style-type: none"> <li>• The FMR is a mutually agreed arrangement between the two countries that allows tribes living along the border on either side to travel up to 16 km inside the other country without a visa. Statement 1 is correct.</li> <li>• It was aimed to minimise the historical divide and facilitate cultural and economic ties.</li> <li>• The border between India and Myanmar was demarcated by the British in 1826, without seeking the opinion of the people living in the region, which effectively divided people of the same ethnicity and culture into two nations without their consent.</li> <li>• People in the region have strong ethnic and familial ties across the border.</li> <li>• It was implemented in 2018 as part of the Act East Policy and was supposed to provide impetus to local trade and business and boost regional ties. Statement 2 is incorrect.</li> <li>• The region has a long history of trans-border commerce through customs and border haats.</li> </ul> <p><b>Key Facts about Indo-Myanmar Border (IMB):</b></p> <ul style="list-style-type: none"> <li>• It runs for 1,643 km in the four states of Mizoram, Manipur, Nagaland, and Arunachal Pradesh.</li> <li>• It runs from the tripoint with China in the north to the tripoint with Bangladesh in the south.</li> <li>• Assam Rifles is tasked with guarding the IMB.</li> </ul>	<b>82.</b>	<p><b>A</b></p> <ul style="list-style-type: none"> <li>• There are an estimated 900 satras - monasteries of the neo-Vaishnav order - across Assam and beyond. Barpeta and Uttar Kamalabari are two of the foremost among them but they are not on the same level of spirituality or reverence as the Batadrava Than located roughly at the midpoint in the Nagaon district.</li> <li>• A 'than' is more than just a monastery that has a four-tier structure with a</li> </ul>

<p>prayer hall at its centre. And Batadrava, also spelled Bordowa, has been more than just an exalted place of worship for the adherents of the Ekasarana Dharma, a neo-Vaishnav monolithic form of spiritualism propagated by 15th-16th Century saint-reformer Srimanta Sankaradeva.</p> <p><b>Spread of Sattras</b></p> <ul style="list-style-type: none"> <li>• <b>Founding:</b> Srimanta Sankaradeva established the first Satra in 1494 in Bardowa, his native village in Nagaon district.</li> <li>• <b>Expansion:</b> As Sankaradeva preached, Sattras were established across the Brahmaputra Valley, including Coochbehar in West Bengal.</li> <li>• <b>Current Count:</b> There are nearly 900 Sattras today, with significant ones located in Majuli island, Barpeta, Nagaon, and Dhubri.</li> </ul> <p><b>Composition of a Sattra</b></p> <ul style="list-style-type: none"> <li>• Central Worship Hall: Each Sattra has a central worship hall known as "naamghar," which serves as its nucleus.</li> <li>• Sattradhikar: A Sattra is headed by an influential leader known as the "Sattradhikar."</li> <li>• Bhakats: Monks, referred to as bhakats, are initiated into Sattras at a young age, and their celibacy status varies depending on the Sattra they belong to.</li> </ul> <p><b>Philosophy of Srimanta Sankaradeva</b></p> <ul style="list-style-type: none"> <li>• Teaching: His teaching focused on prayer and chanting (naam) instead of idol worship.</li> <li>• Dharma: His dharma was based on the four components of deva (god), naam (prayers), bhakats (devotees), and guru (teacher).</li> <li>• Ek Saran Naam Dharma: The saint propagated the Ek Saran Naam Dharma, focussed on worship in the form of bhakti (devotion) to Lord Krishna, through singing and congregational listening of His name and deeds.</li> <li>• Sankaradeva espoused a society based on equality and fraternity, free from caste</li> </ul>	<p>differences, orthodox Brahmanical rituals and sacrifices.</p> <ul style="list-style-type: none"> <li>• The saint traveled across Assam, spreading his teachings and establishing the Sattras/Thans as centers of religious, social and cultural reforms in the 16th century.</li> </ul> <p><b>83. D</b></p> <p><b>What is Project BHISHM?</b></p> <ul style="list-style-type: none"> <li>• Project BHISHM, which stands for Bharat Health Initiative for Sahyog, Hita and Maitri, is a revolutionary initiative that aims to bolster medical readiness and response capabilities.</li> <li>• It involves the deployment of mobile hospitals known as Arogya Maitri Disaster Management Cube-BHISHM. These units are equipped with cutting-edge technology and are designed to treat up to 200 casualties.</li> <li>• The portable hospital 'Project BHISHMA,' includes: Fully equipped operation theatre, Mini-ICUs and ventilators, Blood-testing equipment and X-ray machine, Cooking station for self-sufficiency and Capabilities to handle various injuries, including bullet, burn, head, spinal, and chest injuries, fractures, and major bleeding.</li> </ul> <p>About Arogya Maitri Disaster management cube:</p> <ul style="list-style-type: none"> <li>• The Aid Cube integrates Artificial Intelligence (AI) and data analytics to facilitate effective coordination, real-time monitoring, and efficient management of medical services in the field.</li> <li>• It contains 72 easily transportable components that can be conveniently carried by hand, cycle, or even drone. The Aid Cube can be deployed within an astonishing 12 minutes, effectively bridging the crucial time gap from primary care to definitive care.</li> <li>• The state-of-the-art BHISHM software system integrated into a provided tablet allows operators to locate items quickly, monitor their usage and expiry, and ensure readiness for subsequent deployments.</li> </ul>
--	---

