

General Studies

Current Affair Test (September-2023)

1. Answer: (C)

Explanation: A somatic mutation describes any alteration at the cellular level in somatic tissues occurring after fertilization. These mutations do not involve the germline and consequently do not pass on to offspring. An error that occurs in the DNA after birth but during development is called a somatic genetic mutation. Their occurrence is driven by the repeated 'copy-pasting' of the genome. As the cells divide, the DNA is copied with extremely high accuracy due to proteins. A somatic genetic mutation can render a cell fitter than others, which lead to the formation of tumours. So these mutations are called driver mutations. Hence, both statements are correct.

2. Answer: (A)

Recently, researchers found a live eight-centimeter *Ophidascaris robertsi* roundworm in the brain of a 64-year-old Australian woman.

- It is the parasitic roundworm, typically found in carpet pythons.
- It typically lives in a python's oesophagus and stomach, and sheds its eggs in the host's faeces.
- Humans infected with *Ophidascaris robertsi* larvae would be considered accidental hosts.
- Roundworms are incredibly resilient and able to thrive in a wide range of environments.
- In humans, they can cause stomach pain, vomiting, diarrhoea, appetite and weight loss, fever and tiredness.
- This infection does not transmit between people.

Hence option (a) is the correct answer.

3. Answer: (C)

- According to the study published, scientists have discovered white-tailed deer in Ohio, USA, acting as a reservoir for SARS-CoV2 virus where it is mutating fast.
- They are the smallest members of the North American deer family.
- Distribution: They are found in North America from southern Canada through Central America.

Habitat:

- Includes areas along streams and rivers, mixed woodlands, farms, forests, and burned shrub fields.
- Open areas are used only when thick shrubs or forests are nearby.

Appearance:

- It is tan or brown in the summer and grayish brown in winter.

- It has white on its throat, around its eyes and nose, on its stomach, and on the underside of its tail.
- Only male deer grow antlers, which are shed each year.
- They are excellent runners. They can run at speeds of up to 30 miles an hour.
- Conservation status
- IUCN Status: 'Least Concern'

Hence all statements are correct.

4. Answer: (D)

Explanation: The Oceanic Niño Index (ONI) measures the average sea surface temperature deviation from the normal in the east-central equatorial Pacific region. ONI is National Oceanic and Atmospheric Administration (NOAA)'s primary indicator for monitoring the ocean part of the seasonal climate pattern called the El Niño-Southern Oscillation (ENSO). The ONI tracks the running 3-month average sea surface temperatures in the east-central tropical Pacific between 120°-170°W, near the International Dateline. El Niño conditions is said to be present in the ocean when the index is +0.5 or higher. Oceanic La Niña conditions exist when the ONI is -0.5 or lower, indicating the region is 0.5 degrees Celsius or more cooler than average. Recently, the NOAA has predicted a 66% probability of the ONI exceeding 1.5 degrees Celsius during October-December 2023 and a 75% chance of it remaining above 1 degree in January-March 2024. Hence, both statements are correct.

5. Answer: (C)

Explanation: Prime Minister declared August 23 as National Space Day to commemorate India's achievement of Chandrayaan-3 (Soft landing on moon's southern hemisphere). The place where 'Vikram' lander touchdown on lunar surface is to be referred as "Shiv Shakti Point". The place where Chandrayaan-2 lander crash-landed on Moon's surface in 2019 now named "Tiranga". Meanwhile, Chandra's Surface Thermophysical Experiment (ChaSTE) payload, onboard Vikram Lander, has noticed a variation from 70 degree Celsius to minus 10 degree Celsius temperature on lunar surface. Hence, all statements are correct.

6. Answer: (A)

Explanation: Statements 1 and 3 are correct. The near side of the moon is smoother and has more large volcanic plains whereas on the far side, there are large craters. The far side of the moon is shielded from radio signals coming from Earth, making it an ideal location for radio telescopes and other scientific observations

that require minimal electromagnetic interference. Statement 2 is incorrect. The crust on the near side of the moon is generally thinner compared to the far side.

7. Answer: (B)

Explanation: Statement 1 is incorrect. Siliguri Corridor or Chicken's neck, is a narrow stretch of land located in the West Bengal, that connects India's northeastern states to the rest of India. It is located between Nepal and Bhutan to the north and Bangladesh to the south. Statement 2 is correct. All land trade between the North East and the rest of the country happens through this corridor.

8. Answer: (B)

Explanation: – Statement 1 is incorrect. ISAC aims to recognize and reward cities, projects and innovative ideas that are promoting sustainable development across the 100 smart cities as well as stimulating inclusive, equitable, safe, healthy and collaborative cities leading to a better quality of life for all. Statement 2 is correct. The award for the best Union Territory in ISAC 2022 has gone to Chandigarh.

9. Answer: (C)

Explanation: – Statements 1 and 3 are correct. BCIs are designed to enable individuals to interact with and control these external devices using only their brain activity, bypassing traditional routes such as muscle movements or physical inputs. BCIs can empower individuals with paralysis or motor disabilities to regain communication and control over their environment. Statement 2 is incorrect. A Brain-Computer Interface (BCI), also known as a Brain-Machine Interface (BMI), is a technology that establishes a direct communication pathway between the human brain and external devices or computers.

10. Answer: (C)

Explanation: Tele-Law 2.0 was recently unveiled by Ministry of Law and Justice. Tele-Law means the use of communications and information technology for the delivery of legal information and advice. This e-interaction between lawyers and people would be through the video-conferencing infrastructure available at the Common Services Centre (CSCs). The concept of Tele-Law is to facilitate delivery of legal advice through a panel of lawyers stationed at the front office of Legal Services Authorities and CSC. Tele-Law 2.0 entails the fusion of Tele-Law Services with Nyaya Bandhu pro bono legal services, a merger to further enhance citizen accessibility to legal aid. It operates under the DISHA Scheme. Hence, all statements are correct.

11. Answer: (B)

Explanation: Parboiled rice, also called converted rice, is partially precooked in its inedible husk before being processed for eating. It happens before rice is milled, that is before the inedible outer husk is removed to yield brown rice but before brown rice is refined to

make white rice. Hence, statement 1 is correct.

Parboiling changes the color of rice to a light yellow or amber, which differs from the pale, white color of regular rice. Parboiling rice improves its texture, increases its shelf life, and provides health benefits. Parboiled rice is higher in fiber and protein than white rice. Hence, statement 2 is correct.

It is less nutritious than brown rice. It takes a little longer to cook. Hence, statement 3 is incorrect.

12. Answer: (C)

- Scientists have created a technology that can convert paralysed people's brain signals into words at a much faster rate than before.
- A brain-computer interface device can decode brain activity into speech faster, more precisely, and with a greater vocabulary than current technology.
- People with neurological illnesses, such as brainstem stroke or amyotrophic lateral sclerosis, may experience speech loss due to muscle paralysis.
- Previous research has proven that it is possible to decipher speech from a person's brain processes, but only in the form of text and with limited speed, accuracy, and vocabulary.
- Researchers developed a BCI that uses an array of small electrodes placed into the brain to gather neural activity from single cells and trains an artificial neural network to decode intended vocalisations.
- A patient with amyotrophic lateral sclerosis was able to converse at an average pace of 62 words per minute, which is 3.4 times faster than without the device.
- This BCI decodes brain impulses and produces three outputs at the same time: text, audible speech, and a speaking avatar. Both statements are correct.

13. Answer: (A)

- India has developed its own crash test rating evaluation system, joining a half-dozen other countries and regions that have these standards in place.
- A crash test is a controlled collision of a vehicle to evaluate its safety parameters. The revised Bharat Car Assessment Programme, or Bharat NCAP, standards will go into effect on October 1.
- The criteria will provide customers with an objective metric to assess the crash safety of car models before purchasing, as well as urge manufacturers to gradually improve model safety ratings.
- The Bharat NCAP testing process is in line with global crash test protocols, and ratings will range from one to five stars. Statement 1 is incorrect.
- The higher the NCAP score (stars) the safer the car. Statement 2 is correct.

