

Solutions

DATE : 4th Nov- 10th Nov

1. **Answer:** c)

Explanation: Python with PIM can reduce data transfer bottlenecks, especially in computational tasks, and provides energy savings for high-performance applications. Statement 1 is incorrect as the technology is not limited to graphical applications but supports various computational fields.

2. **Answer:** d)

Explanation: OROP benefits are not applicable to personnel discharged voluntarily (Statement 1 is incorrect). Statements 2 and 3 are correct, as arrears are generally paid in installments, with a single installment for family pensioners and Gallantry awardees.

3. **Answer:** b)

Explanation: Statement 1 is incorrect as Urad is cultivated in both Kharif and Rabi seasons in India. Statements 2 and 3 are correct because India imports Urad due to complementary cropping seasons in countries like Brazil, and Urad cultivation has expanded to tropical regions beyond South Asia.

4. **Answer:** c)

Explanation: The Environment Pollution (Prevention and Control) Authority (EPCA) was replaced by the Commission for Air Quality Management (CAQM) in 2021 to oversee air quality improvements in NCR and surrounding states.

5. **Answer:** d)

Explanation: Dholera is being developed as India's first Greenfield Smart City. It is part of a unique initiative focusing on sustainable and high-tech urban planning.

6. **Answer:** b)

Explanation: Statement 1 is incorrect because the India Semiconductor Mission (ISM) was launched under the Ministry of Electronics and IT (MeitY), not the Ministry of Commerce. Statements 2 and 3 are correct, as ISM supports the establishment of fabs and the creation of indigenous IP in the semiconductor sector.

7. **Answer:** a)

Explanation: Shanan Hydropower Project is India's first 100 MW-capacity hydropower project,

established on the Uhl River, a tributary of the Beas (Statement 2 is incorrect).

8. **Answer:** a)

Explanation: Airships operate on the lighter-than-air principle, where gases like helium or hydrogen (less dense than air) provide lift, unlike thrust-based propulsion or magnetic levitation.

9. **Answer:** a)

Explanation: Statement 1 is incorrect as Namibia's northeastern neighbor is Zambia, not Zimbabwe. Statement 2 is correct, as the Kunene and Okavango rivers are major rivers along Namibia's borders. Statement 3 is incorrect because the Atlantic Ocean lies to the west, not east.

10. **Answer:** c)

Explanation: Statements 1 and 3 are correct, as CAQM can issue binding directions to improve air quality and restrict harmful activities. Statement 2 is incorrect as CAQM's jurisdiction is limited to Delhi-NCR and surrounding states, not all of India.

11. **Answer:** a)

Explanation: The Andaman and Nicobar Islands have been designated as a Tuna Cluster primarily due to their strategic location close to Southeast Asia, which supports tuna trade and allows access to rich, under-utilized tuna resources within India's Exclusive Economic Zone (EEZ). Options (b) and (c) are incorrect because the EEZ in this region is under-utilized, not over-exploited, and it does not have the largest tuna catch globally. Option (d) is unrelated to the focus on tuna fisheries development.

12. **Answer:** c)

Explanation: Statement 1 is incorrect as the TTDF primarily targets rural and remote areas rather than urban or suburban regions. Statements 2, 3, and 4 are correct: TTDF is managed by the Department of Telecommunications under the Ministry of Communications and provides grants to Indian entities for telecom innovation and indigenous manufacturing, promoting co-innovation among academia, industry, and startups.

13. **Answer:** c)

Explanation: Only statement 2 is correct. Shading

from solar panels reduces water loss by decreasing evaporation, conserving soil moisture in agrivoltaic systems. Statement 1 is incorrect as panels are typically elevated 2-3 meters, not placed close to the ground. Statement 3 is incorrect because agrivoltaics can be implemented in various climates, not just arid and semi-arid regions.

14. **Answer:** a)

Explanation: Only statement 4 is correct. Gravity Energy Storage stores energy by lifting a heavy mass, converting potential energy back to electricity when lowered. Statement 1 is incorrect as it does not store energy as thermal energy, and statement 2 is incorrect as it does not rely on batteries. Statement 3 is incorrect because the technology requires significant infrastructure, making it unsuitable for dense urban areas.