	<ul style="list-style-type: none"> <li>• These cubes are robust, waterproof, and light, designed for various configurations, making them ideal for diverse emergency scenarios.</li> <li>• From airdrops to ground transportation, the cube can be rapidly deployed anywhere, ensuring immediate response capability.</li> </ul>	<p><b>Statement II is correct.</b></p> <p><b>Other similar innovations</b></p> <ul style="list-style-type: none"> <li>• A similar snake-like robot was unveiled by NASA's Jet Propulsion Laboratory (JPL), which was specifically crafted to work on rough terrains of our solar system's planets and moons.</li> <li>• The robot named Exobiology Extant Life Surveyor (EELS 1.0) is engineered to navigate diverse landscapes, including ice, sand, cliff walls, deep craters and lava tubes.</li> </ul>
84.	<p><b>D</b></p> <p><b>About FiloBot</b></p> <ul style="list-style-type: none"> <li>• It is different from conventional climbing robots as it doesn't depend on pre-programmed movements. Statement I is incorrect.</li> <li>• It instead absorbs 3D printing filament through its head and extends its length over time, just like a creeper.</li> <li>• The team utilised a combination of plant behaviours like phototropism, negative phototropism and gravitropism and utilises these naturally occurring behaviours in high-tech robots.</li> <li>• The tests for FiloBot have been successful and displayed remarkable adaptability that adjusts its growth trajectory dynamically in response to moving light intensity.</li> </ul> <p><b>Significance</b></p> <ul style="list-style-type: none"> <li>• By equipping autonomous systems with transportable additive manufacturing techniques merged with bioinspired behavioural strategies, future robots can navigate unstructured and dynamic environments and even be capable of self-building infrastructure.</li> <li>• This new innovation has opened a new potential impact of technology that can be applied in robotics, where adaptability and responsiveness redefine the capabilities of climbing robots.</li> </ul>  <p><b>Concept and Inspiration:</b></p> <ul style="list-style-type: none"> <li>- Filobot is a revolutionary robot inspired by the climbing behavior of vines.</li> <li>- Developed by Emmanuela Del Dottore and her team, it utilizes plant behaviors like phototropism, negative phototropism, and gravitropism to navigate and climb vertical surfaces.</li> <li>- Unlike traditional robots with pre-programmed movements, Filobot grows and adapts organically, much like a vine.</li> </ul> <p><b>Potential Applications:</b></p> <ul style="list-style-type: none"> <li>- <b>Inspection and Maintenance:</b> Filobot can inspect tall structures, bridges, or wind turbines, reaching areas inaccessible to conventional methods.</li> <li>- <b>Disaster Response:</b> Its adaptability and self-repair capabilities make it ideal for navigating debris and providing crucial support in disaster zones.</li> <li>- <b>Exploration and Research:</b> Filobot can be used to explore caves, volcanoes, or other hazardous environments, gathering data and sending back valuable information.</li> <li>- <b>Medical Applications:</b> Smaller, specialized versions of Filobot could be used for minimally invasive surgery, accessing delicate areas within the human body.</li> </ul> <p><b>Core Functionalities:</b></p> <ul style="list-style-type: none"> <li>- <b>Growth Mechanism:</b> Filobot absorbs 3D printing filament through its head, extending its length over time. This continuous growth allows it to adjust its trajectory dynamically based on environmental factors like light and gravity.</li> <li>- <b>Adaptability:</b> By mimicking plant responses, Filobot can adjust its growth direction to overcome obstacles, reach difficult-to-access areas, and even self-repair by replacing damaged segments with new filament.</li> <li>- <b>Sensors and Control:</b> While Filobot relies on bio-inspired behaviors for basic movement, it can also be equipped with additional sensors and control systems. This enables remote monitoring, guided navigation, and even semi-autonomous operation with obstacle avoidance capabilities.</li> </ul>	<p><b>85. A</b></p> <p>The Lake Retba's waters are virtually devoid of life is on the verge of disappearing due to pollution and mining.</p> <ul style="list-style-type: none"> <li>• It is also known as Lac Rose (the Pink Lake).</li> <li>• Location: It is located north of the Cap Vert peninsula of Senegal, northeast of Dakar.</li> <li>• The lake is isolated from the sea by sand dunes.</li> <li>• Its fresh water comes from the seasonal water table in the dunes, which are higher than the lake. Thus the sea provides most of the lake's water and all of its salt.</li> <li>• The Pink Lake is one of the main tourist destinations in the Dakar region, primarily because of the pink colour of its waters.</li> </ul> <p><b>Why it is pink?</b></p> <ul style="list-style-type: none"> <li>• The pink coloration is due to the proliferation of halophilic green algae (living in a salty environment), <i>Dunaliella salina</i>, which contain red pigments.</li> <li>• The alga is associated with halophilic bacteria of the genus <i>Halobacterium</i>.</li> <li>• This microscopic alga's resistance to salt comes from its high concentration of carotenoid pigments, which protect it from light, and its high glycerol content.</li> <li>• In fact, <i>Dunaliella salina</i> contains at least four antioxidant pigments (beta-carotene, astaxanthin, lutein and zeaxanthin), which are rich in vitamins and trace elements.</li> </ul>