The evaluation will include the following topics:

- Adult Occupant Protection (AOP),
- Child Occupant Protection (COP), and
- Fitment of Safety Assist Technologies.

Three tests will be performed for this: a frontal impact test, a side impact test, and a side pole impact test. The model will receive distinct star ratings for AOP and COP based on its success in these tests. Statement 3 is incorrect.

14. Answer: (B)

- The Peafowl, India's national bird, is one of the country's fastest-growing species. Statement 1 is correct.
- According to the State of India's Birds, 2023 assessment, most bird species in the country are declining in numbers.
- White-rumped Vultures, Indian vultures, and Red-headed vultures have had the greatest long-term decreases (98%, 95%, and 91%, respectively). Statement 4 is correct.
- Ducks are also on the decline in India. India is home to eight resident species and 35 migratory species that live in a variety of settings such as inland lakes and tanks, submerged rice fields, rivers, forest pools, and coastal lagoons. Large flocks of ducks may be seen at Chilika, Pulicat, Rann of Kachchh, Maguri, Loktak, Sambhar, and Keoladeo. Statement 3 is not correct.
- The Glossy Ibis and Black-headed Ibis have increased in abundance by more than 130 percent and 80 percent, respectively, over the last three decades. Statement 2 is incorrect.

15. Answer: (C)

Explanation: The International Lunar Research Station, which would be established on the lunar surface or in lunar orbit, would conduct scientific research operations such as lunar exploration and utilisation, lunar-based observation, basic scientific experimentation, and technical verification. Russia participates in the International Space Station, a livable artificial satellite and the single largest man-made structure in low earth orbit. Russia and China will follow the principles of dialogue, cooperative construction, and mutual gain. Extensive collaboration inside the ILRS will be encouraged, and this opportunity will be available to all interested countries and international partners. Hence, all statements are correct.

16. Answer: (B)

- Brazil, India, and the United States are the top biofuel producers. They will collaborate with other interested countries to establish a Global Biofuels Alliance. Statement 1 is incorrect.
- This Alliance will encourage collaboration and the greater use of sustainable biofuels, particularly in transportation. Statement 2 is correct.

- It will concentrate on market expansion, global biofuel commerce, important policy lessons, and technical assistance to national biofuel programmes around the world.
- The Alliance will work with and supplement existing regional and international organizations, as well as initiatives in the fields of bioenergy, bio-economy, and energy transition in general, such as the Clean Energy Ministerial Bio-future Platform, Mission Innovation Bioenergy initiatives, and the Global Bioenergy Partnership (GBEP).
- The Global Biofuel Alliance is one of India's top priorities during its G20 presidency. Statement 3 is correct.

17. Answer: (C)

- Researchers recently revealed concerning information about the potential impact of clethodim on male reproductive health.
- It is an oxime O-ether formed by the formal conversion of the oxime's acyclic keto group with the chlorophyll group.
- It is a herbicide that is used to manage annual and perennial grasses.
- It has a low volatility and is extremely soluble in water.
- It is not particularly persistent in soil or aquatic systems.
- It is harmful to birds, fish, aquatic plants, honeybees, and earthworms, but not to aquatic invertebrates or algae.
- It is somewhat poisonous to mammals, and while it is a skin irritant, there is little evidence that it causes more serious health problems.
- Effects on human health
- This pesticide affects male reproductive function and early fetal development.
- It also causes a decrease in testicular weight, a drop in germ cell population, reduced serum testosterone levels, sperm abnormalities, and poor pre-implantation embryo development.
- Both statements are correct.

18. Answer: (D)

Explanation: It was hosted by South Africa for the third time since the inception of BRICS. 'BRICS in Africa: Partnership for Mutually Accelerated Growth, Sustainable Development and Inclusive Multilateralism' was the theme of the summit. 15th BRICS Summit was held in Johannesburg from 22-24 August 2023. Hence, both statements are incorrect.

19. Answer: (D)

- Platinum Trust was recently fined by the Competition Commission of India (CCI) for gun jumping.

- It generally refers to cases in which a party or parties to a combination (M&A deal) execute a transaction before CCI authorises the merger, so breaking standstill requirements.
- It ultimately comes down to competition and merger control.
- In competition law, gun-jumping occurs when parties to a merger or acquisition deal complete the transaction without informing the competition authorities.
- Most competition regimes, including India's, need pre-merger notification (the CCI in India).
- The term "gun-jumping" is not defined explicitly under the Competition Act of 2002.
- The law compels parties to a transaction that meets specific monetary levels to notify the CCI of the prospective transaction.
- Parties are then required to follow the standstill requirements, which require them to wait 210 days from the date of notification or until CCI approval, whichever comes first.
- During the standstill period, the parties must continue to run their businesses as separate entities.
- Gun jumping occurs when the parties fail to notify CCI before the closing of the deal or break standstill obligations.
- Penalties:
- Under Section 43A of the Competition Act 2002, the Competition Commission of India (CCI) has the authority to fine parties for gun jumping.
- The penalty can be as much as 1% of the combination's total turnover or 1% of its assets, whichever is greater. Both statements are correct.

20. Answer: (C)

The Indian government recently warned against a new scam called 'Smishing'.

About Smishing:

- "Smishing" is a portmanteau of "SMS" (Short Message Service) and "phishing."
- What is it? A type of phishing attack, smishing, often involves sending fraudulent text messages to individuals with the aim of tricking them into divulging sensitive personal information, such as passwords, credit card numbers, or other confidential data.
- When cybercriminals "phish," they send fraudulent emails that seek to trick the recipient into clicking on a malicious link. Smishing simply uses text messages instead of email.
- Smishing attacks often involve messages that appear to be from legitimate sources, such as banks, government agencies, or well-known companies.
- How it works?
- Smishing messages typically contain urgent or

enticing content to persuade recipients to take immediate action, such as clicking on a malicious link, calling a phone number, or providing sensitive information.

- Once the victim opens and clicks on the link or dials the phone number listed in the message, they're taken to a fraudulent website or a mobile phone line that's designed to resemble a legitimate source.
- The victim might be asked to enter sensitive information, such as login credentials, social security numbers, credit card information or personal identification numbers (PINs).
- Once the victim's sensitive information is divulged, the attacker might steal it to commit fraud for personal gain or to compromise the victim's device by installing malware on it.

Hence both statements are correct.

21. Answer: (C)

- The Central Government is set to introduce the much-anticipated 'Mera Bill Mera Adhikar' scheme soon.
- It is a Goods and Services Tax (GST) invoice incentive initiative that provides monetary rewards in exchange for uploading invoices.
- It will be first implemented in the states of Assam, Gujarat, and Haryana, as well as the union territories of Puducherry, Daman & Diu, and Dadra & Nagar Haveli.
- The goal is to persuade customers to request a bill whenever they make a purchase.
- The programme will apply to all invoices submitted to consumers by GST-registered vendors.
- Monthly and quarterly lotteries will be held, with winners eligible for cash rewards ranging from Rs 10,000 to Rs 1 crore.
- The invoice must have a minimum purchase value of Rs 200 to be eligible for the lucky draw, and individuals can upload a maximum of 25 invoices per month.
- The 'Mera Bill Mera Adhikar' mobile app will be available for both IOS and Android devices.
- The GSTIN of the seller, invoice number, amount paid, and tax amount should all be included in the invoice sent to the app. Both statements are correct.

22. Answer: (B)

- National Judicial Data Grid (NJDG) is a database of orders, judgments and case details of 18,735 District & Subordinate Courts and High Courts created as an online platform under the e-Courts Project.
- Hence, statement 1 is correct.
- Data is updated on a near real-time basis by the connected District and Taluka courts. It provides

data relating to judicial proceedings/decisions of all computerized district and subordinate courts of the country.

- Hence, statement 2 is not correct.
- All High Courts have also joined the National Judicial Data Grid (NJDG) through web services, providing easy access facility to the litigant public.
- Hence, statement 3 is correct.
- Through the e-Courts services platform using elastic search technology, currently litigants can access case status information in respect of over 23.58 crore cases and more than 22.56 crore orders / judgments pertaining to these computerized courts as on date. Case data is available on NJDG for both civil and criminal cases with the ability to perform drill-down analysis based on the age of the case as well as the State and District.

