

1. Consider the following statements regarding the TribeX Digital Learning Platform:

- 1 TribeX is a digital learning and knowledge platform launched by the Ministry of Culture to promote India's tribal heritage worldwide.
- 2 The platform offers UGC-recognized one-year hybrid postgraduate diploma programmes in collaboration with Sampurnanand Sanskrit University.
- 3 The platform provides educational content translated into more than twenty foreign languages for researchers and learners across the world.

Which one of the following conclusions based on the above statements is correct?

- (a) All three statements are correct.
- (b) There is no correct statement.
- (c) There are two correct statements, including Statement 3.
- (d) There is only one correct statement.

Answer: (d)

Explanation

Statement 1 is incorrect because **TribeX** has been launched by the **Ministry of Tribal Affairs**, not the Ministry of Culture. Its objective is to preserve, document, and promote India's tribal knowledge and cultural heritage.

Statement 2 is correct because the platform offers **five UGC-recognized one-year hybrid postgraduate diploma programmes** through a collaboration with **Sampurnanand Sanskrit University (SSU), Varanasi** in areas such as tribal museology, Santali language, and sustainable tribal livelihoods.

Statement 3 is incorrect because the platform provides digital repositories, certificate courses, and multimedia learning resources, but it does not offer instructional content translated into more than twenty foreign languages.

2. Consider the following statements regarding the Astra Mk 1 Missile:

- 1 Astra Mk 1 is an indigenously developed all-weather Beyond-Visual-Range Air-to-Air Missile (BVRAAM).
- 2 The missile is capable of intercepting highly manoeuvrable supersonic aerial targets at long ranges.
- 3 It employs a three-stage guidance architecture consisting of inertial navigation, mid-course data link updates, and an active Radio Frequency (RF) seeker during the terminal phase.
- 4 The missile is powered by a dual-pulse solid rocket motor capable of reigniting during the final stage of flight.

Which one of the following conclusions based on the above statements is correct?

- (a) There are four correct statements.
- (b) There is only one correct statement.
- (c) There is no correct statement.
- (d) There are three correct statements, including Statement 1.

Answer: (d)

Explanation

Statement 1 is correct because **Astra Mk 1** is an indigenous all-weather **Beyond-Visual-Range Air-to-Air Missile (BVRAAM)** developed by **DRDO** with production by **Bharat Dynamics Limited (BDL)**.

Statement 2 is correct because it is designed to engage highly agile supersonic aerial targets at beyond-visual ranges.

Statement 3 is correct because it employs a **three-phase guidance system** comprising inertial navigation during the initial phase, mid-course updates through a data link, and an **active Radio Frequency (RF) seeker** for terminal homing.

Statement 4 is incorrect because Astra Mk 1 uses a **single-pulse smokeless solid rocket motor**, whereas the **dual-pulse propulsion system** is a feature of the **Astra Mk 2** missile.

3. Consider the following statements:

- 1 The global distribution of **Parrot Bornavirus 4 (PaBV-4)** extends across several continents.
- 2 PaBV-4 represents a major veterinary concern because of its association with a severe and often fatal disease affecting psittacine birds.

Which of the following information supports the above statements?

- 1 The virus has been reported from North America, Europe, East Asia, and Israel.
- 2 PaBV-4 causes **Proventricular Dilatation Disease (PDD)**, a progressive neurological and gastrointestinal disorder affecting parrots and related birds.
- 3 The virus can only be detected through RT-PCR analysis of brain tissue obtained from dead birds.

Select the correct answer using the code given below.

- (a) 1 and 3 only
- (b) 1, 2 and 3
- (c) 1 and 2 only
- (d) 3 only

Answer: (c)

Explanation

Information 1 supports Statement 1 because documented cases from **North America, Europe, East Asia, and Israel** demonstrate the widespread global occurrence of PaBV-4.

Information 2 supports Statement 2 because PaBV-4 is closely associated with **Proventricular Dilatation Disease (PDD)**, a progressive and frequently fatal disease affecting parrots, macaws, cockatoos, conures, and other psittacine birds.