15. **Answer:** b)

Explanation: The PM Vidyalaxmi Scheme aims to provide financial assistance to meritorious students for quality higher education by offering loan features and interest subventions. The scheme does not focus on job placements, hostel accommodations, or a digital database of students.

16. **Answer:** d)

Explanation: The primary threat to the Markhor is habitat encroachment and illegal hunting for its distinctive spiral horns. While Markhor faces some predation, it is not the main threat to its survival.

17. **Answer:** a)

Explanation: Statements 1 and 3 are correct. Agrivoltaic farming allows revenue from both agriculture and solar energy, and it often benefits from government incentives. Statement 2 is incorrect as agrivoltaic farming balances crop and solar panel placement, maintaining agricultural output.

18. **Answer:** b)

Explanation: Statements 1 and 3 are correct. PMMSY includes both Central Sector and Centrally Sponsored Schemes and has designated Hazaribagh in Jharkhand as a priority area for pearl culture. Statement 2 is incorrect as PMMSY supports various fisheries-related activities beyond ornamental fisheries.

19. **Answer:** b)

Explanation: Statements 2 and 3 are correct. Allulose aids in weight management due to its low-calorie content and is classified as a “novel food” in the EU with limited approval. Statement 1 is incorrect as allulose is only 70% as sweet as

regular sugar, and statement 4 is incorrect because high consumption may lead to gastrointestinal issues.

20. **Answer:** d)

Explanation: All statements are incorrect. MAHASAGAR is a bi-annual virtual platform, not an in-person meeting, and it was started by the Indian Navy in 2023 to focus on maritime security, not economic challenges. The third edition emphasized capacity-building and maritime security, not trade or resource sharing.

21. **Answer:** c)

Explanation: An intermediary, as per the IT Act, is defined as an entity that transmits, stores, or processes information created by third parties without exercising editorial control. This classification differentiates intermediaries from content creators or publishers, who have editorial authority.

22. **Answer:** d)

Explanation: All statements are incorrect. Proba-3 is focused on solar observation, specifically studying the Sun’s corona, not deep space. It is a two-satellite mission employing formation flying to create a coronagraph effect. Proba-3 is also not the first ISRO-EU collaboration, and it is scheduled to launch from Sriharikota, India.

23. **Answer:** a)

Explanation: Kowsar was developed by Iran for civilian purposes such as environmental monitoring and agriculture, not military applications. It was launched from the Vostochny Cosmodrome on a Russian Soyuz rocket as part of Iran’s peaceful space initiatives.

24. **Answer:** a)

Explanation: Only statement 3 is correct. The Chambal and Banas rivers flow through Ranthambore Tiger Reserve, supporting its ecosystem. Statement 1 is incorrect, as RTR is located at the meeting point of the Aravalli and Vindhya ranges. Statement 2 is incorrect, as RTR has tropical dry deciduous and thorn forests dominated by Dhok trees. Statement 4 is incorrect because RTR was a hunting ground for Jaipur’s rulers, not Udaipur’s.

25. **Answer:** b)

Explanation: Statement 2 is correct. The Maha Kumbh Mela involves sacred rituals aimed at spiritual liberation. Statement 1 is incorrect, as it is held every 12 years. Statement 3 is incorrect, as the Kumbh Mela rotates among four locations: Prayagraj, Haridwar, Ujjain, and Nashik. Statement