23. Answer: (C)

- Eastern Equine Encephalitis (EEE) is a Mosquito-borne illnesses viral disease that causes inflammation of the brain (encephalitis).
- Hence, statement 1 is not correct.
- It spreads to people and animals by the bite of an infected mosquito.
- Hence, statement 2 is correct.
- EEE was first identified in horses in Massachusetts, United States, in 1831.
- EEE is caused by the Eastern Equine Encephalitis Virus (EEEV), which belongs to the genus Alphavirus and the family Togaviridae.
- Roughly 33% of individuals who are infected do not survive, typically passing away between 2 to 10 days after the symptoms first appear.
- Currently, there are no vaccines available to directly treat Eastern equine encephalitis. To mitigate the risk of infection, individuals are advised to take several precautionary steps, including avoiding mosquito bites by using repellents and wearing protective clothing.

Hence, statement 3 is correct.

24. Answer: (A)

Explanation:

- The North Sea Route (NSR) is the shortest shipping route for freight transportation between Europe and countries of the Asia-Pacific region. Hence, statement 1 is correct.
- This route spans across the Arctic Ocean, encompassing the Barents Sea, Kara Sea, Laptev Sea, and East Siberian Sea. Hence, statement 2 is correct.
- It offers potential distance savings of up to 50% compared to traditional routes through the Suez or Panama Canals. Hence, statement 3 is not correct

25. Answer: (D)

- ISRO chair professor at the National Institute of Advanced Studies (NIAS) in Bengaluru recently announced the commencement of a pilot project integrating geospatial artificial intelligence (GeoAI) and random forest technology to monitor and anticipate the city's air quality.
- It is the use of artificial intelligence (AI) in conjunction with geographical data, research, and technology.
- It is used to gain a better knowledge of real-world business prospects, environmental repercussions, and operational dangers.
- It is accelerating the rate at which we extract meaning from complex datasets, allowing us to address the world's most important issues.

How does it function?

- People can provide real-time input about the conditions in their surroundings using simple smartphone applications, such as traffic congestion, its details, peak hours, their experience with it, and their rating: low, moderate, or dense.
- The data is then collected, processed, and analysed, and its quality and precision improve as a result of thousands of users contributing to the database.

What is random forest technology?

- It is a common machine learning technique that mixes the output of numerous data sets to get a result.
- The Air Quality Index is predicted using historical data collected from numerous air quality monitoring stations in a city and the random forest algorithm. Both statements are correct.

26. Answer: (A)

Explanation: When two hurricanes or cyclones, spinning in the same direction, when brought close together, they begin 'an intense dance around their common centre, this interaction is called the Fujiwhara effect. The interaction could lead to changes in the track and intensity of either or both storms systems. If one hurricane's intensity overpowers the other, then the smaller one will orbit it and eventually crash into its vortex to be absorbed. If two storms of similar strengths pass by each other, they may gravitate towards each other until they reach a common centre and merge, or merely spin each other around for a while before shooting off on their own paths. In rare instances, the two 'dancing' cyclones, if they are intense enough, may merge with one another, leading to the formation of a mega cyclone capable of wreaking havoc along coastlines. The occurrence of the Fujiwhara effect also makes cyclonic systems harder to predict. Hence, only statement 2 is correct.

27. Answer: (C)

Explanation: Black holes are regions of space-time with so much gravity that nothing, not even light, can escape. They are generated when a huge star collapses in on itself at the end of its life, resulting in an extremely dense object with such a powerful gravitational attraction that it warps space-time around it. A stellar black hole is generated by the collapse of a single massive star. Intermediate black holes have masses ranging from 100 to 100,000 times that of the sun. Supermassive black holes are found at the centre of most galaxies, including our own Milky Way galaxy, and have masses ranging from millions to billions of times that of the sun. Hence, both statements are correct.

28. Answer: (A)

The Confederation of All India Traders (CAIT) announced the creation of a National Digital Nagrik Forum. Statement 2 is incorrect.

It is an online forum aimed at advancing the rights of merchants, customers, and other members of society and shaping legislation to strengthen the digital trade economy. Statement 1 is correct.

Through expert discussions and instructional materials, the event aims to improve knowledge about digital legislation and assist individuals in building their capabilities to engage with innovation.

29. Answer: (D)

- Transportation / Prevalence of hot, dry air over a territory (A region of warm, dry air should exist, as should an adequate flow pattern for carrying hot air over the region).
- Absence of moisture in the upper atmosphere (because moisture limits temperature rise).
- The sky should be nearly cloudless to ensure optimal insulation across the region.
- Anti-cyclonic flow with large amplitude throughout the area.

All statements are correct.

30. Answer: (A)

Explanation: – Statements 1 and 2 are incorrect. The Keeling Islands, also known as the Cocos (Keeling) Islands, are a group of 27 coral atolls and islands in the Indian Ocean. It is an external territory of Australia, administered by the Australian government. Statement 3 is correct. The islands are divided into two groups: the North Keeling Islands and the South Keeling Islands

31. Answer: (C)

Explanation: – Statements 1 and 2 are correct. NMBA aims to raise awareness about ill effects of substance abuse among youth, women, and children, with a special focus on educational institutes and communities, fostering community involvement and ownership of the Abhiyaan. Ministry of Social Justice & Empowerment is the nodal ministry for implementing the scheme.

32. Answer: (A)

- The CEO of OpenAI formally reintroduced his Worldcoin project, which the popularity of ChatGPT had overshadowed.
- It is an initiative to build a digital network in which everyone can claim a stake and participate in the digital economy. Statement 1 is correct.
- This company operates on a simple model: enable your eyes to be scanned to establish your human uniqueness in exchange for some crypto and an ID (called a World ID).
- Worldcoin volunteers known as “Orb operators” scan a person’s iris pattern with an “Orb” gadget to acquire biometric data and assist them in obtaining a World ID via the World app.
- Scanned members can use the app to collect Worldcoin [WLD] at regular intervals or to execute transactions with their World ID where possible.
- This technique is known as “proof of personhood,” and it ensures that people do not sign up for crypto several times.
- Worldcoin claims to be constructing the “world’s largest identity and financial public network” that will be accessible to individuals all over the world.
- Worldcoin lists 18 places where Orb operators are scanning people’s eyes, mostly in Delhi, Noida, and Bangalore.

The OpenAI initiative launched it. Statement 2 is incorrect.

33. Answer: (B)

MSSC stands for Mahila Samman Savings Certificate Scheme

- The Mahila Samman Savings Certificate Scheme (MSSC) is a small savings scheme introduced by the Ministry of Finance to commemorate the Azadi ka Amrit Mahotsav, with the intention of attracting female investors.
- Women of any age, including girls, can register an MSSC account with a minimum deposit of Rs. 1000 and a maximum deposit of Rs. 2 lakhs for a two-year term ending in March 2025. Statement 1 is correct.
- So far, 14,83,980 accounts have been opened under the initiative, with a total deposit of Rs 8,630 crore.
- The scheme provides an attractive interest rate of 7.5% p.a., compounded quarterly, as well as the option for partial withdrawal and premature closure of the account at any time after six months of opening, although with a 2% reduction in the interest rate. Statement 2 is correct and statement 3 is incorrect.

34. Answer: (B)

- The federal government announces the statutory minimum price (SMP) based on the cost of cultivation as evaluated by the Commission for

Agricultural Costs and Prices (CACP). This is the minimum price that sugar mills must pay to sugarcane farmers. However, citing differences in production costs, productivity levels, and farmer pressure, some states (Uttar Pradesh, Punjab, Haryana, Tamil Nadu, and Uttarakhand) used to declare state-specific sugarcane prices known as State Advised Prices (SAP), which were usually higher than the SMP. Statements 1 is correct and 2 is incorrect.