	<ul style="list-style-type: none"> <li>When salinity is high, algae with red pigments thrive, and when salinity is low, they give way to other algae rich in green pigments.</li> </ul>		<p><b>Aim:</b></p> <ul style="list-style-type: none"> <li>To nurture at least 20 domestic companies involved in semiconductor design and facilitate them to achieve turnover of more than Rs.1500 Crore in the next 5 years. Statement 2 is correct.</li> </ul> <p><b>The scheme has three components</b></p> <ol style="list-style-type: none"> <li><b>Chip Design infrastructure support:</b> Under this C-DAC will setup the India Chip Centre to host the state-of-the-art design infrastructure (viz. EDA Tools, IP Cores and support for MPW (Multi Project Wafer fabrication) &amp; post-silicon validation) and facilitate its access to supported companies.</li> <li><b>Product Design Linked Incentive:</b> Under this component, a reimbursement of up to 50% of the eligible expenditure subject to a ceiling of 15 Crore rupees per application will be provided as fiscal support to the approved applicants who are engaged in semiconductor design.</li> <li><b>Deployment Linked Incentive:</b> Under this an incentive of 6% to 4% of net sales turnover over 5 years subject to a ceiling of ₹30 Crore per application will be provided to approved applicants whose semiconductor design for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems &amp; IP Cores and semiconductor linked design are deployed in electronic products.</li> </ol> <p>Nodal Agency: C-DAC (Centre for Development of Advanced Computing). Statement 3 is incorrect.</p>
86.	<p><b>B</b></p> <p><b>Statement 1,2 are correct, Statement 3 is incorrect</b></p> <p><b>Context:</b></p> <p>The Ministry of Electronics and Information (MeitY) is seeking applications from 100 domestic semiconductor chip design firms, companies, start-ups and Micro, Small and Medium Enterprises (MSMEs) under its Design Linked Incentive (DLI) Scheme.</p> <ul style="list-style-type: none"> <li>The DLI scheme is part of the MeitY's comprehensive Program for the Development of Semiconductors and Display Manufacturing Ecosystems in the country. Statement 1 is correct.</li> <li>Lately, there has been an abrupt and cascading shortage of semiconductors worldwide.</li> </ul> <p><b>About:</b></p> <ul style="list-style-type: none"> <li>Under the DLI Scheme financial incentives and design infrastructure support will be extended to domestic companies, start-ups and MSMEs.</li> <li>The incentives will be provided across various stages of development and deployment of semiconductor design for Integrated Circuits (ICs), Chipsets, System on Chips (SoCs), Systems &amp; IP Cores and semiconductor linked design for over a period of 5 years.</li> </ul> <p><b>Eligibility:</b></p> <ul style="list-style-type: none"> <li>The approved applicants that claim incentives under the scheme will be encouraged to retain their domestic status (i.e., more than 50% of the capital in it is beneficially owned by resident Indian citizens and/ or Indian companies, which are ultimately owned and controlled by resident Indian citizens) for a period of three years after claiming incentives under the scheme.</li> <li>An applicant must meet the Threshold and Ceiling Limits to be eligible for disbursement of incentives under the Scheme.</li> </ul>		<p><b>87. B</b></p> <p><b>Context:</b></p> <p>Indian Space Research Organisation has completed all key tests on Insat-3DS satellite before the final review which will be followed by its shipping to the spaceport in Sriharikota, Andhra Pradesh.</p> <ul style="list-style-type: none"> <li>It is a collaborative effort between ISRO and the India Meteorological Department (IMD).</li> <li>It is part of a series of climate observatory satellites aimed at enhancing climate services. Comprising three dedicated Earth observation satellites, including INSAT-3D and INSAT-3DR already in orbit.</li> </ul>