Information 3 is incorrect because PaBV-4 can also be detected in **live birds** using cloacal and choanal swabs, feathers, faeces, blood samples, and crop biopsies, in addition to post-mortem tissue examination.

4. Consider the following statements regarding the CE20 Cryogenic Engine:

- 1 The CE20 engine powers the solid booster stage of the Launch Vehicle Mark-3 (LVM3).
- 2 It uses liquid hydrogen as fuel and liquid oxygen as the oxidizer.
- 3 The engine incorporates a Nozzle Protection System (NPS) that enables safe testing under sea-level conditions.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 1, 2 and 3
- (c) 1 and 3 only
- (d) 2 and 3 only

Answer: (d)

Explanation

Statement 1 is incorrect because the **CE20 cryogenic engine** powers the **upper cryogenic stage (C25/C32)** of the **LVM3**, not its solid booster stage.

Statement 2 is correct because the engine operates using **liquid hydrogen (LH₂)** as fuel and **liquid oxygen (LOX)** as the oxidizer.

Statement 3 is correct because the **Nozzle Protection System (NPS)** enables safe ground testing of the large cryogenic nozzle under sea-level conditions without requiring expensive vacuum testing facilities.

5. Consider the following statements regarding the ULLAS Initiative:

- 1 The ULLAS initiative broadens adult education by combining foundational literacy with life skills, digital literacy, and financial awareness.
- 2 The programme targets non-literate individuals aged 15 years and above through a volunteer-driven community approach.

3 The learning materials developed under the initiative are available only in languages listed in the Eighth Schedule of the Constitution.

Which one of the following conclusions based on the above statements is correct?

- (a) There are two correct statements, including Statement 2.
- (b) There are two correct statements, namely Statements 1 and 3.
- (c) All three statements are correct.
- (d) There is only one correct statement, namely Statement 2.

Answer: (a)

Explanation

Statement 1 is correct because **ULLAS (Nav Bharat Saaksharta Karyakram)** emphasizes functional literacy together with life skills, digital literacy, and financial literacy.

Statement 2 is correct because it focuses on **non-literate adults aged 15 years and above** and encourages community participation through volunteerism.

Statement 3 is incorrect because ULLAS learning materials are available in **27 languages and local dialects**, extending beyond the **22 languages** listed in the Eighth Schedule.

6. Consider the following geographical features:

- 1 Great Artesian Basin
- 2 Murray–Darling Basin
- 3 Mount Kosciuszko

The above geographical features are associated with which one of the following countries?

- (a) South Africa
- (b) Australia
- (c) Canada
- (d) Argentina

Answer: (b)

Explanation

All three features are characteristic of **Australia**.

The **Great Artesian Basin** is among the world's largest artesian groundwater systems.

The **Murray–Darling Basin** is Australia's principal inland river basin and an important agricultural region.

Mount Kosciuszko, located within the **Great Dividing Range**, is the highest peak on the Australian mainland.

7. With reference to the Gaganyaan Human Spaceflight Programme, which one of the following powers the upper stage of the LVM3 launch vehicle?

- (a) High-thrust Vikas solid boosters
- (b) Human-rated CE20 cryogenic engine
- (c) CE-7.5 staged combustion engine
- (d) Unified hypergolic liquid engine

Answer: (b)

Explanation

The **LVM3** is a three-stage heavy-lift launch vehicle comprising **solid strap-on boosters**, a **liquid core stage**, and a **cryogenic upper stage**.

The upper stage is powered by the **CE20 cryogenic engine**, which uses **liquid hydrogen (LH₂)** and **liquid oxygen (LOX)**. For the **Gaganyaan Mission**, both the engine and launch vehicle have undergone extensive **human-rating** to satisfy stringent safety and reliability requirements for carrying astronauts.

8. With reference to the recently introduced drug Awiqli, which one of the following correctly identifies its principal therapeutic advantage and dosage schedule in adult diabetes management?