- These states also claimed that the SMP was only a minimum price that could be raised to protect farmers' interests. Despite the fact that the name implies that SAPs are advisory pricing, court litigation has proven that mills in these states must pay SAP to farmers in these states.
- Unlike the MSP provided by the Centre for Wheat or Paddy, where the government of India purchases a crop directly from farmers if market prices fall below the MSP, the government never purchases sugarcane directly from farmers. Only sugar mills or khandsari units buy it from farmers at prices that must not go below those set by the government (SMP or SAP). Statement 3 is incorrect.

35. Answer: (B)

Explanation: – Statement 1 is incorrect. A superconductor is a material that exhibits zero electrical resistance and the expulsion of magnetic fields when it is cooled below a certain critical temperature. In other words, it allows electric current to flow through it without any loss of energy due to resistance, and it also repels magnetic fields. An electric current in a superconductor can persist indefinitely. Statements 2 and 3 are correct. Superconductivity can only typically be achieved at very cold temperatures. The temperature of a superconductor known as the critical temperature, is typically below 10 Kelvin (-263 degrees Celsius). Room temperature is 20-22°C. Hence, superconductors at room temperature can cut the cost of electricity grids, computer chips, etc.

36. Answer: (A)

Explanation: – Statements 1 and 3 are incorrect. ULLAS stands for Understanding Lifelong Learning for All in Society. It aims to revolutionize education and literacy across India by fostering a learning ecosystem that reaches every individual, bridging the gaps in basic literacy and critical life skills. The initiative operates through volunteerism. It encourages volunteers to participate as DUTY or Kartavya Bodh towards nation-building. Statement 2 is correct. The initiative also focuses on encouraging functional literacy, vocational expertise, and essential life skills, such as financial literacy, legal literacy, digital literacy, and empowering citizens to participate in nation-building efforts.

37. Answer: (B)

Explanation: – Statement 1 is incorrect. A stapled visa is simply an unstamped piece of paper that is attached by a pin or staples to a page of the passport and can be torn off or detached at will. This is different from a regular visa that is affixed to the passport by the issuing authority and stamped. Statements 2 and 3 are correct. Stapled visas are commonly used for diplomatic or official visas, as well as for visas issued by certain countries with particular travel restrictions or bilateral agreements. The Chinese government began issuing 'stapled visas' to Indian citizens from Arunachal Pradesh in 2009

38. Answer: (D)

Explanation: Akira is a ransomware targeting Windows and Linux devices, encrypting data and demanding double ransom for decryption and recovery. Akira spreads through spear phishing emails, drive-by-downloads and insecure remote desktop connections. Akira deletes Windows Shadow Volume copies, hindering data recovery and backup. Hence, statement 1 is incorrect.

Akira adopts a double extortion scheme to maximize its impact and financial gains. The ransomware first infiltrates the victim's system to steal sensitive information. Following this, it encrypts the victim's data, rendering it inaccessible. Finally, the hackers demand a ransom from the victim to restore access to their data. Hence, statement 2 is correct.

39. Answer: (B)

Explanation: Gross Fixed Capital Formation (GFCF) in the Indian economy has increased significantly. It rose from Rs. 32.78 lakh crore (constant 2011-12 prices) in 2014-15 to Rs. 54.35 lakh crore in 2022-23 (Provisional Estimates). GFCF measures investments in fixed assets by businesses, governments, and households. It includes tangible and intangible assets. Hence, statement 1 and 2 are correct.

GFCF is a key indicator of economic growth and investment activity. GFCF is not a measure of total investment, because only the value of net additions to fixed assets is measured, and all kinds of financial assets are excluded, as well as stocks of inventories and other operating costs. Hence, statement 3 is incorrect.

40. Answer: (B)

The fund will be used to ensure that all children receive a good education. Statement 1 is incorrect.

It will also be utilized to ensure that amenities like secure and sanitary vending machines are on GIF's infrastructure checklist.

The NEP emphasizes on 'Equitable and Inclusive Education,' which echoes the idea that no kid should be denied educational opportunities regardless of their background or socio-cultural characteristics.

It has considered the concerns of the Socio-Economically Disadvantaged Groups (SEDGs), which include women and transgender people. Statement 2 is correct.

The NEP recommends addressing gender as a cross-cutting issue in order to achieve gender equality in education with the collaboration of states and local community organizations. Statement 3 is correct.

41. Answer: (D)

According to the World Gold Council's Regional CEO (India), Somasundaram PR, the current record-high rupee gold prices have severely impacted affordability and consumer sentiments in India.

Gold demand can also be slowed down due to elevated local prices and a slowdown in discretionary spending. If the local price remains low, then gold demand will rise. All three statements are correct.

42. Answer: (D)

XMRig- The open-source CPU mining software XMRig is used to mine the Monero cryptocurrency. Threat actors frequently exploit this open-source software by including it into their malware and using it to conduct illicit mining on victims' devices.

Cherryblos- CherryBlos was discovered earlier this year in April and was disseminated in the form of an APK, working as either an AI tool or a currency miner. It frequently masqueraded as GPTalk, HappyMiner, Robot999, and SnythNet.

AgentTesla- AgentTesla is a sophisticated RAT that can monitor and collect the victim's keyboard input, system keyboard, take screenshots, and exfiltrate credentials to a variety of software installed on the victim's machine (including Google Chrome, Mozilla Firefox, and the Microsoft Outlook email client).

Optical Character Recognition (OCR) is a technology that is commonly used to extract text from images.

ISO 27032 is an internationally known standard that offers companies cybersecurity recommendations. The Standard is intended to assist enterprises in protecting themselves against cyber threats and managing the risks associated with technology use. It takes a risk-management approach and explains how to detect, assess, and manage cyber threats. The Standard also contains information on incident response and recovery. All statements are correct.

43. Answer: (B)

The Prime Minister of India highlighted the business of 'bhojpatra calligraphy' by the ladies of Mana village near Badrinath in the 103rd episode of the 'Mann ki Baat programme.

It is also known as Himalayan Birch and can be found across the Himalayas.

It is a deciduous tree that grows at heights of up to 4,500 meters in the Western Himalayas. Statement 1 is incorrect.

It has a strong potential for freezing resistance, allowing it to create a treeline in the Himalayan region. Statement 2 is correct.

It is a long-lived plant that can live for up to 400 years, and it is the only angiosperm in the Himalayas that controls a large area at sub-alpine heights.

It is widely dispersed in the North-western Himalayas at elevations ranging from 3100 to 3800 meters.

It helps to preserve the Himalayan environment by decreasing soil erosion and providing a bio-shield for the remnant forests and subalpine meadows below the treeline.

For generations, the bark of this tree has been utilized in our country to write extensive scriptures and manuscripts in Sanskrit and other scripts, especially in medieval Uttarakhand and Kashmir. Statement 3 is correct. Statement 3 is correct.

44. Answer: (B)

Explanation: HeLa is an immortal cell line used in scientific research. It is the oldest and most commonly used human cell line. The line is named after and derived from cervical cancer cells taken on February 8, 1951, from Henrietta Lacks, a 31-year-old African-American mother of five, who died of cancer on October 4, 1951. HeLa cells are used by scientists to develop a cancer research method that tests whether a cell line is cancerous or not. This method proves so reliable that scientists use it to this day. HeLa cells can continuously grow and reproduce in lab cultures. Hence, both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I.

45. Answer: (C)

Explanation: Paleo Proxies are indirect evidence or indicators that scientists use to reconstruct past environmental conditions, such as climate, vegetation, or ocean conditions. They can only provide a larger scale or seasonal timescale temperature anomaly estimates of a past era. They cannot estimate daily temperatures or short-term changes, and global estimates based on averaging local proxies have higher uncertainties. Paleo Proxies offer valuable insights into climate responses over longer timescales, like the Holocene epoch. Examples: Tree rings, ice cores, sediment layers, fossilised pollen, coral data etc. Hence, both statements are correct.