	<ul style="list-style-type: none"> <li>It will be launched by using the Geosynchronous Launch Vehicle (GSLV-F14).</li> </ul> <p><b>What is GSLV-F14?</b></p> <ul style="list-style-type: none"> <li>It is a more advanced rocket utilising liquid propellant.</li> <li>The rocket, distinguished by its higher capacity and the use of cryogenic liquid propellants in all three stages, presents a more complex engineering challenge but allows for a substantially higher lift-off weight capacity.</li> </ul> <p><b>Key facts about INSAT-3DR</b></p> <ul style="list-style-type: none"> <li>It is an advanced meteorological satellite of India configured with an imaging System and an Atmospheric Sounder.</li> <li>The significant improvements incorporated in INSAT-3DR are:</li> <li>Imaging in Middle Infrared band to provide night time pictures of low clouds and fog</li> <li>Imaging in two Thermal Infrared bands for estimation of Sea Surface Temperature (SST) with better accuracy</li> <li>Higher Spatial Resolution in the Visible and Thermal Infrared bands</li> <li>Payloads: INSAT-3DR carries a multi spectral Imager, 19 channel Sounder, Data Relay Transponder and Search and Rescue Transponder.</li> </ul>	<p><b>Torkam Border</b></p> <ul style="list-style-type: none"> <li>Pakistan and Afghanistan reopened a key trade crossing on Tuesday, officials on both sides said, after a row over travel papers as Islamabad cracks down on cross-border movements.</li> <li>The Torkham border closure since January 12 came after Islamabad imposed tighter controls requiring drivers from both sides to have visas and passports - documents many Afghans do not have.</li> </ul>
88.	<p><b>B</b></p> <p><b>Pair is correct, Pair 2,3 are incorrect.</b></p> <p><b>Kampala</b></p> <ul style="list-style-type: none"> <li>The 19th Summit of the Non-Aligned Movement was held in January 2024 in Kampala, Uganda.</li> </ul> <p><b>Willingdon Island</b></p> <ul style="list-style-type: none"> <li>Willingdon Island is a seaport located in the city of Kochi, Kerala.</li> <li>It is the largest man-made/artificial island of India and is surrounded by backwaters (a part of a river in which there is little or no current).</li> </ul>	<p><b>89. D</b></p> <p>All pairs are correct</p> <ul style="list-style-type: none"> <li>The Indian Army contingent is taking part in the 2nd edition of India-Egypt Joint Special Forces Exercise CYCLONE.</li> <li>The Exercise is being conducted at Anshas, Egypt. The first edition of the exercise was conducted in 2023 in India.</li> <li>The 11th edition of India-Kyrgyzstan Joint Special Forces Exercise KHANJAR has commenced at the Special Forces Training School in Bakloh, Himachal Pradesh.</li> <li>Aim of the exercise is to exchange experiences and best practices in Counter Terrorism and Special Forces Operations in Built-up Area and Mountainous Terrain.</li> <li>Ekuverin, meaning 'friend', is a bilateral annual exercise held alternately in India and Maldives.</li> <li>The exercise is aimed at enhancing interoperability in Counter Insurgency/ Counter Terrorism Operations under the UN mandate and to carry out joint Humanitarian Assistance &amp; Disaster Relief operations. The focus is to share best practices, enhance coordination and cooperation between both the forces at tactical level.</li> <li>Exercise Shakti is an important biennial military training exercise between India and France.</li> </ul>
		<p><b>90. C</b></p> <p>Context:</p> <p>According to experts, the centre's oil exploration plans off Kanniyakumari coast</p>

	<p>could severely impact fertile fishing ground, marine biodiversity and wadge bank ecosystem.</p> <p>About Wadge Bank Ecosystem:</p> <ul style="list-style-type: none"> <li>The Wadge Bank is situated to the South of Cape Comorin and lies generally between latitudes 7°10'N and 8°00'N and longitudes 76°40'E and 78°00'E, but outside the territorial waters of India.</li> <li>The Bank shelves gradually up to 200 metres depth with its most extensive flattening in an East-West direction between the 50 metres and 100 metres contours.</li> <li>The sea-bed consists of sand and shell and is rocky in places.</li> </ul> <p><b>Significance</b></p> <ul style="list-style-type: none"> <li>Wadge Bank is an invaluable treasure that indigenous people and communities depend on for food and resources that were important to their culture.</li> <li>It is like a warehouse, a feeding house for the fish, and a number of reef systems exist in this region with over 200 varieties of rare fish species and more than 60 kinds of aquatic species.</li> </ul>	<p>Developing Countries" issued at the end of the first session of the United Nations Conference on Trade and Development (UNCTAD) in Geneva. Statement 1 is incorrect.</p> <ul style="list-style-type: none"> <li>The G77 group has 134 members excluding China because the Chinese government does not consider itself a member, but rather a partner that provides political and financial support to the group. Statement 3 is incorrect.</li> </ul> <p><b>Aims:</b></p> <ul style="list-style-type: none"> <li>The Group of 77 is the largest intergovernmental organization of developing countries in the United Nations.</li> <li>It provides the means for the countries of the South to articulate and promote their collective economic interests and enhance their joint negotiating capacity on all major international economic issues within the United Nations system. Statement 2 is correct.</li> </ul>
91.	<p><b>A</b></p> <p>Statement 2 is correct, Statement 1,3 are incorrect</p> <p>Context:</p> <p>Recently, the 3rd South Summit was held in Kampala, Uganda, bringing together the members of the Group of 77 (G77) and China.</p> <ul style="list-style-type: none"> <li>The Third South Summit brought together the 134 members of the Group of 77 and China to boost South-South cooperation on trade, investment, sustainable development, climate change, poverty eradication, and digital economy, among other areas. The theme of the summit was "Leaving No One Behind."</li> </ul> <p><b>What is Group of 77 (G77)?</b></p> <p><b>Establishment:</b></p> <ul style="list-style-type: none"> <li>The Group of 77 (G-77) was established on 15th June 1964 by signatories of the "Joint Declaration of the Seventy-Seven</li> </ul>	<p><b>92. D</b></p> <p>About Default Bail:</p> <ul style="list-style-type: none"> <li>The Code of Criminal Procedure (CrPC) provides for three kinds of bail. Section 438 provides for Anticipatory Bail; Section 439 provides for Regular bail whereas Section 167(2) provides for default/statutory bail.</li> <li>Default bail, also known as statutory bail, is a type of bail which accrues as a right to an accused detained in custody, when the police fail to or are unable to complete the investigation and file the chargesheet within the time frame stipulated under the law.</li> <li>When a person is arrested under any section of any act, there is an obligation on the arresting authority to complete the investigation within a specified time. This period is mandatory, and not obligatory.</li> </ul> <p>The statutory time frame for completing the investigation of offences under the IPC, and for filing of the charge sheet varies depending on the gravity of the offence.</p> <p>1. For offences punishable with imprisonment up to 10 years, the investigation must be completed within</p>