- (a) It is a fast-acting oral medicine administered twice daily.
- (b) It is a long-acting basal insulin analogue administered once every week.
- (c) It is an automated intravenous infusion administered once every month.
- (d) It is a seasonal therapeutic vaccine administered once every six months.

Answer: (b)

Explanation

Awiqli (Insulin Icodec) is the world's first **once-weekly basal insulin analogue** approved for adults with **Type 1 and Type 2 Diabetes Mellitus**.

Its prolonged duration of action provides stable blood glucose control for an entire week, reducing the number of insulin injections from **365 to approximately 52 annually**. This significantly improves treatment adherence while reducing the physical and psychological burden associated with daily insulin injections.

9. Match the following physical divisions of Australia with their corresponding geographical characteristics.

Column I (Physical Division)

Column II (Characteristic)

- | | |
|-------------------------|--|
| 1. Western Plateau | P. Extensive mountain chain producing a rain-shadow effect in the interior |
| 2. Central Lowlands | Q. Ancient mineral-rich plateau dominated by deserts |
| 3. Great Dividing Range | R. Low-lying basin containing the Great Artesian Basin |

Select the correct answer using the code given below.

- (a) 1–P, 2–R, 3–Q
(b) 1–Q, 2–P, 3–R
(c) 1–Q, 2–R, 3–P
(d) 1–R, 2–Q, 3–P

Answer: (c)

Explanation

The **Western Plateau** consists of ancient, mineral-rich rocks and extensive desert landscapes, corresponding to **Q**.

The **Central Lowlands** comprise low-lying basins containing important features such as the **Great Artesian Basin**, corresponding to **R**.

The **Great Dividing Range** forms a nearly **3,700-kilometre-long mountain chain** along eastern Australia, producing a pronounced rain-shadow effect across the continent's interior, corresponding to **P**.

10. Consider the following statements regarding the National Statistical Commission (NSC):

1 The National Statistical Commission (NSC) functions as an autonomous advisory body established to promote the independence and credibility of India's official statistical system.

2 The Chief Statistician of India serves as the ex-officio Chairperson of the National Statistical Commission.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement 1 and Statement 2 are correct and Statement 2 is the correct explanation for Statement 1.
(b) Both Statement 1 and Statement 2 are correct and Statement 2 is not the correct explanation for Statement 1.

- (c) Statement 1 is correct but Statement 2 is incorrect.
- (d) Statement 1 is incorrect but Statement 2 is correct.

Answer: (c)

Explanation

Statement 1 is correct. The National Statistical Commission (NSC) was constituted as an autonomous advisory body to strengthen the quality, credibility, and independence of India's official statistical system. It provides policy guidance and recommends measures for improving statistical standards.

Statement 2 is incorrect. The Chairperson of the NSC is a part-time appointee. The Chief Statistician of India (CSI), who heads the National Statistical Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI), functions as the Secretary to the Commission and not as its Chairperson.

11. Consider the following statements:

1 A Super El Niño is generally identified when sea surface temperature anomalies in the Niño 3.4 region exceed about +2°C, whereas a normal El Niño is characterized by comparatively lower positive anomalies.

2 Super El Niño events are triggered by the strengthening of the easterly trade winds across the equatorial Pacific Ocean.

Which of the following information supports the above statements?

1 Rising background ocean temperatures associated with long-term climate change can make extreme El Niño events more likely.

2 Weakening or reversal of the equatorial trade winds allows warm surface waters to shift eastward across the Pacific Ocean.

3 Super El Niño uniformly increases tropical cyclone activity across all ocean basins.

Select the correct answer using the code given below.

- (a) 1 and 3 only
- (b) 1, 2 and 3
- (c) 1 and 2 only
- (d) 3 only

Answer: (c)

Explanation

Statement 1 is correct. A Super El Niño is commonly associated with sea surface temperature anomalies exceeding about +2°C in the Niño 3.4 region. Information 1 supports this by explaining how rising background ocean temperatures can make such extreme events more likely.

Statement 2 is incorrect. Super El Niño develops when the easterly trade winds weaken or reverse, allowing warm waters to migrate eastward across the Pacific Ocean. Information 2 correctly describes this mechanism.