46. Answer: (B)

Explanation: PM -YASASVI is Centrally Sponsored Schemes for vulnerable groups comprising of Other Backward Class (OBCs), Economically Backward Class (EBC) and Denotified, Nomadic and Semi-Nomadic Tribes (DNT/S-NT). Hence, statement 1 is incorrect.

Scholarship under the Scheme will be available for studies in India only and will be awarded by the

Government of the State/Union Territory to which the applicant belongs. The scholarship will be provided for students studying in Government Schools only. The students should be studying in class IX and X on a full-time basis in Government Schools only. The students shall be given a consolidated academic allowance of Rs. 4000 per annum. The scheme is implemented by Ministry of Social Justice and Empowerment. Hence, statement 2 and 3 are correct.

47. Answer: (A)

A team of academics at the California Institute of Technology's Center for Data-Driven Discovery created the ZARTH app, which allows anyone with a Smartphone to 'hunt' for transients. Statement 2 is incorrect.

The ZTF Augmented Reality Transient Hunter (ZARTH) is modelled after an augmented reality mobile game. Statement 1 is correct.

It enables the user to conduct serious scientific research while playing a game.

The software makes use of the open-source Sky Map and updates it daily with data from the Zwicky Transient Facility's (ZTF) robotic telescope at Palomar Observatory in California.

48. Answer: (C)

Cell-Free DNA (cfDNA): cfDNA refers to DNA fragments that exist outside of cells, specifically in bodily fluids. In contrast to the bulk of DNA, which is contained within cells. Cell death and other cellular events can result in the release of cfDNA into the extracellular environment. Statement 1 is correct.

These cfDNA fragments include genetic information and can provide information about a person's health, prospective diseases, and genetic variants.

Applications:

NIPT (Non-Invasive Prenatal Testing): Cell-free DNA can be used to screen for chromosomal abnormalities in developing fetuses, such as Down syndrome.

NIPT replaces invasive treatments like amniocentesis, reducing hazards for both pregnant women and foetus.

Early Cancer Detection:

Detecting cancers in their early stages so that therapy can begin as soon as possible. The 'GEMINI' test detects lung cancer with excellent accuracy using cfDNA sequencing. Statement 2 is correct.

Combining cfDNA analysis with existing technologies improves overall cancer detection.

49. Answer: (C)

He was also conferred with the title of "Lokmanya", which means "accepted by the people (as their leader)". Mahatma Gandhi called him "The Maker of Modern India".

At one stage in his political life he was called "the father of Indian unrest" by British author Sir Valentine Chirol.

In 1903, Tilak wrote the book "The Arctic Home in the Vedas". In it, he argued that the Vedas could only have been composed in the Arctics, and the Aryan bards brought them south after the onset of the last ice age.

Tilak also wrote "Shrimad Bhagvad Gita Rahasya" in prison at Mandalay.

He was twice elected to the Bombay Legislative Council. He contemplated election also a third time and Formed the Congress Democratic Party in 1920 for Contesting Elections.

He gave the mantra Swaraj is the birthright of Indians. Option C is correct.

50. Answer: (B)

Explanation: The Spike missile is indeed a fire-and-forget anti-tank guided missile (ATGM). It is designed to be launched from various platforms such as ground vehicles, helicopters, and naval vessels. The missile is capable of engaging and destroying armored targets, including tanks, with high precision and effectiveness. It has advanced guidance systems that allow it to be fired and then autonomously track and hit the target without the need for continuous operator control. Hence, statement 1 is correct.

The Spike missile is not indigenously built in India by the Defence Research and Development Organisation (DRDO). The Spike missile is actually a product of the Israeli defense company Rafael Advanced Defense Systems. It was developed and manufactured in Israel. However, the Indian Army has acquired and integrated the Spike missile system into its arsenal to enhance its anti-tank capabilities. Hence, statement 2 is incorrect.

It can work in non-line-of-sight (NLOS) mode allowing the gunner to operate from a covered position. It is available in man-portable, vehicle-launched, and helicopter-launched variants. It can hit targets from distances of up to 30 kilometres. Hence, statement 3 is correct.

51. Answer: (B)

Explanation: eSanjeevani application is a telemedicine app that provides both doctor-to-doctor and doctor-to-patient telecommunication. The app is being designed, developed, deployed and maintained by The Centre for Development and Advanced Computing (C-DAC). Hence, statement 1 is correct.

52. Answer: (B)

Explanation: – Statement 1 is incorrect. HSN code is an internationally recognized system used to classify and categorize traded goods. It was developed by the World Customs Organization (WCO) to create a unified system for the classification of products in

international trade. Statements 2 and 3 are correct. Each HSN code represents a specific product or commodity. In India, the HSN code is also used for the Goods and Services Tax (GST) system to classify goods for taxation purposes.

53. Answer: (A)

Explanation: – The app serves as a one-stop repository of essential information for National Highway users. Get real-time weather conditions, timely broadcast notifications, and access to details about nearby toll plazas, and other essential services that ensure a seamless and safe journey on National Highways. The app comes equipped with an inbuilt complaint redressal and escalation mechanism.

54. Answer: (B)

Atal Vayo Abhyuday Yojana (AVYAY) was launched by the Ministry of Social Justice and Empowerment. Statement 1 is incorrect.

Atal Vayo Abhyuday Yojana (AVYAY) is a comprehensive initiative aimed at ensuring a dignified life for senior citizens in India. Statement 2 is correct.

This scheme recognizes and appreciates the valuable contributions made by the elderly to society and seeks to ensure their well-being and social inclusion.

It is a Centrally Sponsored Scheme aimed at empowering India's senior citizens. Statement 3 is correct.

55. Answer: C

It is widely distributed across the warm tropical and subtropical waters of the Indian and Pacific Oceans. Statement 1 is incorrect. This species is typically found in the Arabian Sea.

The Bay of Bengal is not a known habitat for this species

This snake, known scientifically as 'Pelamis platurus,' is typically found in the Arabian Sea and is renowned for its highly poisonous venom. Statement 3 is incorrect.

The conservation status of Pelamis platurus is categorized as "Least Concern" by the International Union for Conservation of Nature (IUCN). Statement 2 is incorrect.

Its wide distribution and relatively stable population in its natural habitat contribute to this status.

56. Answer: (A)

A collection of artwork acquired from artists will be abandoned on the moon's surface as a permanent record of human creativity, even in times of war, pandemics, and economic downturns.

Samuel Peralta, a semi-retired scientist and art collector from Canada, is the driving force behind this program.

The diverse collection of digitized art will be delivered to the moon as a permanent record of human inventiveness.

Lunar Codex is saved on memory cards or laser engraved on NanoFiche, a modern take on film-based microfiche.

30,000 artists, writers, filmmakers, and musicians from 157 nations contributed to the collection. Images, periodicals, books, podcasts, movies, and music are among the art mediums split into four capsules.

The first of these capsules, known as the Orion collection, has already orbited the moon after being launched on the Orion spacecraft as part of NASA's Artemis 1 mission last year.

In the coming months, a series of lunar landers will transport the Lunar Codex capsules to various destinations on the moon's South Pole and Sinus Viscositatis lunar plain. Only Statement 1 is correct.

57. Answer: (C)

Explanation: Recently, a revolutionary IoT-based automated soil testing and agronomy advisory platform, Bhu-Vision was officially launched at AICRP (ICAR-IIRR), Hyderabad. It is also known as KRISHI-RASTAA Soil Testing System. It has been jointly developed by ICAR-IIRR (Indian Council of Agricultural Research -Indian Institute of Rice Research) and KrishiTantra. This system seamlessly conducts 12 key soil parameter tests in just 30 minutes. It provides quick and accurate results directly to farmers and stakeholders through a soil health card on their mobile devices. Hence, all statements are correct.

58. Answer: (B)

Explanation: The National Optical Fibre Network (NOFN), launched in October 2011, was renamed the Bharat Net Project in 2015. It is an ambitious project of the Government of India to provide broadband connectivity to all village panchayats in the country. Hence, statement 1 is correct.

It aims to provide affordable broadband connectivity of 2 Mbps to 20 Mbps for all households and on-demand capacity to all institutions to realize the vision of Digital India, in partnership with States and the private sector. Hence, statement 2 is incorrect.