<p>60 days of arrest.</p> <p>2. For offences punishable with death, imprisonment for life, or imprisonment for more than 10 years, the investigation must be completed within 90 days of arrest (excluding investigation/arrests made under special statutes).</p> <p>Therefore, when a person is arrested and the police is not able to complete investigation within the specified period, it is their default, and the arrested person cannot be kept behind bars beyond this period. This entitlement is called default bail. Statement II is correct.</p> <p>This is enshrined in Section 167(2) of the CrPC, where it is not possible for the police to complete an investigation in time.</p> <p><b>Principles:</b></p> <ul style="list-style-type: none"> <li>• It is a right, regardless of the nature of the crime.</li> <li>• The stipulated period within which the charge sheet has to be filed begins from the day the accused is remanded for the first time.</li> <li>• It includes days spent in both police and judicial custody, but not days spent in house-arrest.</li> <li>• For an accused to be entitled to default bail, the accused must have been in custody during the entire statutory period for the investigation, and the accused must not have been released on bail during that period.</li> <li>• A requirement for the grant of statutory bail is that the right should be claimed by the person in custody.</li> <li>• If the charge sheet is not filed within the stipulated period, but there is no application for bail under Section 167(2), there is no automatic bail.</li> <li>• Once the accused files an application for bail under Section 167(2), it is considered that he/she has enforced the right to be released on default bail.</li> <li>• This right only comes into place after the stipulated time limit for investigation has expired.</li> <li>• If the accused fails to apply for default bail after the investigation time period has expired and the investigating agency files a charge-sheet or seeks more time</li> </ul>	<p>before the accused makes such an application for default bail, then the right to default bail is no longer applicable. The Magistrate can then grant further time for the completion of the investigation.</p> <ul style="list-style-type: none"> <li>• However, the accused may still be released on bail under other legal provisions of the Code.</li> <li>• The default bail is not liable to be cancelled even after the completion of the investigation and the submission of the charge sheet. The default bail can be cancelled only on the grounds and considerations on which a regular bail can be cancelled.</li> </ul> <p>Default Bail as Fundamental Right:</p> <ul style="list-style-type: none"> <li>• The Supreme Court, while hearing an appeal regarding default bail, said that default bail under the first proviso of Section 167(2) of the CrPC is a fundamental right and not merely a statutory right as it is, a procedure established by law under Article 21 of the Constitution. Statement I is incorrect.</li> </ul> <p><b>93. C</b></p> <p>Statement 2,3&amp;4 are correct, Statement 1 is incorrect</p> <p>About Soda Lake</p> <ul style="list-style-type: none"> <li>• It is a lake with a pH value usually between 9 and 11. Statement 1 is incorrect.</li> <li>• High carbonate concentration, especially sodium carbonate, is responsible for the alkalinity of the water.</li> <li>• It may also contain a high concentration of sodium chloride and other salts making it saline or hypersaline Lake.</li> <li>• These are highly productive ecosystems compared to the freshwater lakes.</li> <li>• These are the most productive aquatic environments on Earth because of the availability of dissolved carbon dioxide. Statement 2 is correct.</li> <li>• They occur naturally in both arid and semi-arid areas.</li> </ul>
--	---