Information 3 is incorrect because Super El Niño does not produce a uniform increase in tropical cyclone activity worldwide. Its impacts differ across ocean basins depending on changes in atmospheric circulation.

12. Consider the following statements regarding the Reciprocal Exchange of Logistics Agreement (RELOS):

1 RELOS is a bilateral logistics support agreement between India and Russia.

2 The agreement establishes a military alliance requiring joint combat operations against third countries.

Which of the above statements are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (a)

Explanation

Statement 1 is correct. RELOS is a bilateral logistics support agreement signed between India and Russia to facilitate military logistics cooperation, including refuelling, maintenance, and supplies.

Statement 2 is incorrect. RELOS is not a military alliance. It is an administrative logistics arrangement that simplifies operational support during deployments and does not mandate joint military operations against any country.

13. Consider the following statements regarding the Ganga–Padma river system:

1 After entering Bangladesh from India, the Ganga is known as the Padma.

2 The Padma ultimately drains into the Arabian Sea.

Which of the above statements are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (a)

Explanation

Statement 1 is correct. After crossing into Bangladesh, the Ganga assumes the name Padma before later joining the Jamuna and Meghna river systems.

Statement 2 is incorrect. The Padma ultimately drains into the Bay of Bengal, not the Arabian Sea.

14. Consider the following statements regarding Border Gateway Protocol (BGP) Hijacking:

1 BGP Hijacking occurs when a network falsely advertises IP address prefixes that it does not legitimately control.

2 The design of the internet's routing system completely prevents BGP Hijacking through mandatory cryptographic validation of all routing announcements.

Which of the above statements are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (a)

Explanation

Statement 1 is correct. BGP Hijacking occurs when an Autonomous System announces IP prefixes that it does not own, causing internet traffic to be redirected through incorrect or malicious routes.

Statement 2 is incorrect. Traditional BGP is largely trust-based and does not universally require cryptographic validation. Although mechanisms such as RPKI improve routing security, they are not universally implemented.

15. Consider the following statements regarding the ordinance-making power of the Executive in India:

- 1 An ordinance cannot be used to amend the Constitution.
- 2 The President may promulgate an ordinance when either House of Parliament is not in session.
- 3 An ordinance may operate retrospectively and can amend or repeal an existing Act of Parliament.
- 4 If Parliament does not approve an ordinance after reassembly, it automatically ceases to operate six months after Parliament reconvenes.

Which of the statements given above are correct?

- (a) 1, 2, 3 and 4

- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) 1, 2 and 3 only

Answer: (d)

Explanation

Statement 1 is correct. Constitutional amendments can only be made under Article 368 and cannot be enacted through an ordinance.

Statement 2 is correct. The President may promulgate an ordinance when either House of Parliament is not in session and immediate legislative action is considered necessary.

Statement 3 is correct. An ordinance has the same force as an Act of Parliament and may operate retrospectively, amend existing laws, or repeal earlier legislation.

Statement 4 is incorrect. An ordinance lapses six weeks after Parliament reassembles if it is not approved by both Houses, not six months.

16. Consider the following statements regarding the products of bioenergy conversion systems:

- 1 Liquid digestate produced during anaerobic digestion is a nutrient-rich organic fertilizer.
- 2 Biochar generated during gasification is a hazardous waste that must be disposed of safely.
- 3 Scrubbing raw biogas reduces its methane concentration to below 50 percent, making it suitable for commercial use.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 only
- (c) 1 only
- (d) 2 and 3 only

Answer: (c)

Explanation

Statement 1 is correct. Anaerobic digestion produces biogas along with nutrient-rich digestate, which is widely used as an organic fertilizer.

Statement 2 is incorrect. Biochar is a valuable carbon-rich product that improves soil fertility, enhances water retention, and contributes to long-term carbon sequestration.

Statement 3 is incorrect. Scrubbing removes impurities such as carbon dioxide and hydrogen sulfide, thereby increasing methane concentration to around 90 percent or more to produce Compressed Biogas (CBG).

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