The entire project is being funded by the Universal service Obligation Fund (USOF), which was set up to improve telecom services in rural and remote areas of the country. The project is being executed by a Special Purpose Vehicle (SPV), namely Bharat Broadband Network Limited (BBNL), which was incorporated on 25.02.2012 under Indian Companies Act 1956. Hence, statement 3 is correct.

59. Answer: (A)

Trachoma is a bacterial infection caused by Chlamydia trachomatis. Trachoma is the world's leading infectious cause of blindness and is one of the conditions known as neglected tropical diseases. Statements 1 and 2 both are incorrect.

To eliminate trachoma as a public health problem, the WHO recommends the SAFE strategy, a comprehensive approach to reducing transmission of the causative organism, clearing existing infections and dealing with their effects.

The SAFE strategy includes:

Surgery to treat the blinding stage (trachomatous trichiasis);

Antibiotics to clear the infection, particularly the antibiotic azithromycin;

Facial cleanliness and Environmental improvement, particularly improving access to water and sanitation.

60. Answer: (B)

The Lok Sabha recently discussed the Anusandhan National Research Foundation Bill, 2023.

It aims to establish the Anusandhan National Research Foundation (NRF). Statement 1 is correct.

It will serve as the apex organisation in charge of providing high-level strategic direction for scientific research in the country in accordance with the guidelines of the National Education Policy (NEP). Statement 2 is correct.

It aims to establish a Rs 50,000-crore fund, with sizable private-sector participation, to “seed, grow, and promote” research and development (R&D) and build a culture of research and innovation across India’s universities, colleges, research institutes, and R&D laboratories.

It will be governed by a governing board of 15 to 25 distinguished researchers and professionals, led by the Prime Minister, who will serve as the ex-officio president. Statement 3 is incorrect.

61. Answer: (A)

Explanation: – Statement 1 is correct. National Strategy and Roadmap for Medical and Wellness Tourism aims to provide an institutional framework, strengthening the ecosystem for medical and wellness tourism, developing a brand and ensuring quality assurance. Statement 2 is incorrect. Its key pillars are: Develop a brand for India as a wellness destination, Strengthen the ecosystem for medical and wellness tourism, enable digitalization by setting up Online Medical Value Travel (MVT) Portal, Enhancement of accessibility for Medical Value Travel, Promoting Wellness Tourism and Governance and Institutional Framework.

62. Answer: (B)

Explanation: – Statement 1 is incorrect. Swathi Mk2 Radar is an indigenously developed Weapon Locating Radar (WLR). Statement 2 is correct. It has been developed by Bharat Electronics Limited (BEL).

63. Answer: (D)

Explanation: – Statements 1 and 2 are incorrect. Neerakshi is an autonomous underwater vehicle (AUV) designed to detect mines. It is a collaboration of Garden Reach Shipbuilders and Engineers (GRSE) Ltd and Aerospace Engineering Private Ltd (AEPL). It is the first of its kind in India and will be tested by the Navy, Coast Guard, and Army before being available commercially.

64. Answer: (A)

Explanation: – Statements 1 and 2 are correct. Samudrayaan Mission is a part of the Deep Ocean Mission. It is India’s first manned ocean mission. Statement 3 is incorrect. It is designed to study deep-sea resources and conduct biodiversity assessments.

65. Answer: (B)

It is a condition in which blood arteries in the extremities narrow, limiting blood flow. Statement 1 is incorrect.

The “attacks” or episodes mainly involve the fingers and toes.

Attacks in other locations, such as the ears or nose, are infrequent.

An attack is frequently triggered by exposure to cold or emotional stress. Statement 3 is correct.

The arterioles and capillaries in your fingers and toes tighten more than they should during a Raynaud’s attack. It’s a vasospastic disorder, which implies that small blood vessels near the skin’s surface spasm, limiting blood flow.

People with Raynaud’s syndrome frequently experience discomfort in their fingers and toes, as well as changes in skin color, due to a lack of blood flow during attacks when they are cold or emotionally upset. Statement 2 is correct.

66. Answer: (B)

Conjunctivitis, sometimes known as “pink eye,” is “the swelling or inflammation of the conjunctiva, the thin, transparent layer of tissue that lines the inner surface of the eyelid and covers the white part of the eye,” according to the American Optometric Association (AOA). Statement 1 is correct.

Staphylococcal or streptococcal germs from your skin or respiratory system are the most common causes of bacterial conjunctivitis. Statement 2 is incorrect.

Contagious viruses associated with the common cold are the most common cause. It can occur due to exposure to the coughing or sneezing of someone with an upper respiratory tract infection. Statement 3 is incorrect.

67. Answer: (B)

Explanation: The Havana syndrome is a set of medical signs and symptoms reported by US and Canadian embassy staff first in Havana, Cuba dating to late 2016, and subsequently in other countries. The symptoms included nausea, severe headaches, fatigue, dizziness, sleep problems, and hearing loss. Hence, statement 1 and 2 are correct.

No exactly reason for the Havana syndrome is known till now. Hence, statement 3 is incorrect.

68. Answer: (D)

Because of an equilibrated composition of neutrons and protons in their nucleus, most atoms on Earth are stable. However, in some unstable atoms, the mix of protons and neutrons is such that the nucleus cannot hold itself together.

Uranium-235, an extremely rare isotope of the heavy metal uranium, is the most commonly used nuclear fuel, as it is one of the few elements that can undergo induced fission. Statement 1 is not correct.

This is done by subjecting a U-235 nucleus to neutrons. The nucleus immediately absorbs an extra neutron and consequently becomes unstable and immediately breaks apart into two lighter atoms, and a few extra neutrons. This process releases what is known as atomic energy.

On average, the fission of a U-235 atom creates 2 to 3 additional neutrons. When these new neutrons are absorbed by other U-235 atoms, an exponentially escalating chain reaction occurs.

Uranium ore is enhanced to improve its U-235 content. To sustain a chain reaction, most nuclear power facilities require 3-4 percent U-235 enrichment. Fission bombs, on the other hand, require closer to 90% enrichment. Statement 2 is incorrect.

69. Answer: (A)

Slovenia: The ongoing severe floods in Slovenia, are described as the worst natural disaster the country has experienced since gaining independence in 1991. Pair 1 is correct.

Cambodia: The political situation and transition of power in Cambodia. Hun Sen, one of the world's longest-serving leaders, announced his resignation as prime minister after a landslide victory in July's election. His eldest son, Dr. Hun Manet, is set to become the next prime minister.

Ethiopia: The declaration of a state of emergency in the Amhara region of Ethiopia in response to escalating clashes between the military and local Fano militiamen.

Saudi Arabia: The talks on the Ukraine crisis concluded in the Saudi Arabian city of Jeddah. Pair 2 is correct.

70. Answer: (C)

Explanation: Parliament has passed GNCTD (Amendment) Bill 2023. It establishes National Capital Civil Services Authority (NCCSA), which consists of CM, Chief Secretary of Delhi and Principal Home Secretary of Delhi. It empowers Central Government to make rules in connection with the affairs of GNCTD including the functions, terms and other conditions of service of officers and employees. Hence, both statements are correct.

71. Answer: (A)

Explanation: Recently United Nations International Maritime Organization (IMO) adopted 2023 IMO Greenhouse Gas Strategy which was backed by India. 2023 IMO GHG Strategy aims to reduce the total annual GHG emissions from international shipping by at least 20% by 2030, compared to 2008. Shipping industry to reduce the total annual GHG emissions from international shipping by at least 70%, striving for 80%, by 2040, compared to 2008. The strategy pushes use of biofuel and bio-blends in the shipping industry. This Strategy was backed aggressively by India. According to the Intergovernmental Panel on Climate Change 2022 report, maritime shipping is responsible for 3 % of global anthropogenic GHG emissions and these emissions are continuing to grow rapidly. Hence, only statement 2 is correct.