<p><b>Geology and Genesis</b></p> <ul style="list-style-type: none"> <li>• Geological, climatic, and geographic requirements are required for a lake to become alkaline.</li> <li>• A topography that limits the outflow of water from the lake is needed.</li> <li>• An endorheic basin is formed when the water is confined without the outflow.</li> <li>• The pH of the water in the depression rises through the evaporation of the lake which requires a suitable climate like the desert climate to balance between the inflow and evaporation.</li> <li>• The rate at which carbonate salt dissolve in the lake water depends on the ecology of the surrounding area.</li> <li>• The relative absence of magnesium and calcium is critical in the formation of the soda lake since magnesium or calcium is likely to dissolve quickly and displace the carbonate ion thus neutralizing the pH of the lake water.</li> </ul> <p><b>Biodiversity</b></p> <ul style="list-style-type: none"> <li>• These are dominated by prokaryotes like bacteria and archaea, especially in lakes with higher levels of alkalinity.</li> <li>• Multicellular organisms such as brine shrimp and fish are found in plenty if not most of the soda lakes.</li> </ul> <p><b>Examples of Soda Lakes</b></p> <ul style="list-style-type: none"> <li>• Africa and Asia have the highest number of soda lakes since the two continents have vast desert conditions which are perfect for the formation of soda lakes.</li> <li>• Most of the soda lakes in Africa are located in Eastern Africa, especially in Kenya, Tanzania, and Ethiopia.</li> <li>• Lake Natron in Tanzania is one of the most outstanding soda lakes in Africa</li> <li>• India and China have the highest number of soda lakes in Asia. Statement 3 is correct.</li> <li>• Some of the soda lakes in Asia include Lake Van, Tso Kar Salt Lake, Pangong Salt Lake, and Lake Zabuye. Statement 4 is correct.</li> </ul>	<p><b>94. D</b></p> <ul style="list-style-type: none"> <li>• The Election Commission of India (ECI) has developed Election Seizure Management System (ESMS) for real-time updates. Statement 1 is incorrect.</li> <li>• The ESMS is a dedicated technology platform where all the enforcement agencies such as police, transportation authorities, Central tax agencies and others share information in real time.</li> <li>• Both the Central and State government enforcement agencies share the information on the platform.</li> <li>• It was used for the 1st time during the State Assembly Elections in November 2023 in the 5 states of Mizoram, Chhattisgarh, Madhya Pradesh, Rajasthan and Telangana. Statement 2 is incorrect.</li> <li>• Objective - To check the flow of illegal cash, drugs and freebies such as sarees, liquor etc. thereby ensuring free and fair elections.</li> <li>• Nodal agencies - State nodal officers, District nodal officers and flying squad teams.</li> </ul> <p><b>95. B</b></p> <p><b>Context</b></p> <p>Scientists at CSIR-Indian Institute of Integrative Medicine (IIIM), Jammu, have found that phytocannabinoids, a class of compounds found in the cannabis plant, possess some hitherto unexplored antibiotic properties.</p> <p><b>About the study</b></p> <ul style="list-style-type: none"> <li>• The study specifically focused on tetrahydrocannabinidiol (THCBD), a phytocannabinoid, and its efficacy against <i>Staphylococcus aureus</i>, a bacteria contributing to antibiotic resistance.</li> <li>• THCBD demonstrated strong antibacterial effects against various resistant strains of <i>S. aureus</i>, including the methicillin-resistant strain.</li> </ul> <p>Cannabinoids are a class of compounds found in the cannabis plant.</p> <ul style="list-style-type: none"> <li>• The prefix 'phyto' in phytocannabinoid means it comes from a plant.</li> </ul>
---	--

	<p>Cannabinoids bind to receptors in the bodies of animals to produce a variety of neurological effects.</p> <ul style="list-style-type: none"> <li>The researchers extracted cannabidiol from a cannabis plant and made it react with hydrogen, using palladium as a catalyst.</li> <li>This process yielded a mixture of molecules with the same composition and order of atoms but different structures.</li> <li>One of them was THCBD.</li> </ul> <p>Antimicrobial Resistance (AMR): It is a major health concern worldwide. It refers to when bacteria, viruses, fungi, and parasites no longer respond to medicines used to treat them.</p> <ul style="list-style-type: none"> <li>Bacterias have developed certain sophisticated 'shields' to resist the effects of antibiotic medications over a period of time.</li> <li>Biofilms: Thin sheets of bacterial colonies that are more resistant to antibiotics than when separated.</li> <li>Efflux pumps: These are cellular mechanisms called efflux pumps that flush drugs out from cells.</li> <li>The resulting AMR increases the risk of disease spread, severe illness, and death.</li> </ul>	<p>Why is this area important strategically?</p> <ul style="list-style-type: none"> <li>The areas south of Mendhar leading to the Pir Panjal range through Hilkaka constitute among the shortest routes of access for infiltrators from across the LoC into the Kashmir valley.</li> <li>The dense forests and steep mountain slopes offer both adequate cover and visual domination of the area.</li> </ul> <p><b>Pir Panjal range:</b></p> <ul style="list-style-type: none"> <li>The Pir Panjal Range is a chain of mountains in the Lesser Himalayan region located in the Indian subcontinent.</li> <li>It extends between Beas and Kishanganga rivers, from Himachal Pradesh to Jammu and Kashmir.</li> <li>Passes: Pir Panjal Pass, Banihal pass, Sinthan pass, Saach Pass, Rohtang La.</li> <li>The Pir Panjal Pass connects the Kashmir valley with Rajouri and Poonch via the Mughal Road.</li> </ul>
96.	<p><b>A</b></p> <p><b>Context</b></p> <p>The Indian Army has launched Operation Sarvashakti in Jammu and Kashmir, deploying forces on both sides of the Pir Panjal range to target terrorists.</p> <p><b>About</b></p> <ul style="list-style-type: none"> <li>The operation will focus on locating the terrorists' hideouts in the dense jungles, mountains and the caves.</li> <li>The Chinara Corps along with the Nagrota-headquartered White Knight Corps would be carrying out simultaneous operations.</li> <li>The operation is reminiscent of Operation Sarpvinash, which was launched in 2003 to eliminate terrorists from the same area.</li> </ul>	<p><b>97. D</b></p> <p><b>About Coal Gasification:</b></p> <ul style="list-style-type: none"> <li><b>Process:</b> Coal gasification is a thermo-chemical procedure wherein the pressure and heat of the gasifier disintegrate coal into its chemical components.</li> <li><b>Constituents:</b> The resulting "syngas" is mostly carbon monoxide (CO) and hydrogen, with some other gaseous substances such Hydrogen Sulphide and Carbon dioxide.</li> </ul> <p><b>Cleaner Alternative:</b> Coal gasification is said to be more efficient than traditional coal burning since it can use the gases two times:</p> <ol style="list-style-type: none"> <li><b>Primary use:</b> Coal Gases are first purified of contaminants before being fired inside a turbine to produce energy.</li> <li><b>Secondary use:</b> The gas turbine exhaust heat can be then collected and used to produce steam for a steam turbine-generator.</li> </ol> <ul style="list-style-type: none"> <li><b>Efficiency:</b> Coal gasification processing facility using this dual method can possibly attain an efficiency of 50% or higher, compared to the customary coal power plant, which is typically just above 30%.</li> </ul>

	<p><b>Methods of Coal Gasification</b></p> <ul style="list-style-type: none"> <li>• In-situ method: Here oxygen is infused into the seam together with water and ignited at high temperatures, causing coal to partly oxidize into hydrogen, CO, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), and hydrogen sulfide (H<sub>2</sub>S). Statement 1 is incorrect.</li> <li>• Ex-situ reactors: They are designed to simulate the gasification process above the ground's surface. Sulphur in coal is transformed to H<sub>2</sub>S and trace volumes of carbonyl sulphide((COS) during the gasification process. Statement 2 is incorrect.</li> </ul> <p><b>Types of Gasifiers</b></p> <ul style="list-style-type: none"> <li>• Fixed Bed Gasifiers: It has a solids stream that is independent of the gas flow, needs little pre-treatment of the feed coal, and has a high thermal efficiency.</li> <li>• Fluidized Bed Gasifiers: It has uniform particulate blending, uniform thermal gradients, a high char recycling percentage, and a low capital cost.</li> <li>• Entrained Flow Gasifiers: It can handle almost any feed, and the syngas it produces is free of oils and tars.</li> </ul> <p>About the National Coal Gasification Mission:</p> <ul style="list-style-type: none"> <li>• It is an initiative by the Union Ministry of Coal, under the Atmanirbhar Bharat Abhiyaan.</li> <li>• The mission aims to utilise coal through coal gasification, with the goal of achieving 100 MT coal gasification by 2030, with investments worth over Rs 4 trillion.</li> <li>• It is expected to reduce imports by 2030.</li> <li>• It envisions the adoption of indigenous technologies for the production of chemical products and their derivatives.</li> <li>• It is expected to reduce the country's reliance on imports of natural gas, methanol, ammonia, and other essential products.</li> </ul>	<ul style="list-style-type: none"> <li>• It was established as an independent authority to regulate the auditing profession and accounting standards in India. Statement 2 is correct.</li> <li>• Its goal is to enhance the country's financial statement quality and consistency and to guarantee that businesses and financial institutions report accurate and fair information.</li> </ul> <p><b>Composition:</b></p> <ul style="list-style-type: none"> <li>• The Companies Act requires the NFRA to have a chairperson who will be appointed by the Central Government and a maximum of 15 members.</li> <li>• The appointment of such chairperson and members are subject to the following qualifications:</li> <li>• They should be having an expertise in accountancy, auditing, finance, or law.</li> <li>• They are required to make a declaration to the Central Government that there is no conflict of interest or lack of independence in their appointment.</li> <li>• All the members, including the chairperson, who are in full-time employment, should not be associated with any audit firm (including related consultancy firms) during their term of office and 2 years after their term.</li> </ul> <p>The NFRA has the following responsibilities:</p> <ul style="list-style-type: none"> <li>• Make recommendations on the foundation and laying down of accounting and auditing policies and standards;</li> <li>• Monitor and enforce the compliance of the accounting standards and auditing standards;</li> <li>• Oversee the quality of service of the professionals (such as auditors, CFOs, etc.) and suggest measures required for improvement in the quality of service;</li> </ul> <p><b>Powers:</b></p> <ul style="list-style-type: none"> <li>• NFRA has the power to investigate, either suo moto or on a reference made to it by the Central Government, into the matters of professional or other misconduct committed by any member or firm of chartered accountants registered under the Chartered Accountants Act, 1949. Statement 3 is correct.</li> <li>• It has the same powers as are vested in a civil court under the Code of Civil Procedure, 1908, while trying a suit. Statement 4 is correct.</li> </ul>
98.	<p><b>D</b></p> <p>All statements are correct</p> <p>About National Financial Reporting Authority (NFRA):</p> <ul style="list-style-type: none"> <li>• It is a statutory body constituted under Section 132 of the Companies Act, 2013. Statement 1 is correct.</li> </ul>	