72. Answer: (C)

Explanation: Vaquita porpoise is the world's rarest and the smallest marine mammal. It is also known as the panda of the sea for the distinctive black circles around its eyes. This porpoise was discovered in 1958. It is unique among the porpoises as it is the only species of that family found in warm waters, and the size of the dorsal fin is believed to be an adaptation to that, allowing for extra body heat to dissipate. It is found only in the northern Gulf of California (Sea of Cortez) in Mexico. They are found most commonly seen in shallow waters up to 50 metres deep. It is categorized as Critically Endangered in IUCN Red List. Hence, both statements are correct.

73. Answer: (A)

Explanation: The publication '75 Endemic Birds of India' was recently released by Zoological Survey of India (ZSI). The Zoological Survey of India (ZSI) was established on 1916 to promote survey, exploration and research leading to the advancement in our knowledge of various aspects of exceptionally rich life of the erstwhile 'British Indian Empire'. The survey has its genesis in the establishment of the Zoological Section of the Indian Museum at Calcutta in 1875. Hence, option (a) is correct.

74. Answer: (C)

A meteor is a space rock that enters the atmosphere of Earth.

Because of the friction, the air makes it extremely heated as it falls.

The bright streak we see is caused by the hot air surrounding the rock, not by the rock itself.

A meteor shower occurs when a large number of space pebbles collide with the atmosphere above Earth at the same time.

These meteors reach speeds of tens of thousands of kilometres per hour before disintegrating because of the immense heat generated by friction with the atmosphere.

About Meteor Shower:

- It is one of the most well-known and renowned meteor showers that happens each year.
- It normally occurs in August, precisely between August 11th and 13th, with the peak being around August 12th. Statement 1 is correct.
- These meteors are quick and dazzling, leaving behind them streaks of light and colour as they fly through the sky.
- During the Perseids, expect to see 50 to 100 meteors every hour.
- They usually appear when the weather is nice and the nights are cool enough to observe the stars.
- The Perseids are unique in that they frequently produce fireballs.
- Fireballs are bright flashes of light and colour that linger longer than a shooting star.
- This occurs because fireballs are formed from larger bits of comet material. Statement 2 is correct.

75. Answer: (C)

Shaligrams, which have been venerated by Hindus and Buddhists for almost 2,000 years, is becoming increasingly scarce as a result of climate change.

Shaligrams have been revered by Hinduism, Buddhism, and the shamanic Himalayan religion of Bon for over 2,000 years. Statement 2 is correct.

These are ancient ammonite fossils, a type of extinct sea creature linked to modern squids. Statement 1 is correct.

Mustang originated in a single rural region in northern Nepal, in the Kali Gandaki River Valley.

These stones are thought to be manifestations of the Hindu god Vishnu.

They are thought to have an inherent consciousness of their own because they are not human-made, but rather formed by the landscape.

As a result, Shaligrams are kept in homes and temples, where they are revered as both living gods and active members of society.

76 Answer: (C)

Explanation: – Statements 1 and 2 are correct.

Around 49.3% of students in rural India have access to smartphones. Only 34% of smartphone-accessible students use their devices for study-related downloads.

77. Answer: (C)

Explanation: – Statements 1 and 2 are correct. As per Agreement on Import Licensing Procedures, all WTO members are required to notify their laws, rules and procedures on import licensing as well as changes to these regulations. It sets out specific rules regarding the application and administration of import licenses, including provisions for timely processing, notification, and review.

78. Answer: (A)

Explanation: – Statement 1 is correct. The objective of the Bill is to establish a comprehensive National and State-level database of registered births and deaths, facilitating the efficient and transparent delivery of public services and social benefits by updating other databases. Statement 2 is incorrect. The Bill provides for the birth certificate to be used as a required document for various purposes such as admission to educational institutions, inclusion in voter lists, and government employment.

79. Answer: (D)

Explanation: – Statements 1, 2 and 3 are correct. Argentina, Bolivia, and Chile are known as the Lithium Triangle. Hard rock lithium, typically found in the Eastern hemisphere, requires much more water and electricity to mine and process than the lithium produced from brine. According to the Mines and Minerals (Development and Regulation) Act, only Indian nationals or firms whose members are Indian nationals are eligible for prospecting licences or mining leases

80. Answer: (B)

Explanation: – Statement 1 is incorrect. Maya OS is a new operating system that is based on Ubuntu, a popular Linux distribution that uses free and open-source software. It has been developed by Ministry of Defence in collaboration with DRDO, C-DAC and NIC. Statements 2 and 3 are correct. It has a similar interface and functionality as Windows. Its Chakravayuh feature is an end-point anti-malware and antivirus software that creates a virtual layer between the user and the internet, blocking hackers from accessing sensitive data.

81. Answer: (B)

Explanation: – Statement 1 is incorrect. The Bill allows regulation of activities such as nucleus breeding centres and hatcheries. Statement 2 is correct. The Bill allows some allied activities in protected areas. For instance: activities like nucleus breeding centers will be permitted to operate in no development zones.

82. Answer: (A)

Explanation: – Statements 1 and 2 are correct.

Rashba splitting, also known as the Rashba effect, is a phenomenon where the spin-splitting of electronic energy levels occurs in a material due to the spin-orbit interaction. Spintronics combines concepts from physics, materials science, and electrical engineering. Statement 3 is incorrect. Spintronics, short for “spin transport electronics,” is an emerging field of science and technology that explores the intrinsic spin of electrons as well as their fundamental electronic charge. Unlike traditional electronics that rely solely on the charge of electrons, spintronics utilizes both the charge and the spin of electrons for various applications.

83. Answer: (C)

Explanation: The ‘Belem Declaration’ recognizes the significance of Indigenous knowledge in the realm of biodiversity conservation. Indigenous communities often possess a deep understanding of their local ecosystems, traditional practices, and interactions with nature. This knowledge can offer valuable insights into sustainable resource management and conservation efforts. By acknowledging Indigenous knowledge, the declaration highlights the importance of integrating traditional wisdom with modern conservation strategies. Hence, statement 1 is correct.

The ‘Belem Declaration’ underscores the need to involve Indigenous Peoples in the processes of making decisions and forming policies that affect their lives and territories. Including Indigenous perspectives and voices in decision-making ensures that policies and actions are more well-rounded and sensitive to the unique needs, rights, and concerns of these communities. This approach also supports the principle of self-determination, allowing Indigenous Peoples to actively participate in shaping their own futures. Hence, statement 2 is correct.

The ‘Belem Declaration’ promotes the responsible and sustainable utilization of biodiversity resources within the Amazon region. This means that while utilizing these resources for various purposes such as economic development or cultural practices, there is a commitment to do so in a way that does not harm the environment, deplete resources, or disrupt the delicate balance of ecosystems. Sustainable use aims to ensure that future generations can also benefit from these resources. Hence, statement 3 is correct.

84. Answer: (D)

Explanation: SMRs are designed to be smaller than traditional nuclear reactors, and they are often used for applications with smaller power generation needs, such as remote areas or grid support. Hence, statement 1 is incorrect.

SMRs are suitable for a range of applications, including remote areas with limited grid access, but they can also be integrated into existing power grids to provide additional capacity or support. Hence, statement 2 is incorrect.

One of the advantages of SMRs is their potential for enhanced safety. They often incorporate inherent safety features and passive cooling mechanisms, which can improve their safety profile. They are designed to be more scalable, and their smaller size allows for easier manufacturing and assembly. This is one of the advantages of SMRs. SMRs typically use the same or similar types of fuel as traditional nuclear reactors, and they are designed to be efficient in terms of energy output.

85. Answer: (D)

Explanation: China’s “sponge city” initiative is a significant urban development strategy introduced by the Chinese government to tackle pressing water management and flooding challenges in urban areas. The initiative takes a nature-based approach to enhance the resilience of cities against flooding and to improve overall water management. Hence, option (d) is correct.

86. Answer: (D)

Statement 1 is correct. The Great Pyramid of Giza, located in Egypt, is indeed the only ancient wonder that still exists today.

Statement 2 is correct. The Hanging Gardens of Babylon’s existence remains a subject of debate among historians and archaeologists, and there is no definitive archaeological evidence for its existence.

Statement 3 is correct. The Pyramids at Chichen Itza in Mexico were included as one of the New7Wonders of the World in a global poll conducted in 2007.

87. Answer: (A)

Statement 1 is correct. When interest rates rise, the cost of borrowing increases. For countries with significant external debt, this means they need to allocate more resources to service their existing debt. As a result, a larger portion of their budget is dedicated to paying off the interest on their debt. This can strain their financial health and limit funds available for other essential expenditures, such as public services and development projects.

Statement 2 is correct. If a country has debt denominated in a foreign currency, such as U.S. dollars, exchange rate fluctuations can significantly impact the cost of that debt in terms of the local currency. If the local currency depreciates against the foreign currency in which the debt is denominated (e.g., the U.S. dollar), the debt burden increases.

88. Answer: (B)

Explanation: – Statements 1 and 3 are correct. Its member countries are Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela. Its secretariat is located in Brasilia, Brazil. Statement 2 is incorrect. ACTO aims to promote sustainable development, environmental protection, and regional

cooperation among its member countries in order to address various challenges facing the Amazon rainforest and its communities.

89. Answer: (B)

Explanation: UNFPA is the United Nations sexual and reproductive health agency. The organization was created in 1969. Its mission is to deliver a world where every pregnancy is wanted, every childbirth is safe and every young person's potential is fulfilled. UNFPA partners with governments, other agencies and civil society to advance its mission. It also focuses on improving the lives of youths and women by advocating for human rights and gender equality and by promoting the understanding of population dynamics. Hence, only statement 1 is incorrect.

90. Answer: (A)

Explanation: It is a species of flying fox native to the Indian subcontinent. It is one of the largest bats in the world. The nectar and fruit-eating flying fox (*Pteropus giganteus*) is generally considered vermin as they raid orchards. It is a keystone species causing seed dispersals of many plants in tropical systems. Hence, statement 1 is correct.

It is listed as least concern on the IUCN Red List. It is highly social creatures, forming large roosts of several hundred animals. These bats are endemic to South Central Asia, found from Pakistan and China to the Maldives Islands. Hence, statement 2 is incorrect.

91. Answer: (B)

Explanation:

The Aditya-L1 mission is India's space endeavor by ISRO to study the Sun using a space-based observatory. Its primary objective is to observe the layers of the Sun, particularly its corona, and analyze solar activity. The spacecraft is placed in a halo orbit around Lagrange point 1 (L1) of the Sun-Earth system. Hence, statement 1 is correct.

L1 is located about 1.5 million km from Earth and provides a stable platform for observing the Sun. The mission carries seven payloads designed for different observations of the Sun's layers. These payloads include instruments for electromagnetic, particle, and magnetic field observations. Among the payloads, four are dedicated to directly studying the Sun and its various phenomena. The remaining three payloads are focused on conducting in-situ studies of particles and fields at the L1 point. Hence, statement 2 is incorrect.

The mission's scientific goals include investigating coronal heating, coronal mass ejections, flare activities, space weather dynamics, and particle-field propagation. It aims to provide insights into various solar phenomena and their impact on space weather. Hence, statement 3 is correct.

Hence, option (b) is the correct answer.

92. Answer: (C)

Explanation: On India's 77th Independence Day, Prime Minister announced the upcoming launch of the 'Vishwakarma Yojana' which is set to be introduced on Vishwakarma Diwas (September 17).

This scheme aims to benefit individuals skilled in traditional craftsmanship, especially from the Other Backward Classes (OBC) community. Skilled artisans like weavers, goldsmiths, blacksmiths, laundry workers, and barbers, among others, will be empowered through this scheme. The scheme will encompass various elements such as financial aid, modern and green technology training, brand promotion, market connectivity, digital payments, and social security.

Hence, both statements are correct.

93. Answer: (A)

Explanation: Recently 'Graphene-Aurora Program' was launched by Ministry of Electronics & Information Technology (MeitY) Secretary Shri Alkesh Kumar Sharma. The program aims to foster innovation of graphene technologies.

This program is implemented by Digital University Kerala with joint funding from MeitY, Government of India and Government of Kerala and Industry partners. India Graphene Engineering and Innovation Centre (I-GEIC) shall be set up under the program. It shall fill the gap between R&D and commercialization by providing a complete facility to startup and industry. Hence, only statement 1 is correct.

94. Answer: (B)

Explanation: A team of engineers and researchers from Korea Advanced Institute of Science and Technology (KAIST) is now working on a humanoid robot called 'Pibot' that can fly aircraft without the need for cockpit modifications. It is the first humanoid pilot in the world. It can fly an aeroplane like a human pilot by operating all of the individual controls in the cockpit designed for humans. It integrates artificial intelligence and robotics technology, and it can process the natural language of the flight manual and operate the aircraft in real time. Hence, option (b) is correct.

95. Answer: (A)

Explanation: The Mizo National Front uprising was a revolt against the government of India aimed at establishing a sovereign nation state for the Mizo people, which started on February 1966. Operation Jericho was launched by Mizo National Front (MNF) to take control of Aizawl during a separatist movement led by Mizo National Front (MNF) in 1966. Mizo National Front (MNF) captured the Aizawl. Operation Jericho was quelled by Indian Air Force after the failure of Assam Rifles and Indian Army. Hence, option (a) is correct.

96. Answer: (D)

Explanation: Kola Peninsula is a peninsula in the extreme northwest of Russia and one of the largest

peninsulas of Europe. Murmansk port is located in northwestern Russia, on the Kola Peninsula, near the Barents Sea and the Arctic Ocean. NSR connects the eastern and western parts of the Arctic Ocean. It is the shortest shipping route connecting the western part of Eurasia and the Asia-Pacific region. Hence, all statements are incorrect.

97. Answer: (D)

Explanation: The App aims to disseminate information related to the flood situation and forecasts up to 7 days on a real-time basis to the public. The App has readable and audio broadcast and all the information is available in 2 languages that is English and Hindi. The App utilizes near real-time river flow data from various sources. The App also provides flood forecast at nearest location where users can check the flood advisory at the station nearest to them on the App. The App is launched by Central Water Commission (CWC). It utilizes advanced technologies such as satellite data analysis, mathematical modelling and real-time monitoring to deliver accurate and timely flood forecasts. Hence, all statements are incorrect.

98. Answer: (C)

Explanation: Agnikul Cosmos, an Indian space-tech startup, to carry out a sub-orbital test flight of its launch vehicle called Agnibaan SOrTeD. It is a single-stage launch vehicle powered by Agnilet engine, which is an entirely 3D-printed, single-piece, semi-cryogenic engine. Agnibaan can carry payloads of up to 100 kg to a low Earth orbit (LEO) of up to 700 km. Unlike traditional sounding rockets that launch from guide rails, Agnibaan SOrTeD will lift off vertically and follow a predetermined trajectory. Hence, both statements are correct.

99. Answer: (A)

Explanation: Debt-for-nature swaps are financial transactions in which a portion of a developing nation's foreign debt is forgiven in exchange for local investments in environmental conservation measures. The world's first and largest debt swap to conserve oceans was signed by Ecuador. Gabon's Debt-for-nature swap is the world's second-largest deal signed under blue bond to refinance the country's debt and conserve marine resource. Hence, statement 2 is incorrect.

100. Answer: (B)

Explanation: According to a new study, measurements and stellar development models of a hot, helium-rich Wolf-Rayet star indicate that when it bursts as a supernova, it will form a magnetar. Magnetars emit massive amounts of energy in the form of flares, X-rays, and gamma-ray bursts, in addition to extremely high magnetic fields. A magnetar's magnetic field may be created by the inside of a neutron star, which is thought to be made up of neutrons, quarks, and exotic states of matter such as Bose-Einstein condensates, forming a superconducting fluid. As a result, when the star rotates, it acts like a massive dynamo, producing a massive magnetic field. A magnetar is a rare form of neutron star distinguished by an extremely high magnetic field. Hence, only statement 3 is incorrect.