	<ul style="list-style-type: none"> <li>Where professional or other misconduct is proved, it shall have the power to impose punishment.</li> <li>Any person who is not satisfied with the order of the NFRA can then make an appeal to the Appellate Authority.</li> </ul> <p><b>Jurisdiction of NFRA:</b></p> <ul style="list-style-type: none"> <li>The jurisdiction of the NFRA for the investigation of Chartered Accountants and their firms would extend to listed companies and large unlisted public companies, the thresholds for which shall be prescribed in the Rules.</li> <li>The Central Government can also refer such other entities for investigation where public interest would be involved.</li> <li>Head Office: New Delhi.</li> </ul>		<p>inscriptions, Narasimhan's Mamalla puram, Kanchi Kailasanatha, and Saluvankuppam temple inscriptions, Mutharaiyar's Senthalai inscriptions are examples of this variety.</p> <ul style="list-style-type: none"> <li>The transitional variety of Grantha inscriptions roughly belong to three centuries between 650 CE and 950 CE. Later Pallava's (Nandivarman's Kasakudi, Udayendram plates, etc.) and Pandyan Nedunjadaiyan's Anaimalai inscriptions are samples of this.</li> <li>The medieval variety dates from about 950 CE to 1250 CE. Inscriptions of the imperial Cholas of Thanjavur are examples of this.</li> <li>The modern variety belongs to the later Pandya's and Vijayanagarar periods.</li> <li>It was popular in Tamil Nadu until the early 20th century.</li> <li>After the introduction of printing machines, many Sanskrit books transcribed from palm leaves were printed in Grantha script.</li> <li>After Independence, the popularity of Hindi in Deva Nagari script influenced all printing works, and Grantha script went out of vogue.</li> </ul>
99.	<p><b>B</b></p> <p>A team of archaeologists recently discovered two stone inscriptions of 'Grantham' and Tamil dating 11th and 16th centuries respectively at Pazhnchervazhi village near Kangayam.</p> <p><b>About Grantham Inscriptions:</b></p> <ul style="list-style-type: none"> <li>Grantha is an important historical script that was once used to write Sanskrit throughout South East Asia and greater Tamil Nadu.</li> <li>The word Grantha denotes in Sanskrit 'a literary work'. Evidently, the script used for writing the Sanskrit works obtained the same name.</li> <li>At one time, it was prevalent throughout South India.</li> <li>When the Malayalam language began to freely borrow words as well as the rules of grammar from Sanskrit, this script was adopted for writing that language and was known as Arya Ezhuthu.</li> <li>Both Grantha and Tamil scripts appear alike in modern forms. The evolution of both scripts from Brahmi was also more or less similar.</li> <li>The development of the Grantha script in Tamil Nadu may be divided into four periods. The archaic and ornamental, the transitional, the medieval, and the modern.</li> <li>Archaic and ornamental variety is commonly known as Pallava Grantha. Mahendravarman's Tiruchirappalli rock cut cave and other cave temple</li> </ul>		<p><b>100. D</b></p> <p>All pairs are correct.</p> <ul style="list-style-type: none"> <li>Lake Van (Turkey): The largest lake in Turkey, situated in the Armenian Highlands and known for its volcanic origins and unique soda ash islands.</li> <li>Lake Onega (Russia): The second-largest lake in Europe, located in north-western Russia and known for its archipelago of islands and historical significance.</li> <li>Lake Tahoe (USA): A stunning alpine lake located on the border of California and Nevada, known for its crystal-clear waters, winter sports, and surrounding mountains.</li> <li>Lake Poopo (Bolivia): This lake in west-central Bolivia occupies a shallow depression in the Altiplano, or high plateau, at 12,090 feet above sea level. By December 2015, however, the lake had completely dried up as a result of the combined effects of climate change-exacerbated drought and sediment build-up caused by the local mining industry.</li> </ul>

**CURRENT AFFAIRS TEST SERIES-  
CSE PRELIMS 2024**

**CURRENT AFFAIRS TEST  
JANUARY 2024**

**SELF- POST TEST ANALYSIS**

Dear Student,

'Self Post Test Analysis' is a tool (in the form of a questionnaire) that has been designed for you to inculcate the habit of reflecting upon your test performance and learning from your mistakes.

Students who make it a habit to reflect upon their performance after giving a test show improvement in their performance curve.

Please use the following questionnaire to reflect on your performance and preparation.

Number of Questions Attempted	
Correct	
Incorrect	
Silly Mistakes	
Unkown Questions	

**Which concepts need clarity ?**

**Which questions and concepts need revision ?**

**Strong and Weak areas :**