- 4 is incorrect, as its origins date back to Hindu mythology, not the Vedic period specifically.
26. **Answer:** d)
Explanation: All statements are correct. The PM E-DRIVE scheme is administered by the Ministry of Heavy Industries and includes budget allocations for IEC activities. It provides incentives for e-ambulances, e-trucks, and other EVs, and grants to upgrade EV testing facilities in India.
27. **Answer:** b)
Explanation: Statement 2 is correct. Publishers have editorial control over the content on their platforms and are directly liable for any content violations. Statement 1 is incorrect because publishers remain liable for the content they host regardless of due diligence, unlike intermediaries. Statement 3 is also incorrect, as publishers can be penalized for defamatory or inaccurate content.
28. **Answer:** c)
Explanation: The Supreme Court recently ruled that not all private properties fall under “material resources of the community” as per Article 39(b). This clarification limits the state’s authority to classify private assets as communal resources, reserving such classification for resources that benefit the common good.
29. **Answer:** b)
Explanation: Statements 2 and 3 are correct. The Chola dynasty supported the Kumbh Mela, enhancing its reach. British records, like those by James Prinsep, documented the Kumbh Mela’s socio-religious importance in the 19th century. Statement 1 is incorrect, as its origins precede the Gupta period. Statement 4 is incorrect, as Emperor Akbar allowed Hindu groups to participate, notably the Naga Sadhus in royal processions.
30. **Answer:** a)
Explanation: Only statement 3 is correct. The EDFC alleviates pressure on existing passenger tracks, enhancing punctuality. Statement 1 is incorrect, as the EDFC stretches from Ludhiana (Punjab) to Dankuni (West Bengal). Statement 2 is incorrect, as the corridor primarily transports coal, steel, and agricultural products, not consumer goods or textiles.
31. **Answer:** d)
Explanation: The Sanjay Kumar Committee was tasked with reviewing objections from states regarding the Ecologically Sensitive Area (ESA) demarcations. This included conducting field visits to assess whether certain villages should be excluded from ESA listings, aiming to balance conservation needs with local concerns. Unlike previous committees, its focus was on validation rather than broad demarcation.
32. **Answer:** a)
Explanation: Only Statement 2 is correct. Surfactants, especially from detergents, contribute to foam formation in the Yamuna, particularly in winter when reduced river flow limits natural dilution. Statement 1 is incorrect because winter lowers oxygen levels, worsening foam formation. Statement 3 is incorrect, as industrial effluents add pollutants rather than diluting them.
33. **Answer:** b)
Explanation: Emperor Ashoka’s efforts to spread Buddha Dhamma occurred during his reign from 268-232 BCE, which places it in the 3rd century BCE. His emissaries promoted Buddhism throughout his empire and in regions beyond, such as Sri Lanka and Myanmar, contributing significantly to the expansion of Buddhism in Asia.
34. **Answer:** d)
Explanation: All statements are incorrect. ISA was founded in 2015 and is headquartered in India, not Geneva, making it the first intergovernmental organization based in India. ISA promotes solar energy globally, not exclusively in developing countries, and collaborates with both public and private sectors as well as civil society organizations.
35. **Answer:** c)
Explanation: The Kalka-Shimla Narrow-Gauge Railway features the world’s highest multi-arc gallery bridge, an engineering marvel that helps it navigate rugged terrain. This route is known for its scenic beauty and complex engineering, with multiple tunnels and curves.
36. **Answer:** a)
Explanation: The Visible Emission Line Coronagraph (VELC) on the ADITYA-L1 mission is designed to observe the solar corona and study Coronal Mass Ejections (CMEs). This instrument is crucial for understanding CMEs’ impact on space weather, which can affect satellite operations and communication systems on Earth.
37. **Answer:** a)
Explanation: Only Statement 1 is correct. Lam Dal Lake, a glacial lake, is located in the Dhauladhar range. Statement 2 is incorrect because the range’s highest peak is Hanuman Tibba, not Indrahhar Pass. Statement 3 is incorrect as the Dhauladhar range is primarily composed of granite, not limestone and sandstone.

38. **Answer:** d)

Explanation: All statements are incorrect. The Asian Buddhist Summit 2024 is organized by the Ministry of Culture, not the Ministry of Tourism. The summit's theme is "Role of Buddha Dhamma in Strengthening Asia," not "Buddhism for Global Peace." The summit was initiated by the Government of India and the International Buddhist Confederation, not by the United Nations.

39. **Answer:** c)

Explanation: Lewotobi Laki-Laki is an active stratovolcano on Flores Island in Indonesia and is part of the Lewotobi twin volcano system along with Lewotobi Perempuan. Located in the seismically active Ring of Fire, it frequently erupts, releasing lava and ash, which impacts nearby areas.

40. **Answer:** b)

Explanation: Statements 1 and 3 are correct. The polyoxypropylene-based defoamer solution is US FDA-approved, ensuring safe environmental application. The National Mission for Clean Ganga (NMCG) oversees the process to maintain eco-friendly practices. Statement 2 is incorrect because the defoaming process is temporary, addressing foam only in certain areas without resolving underlying pollution sources.

41. **Answer:** c)

Explanation: The "First in the World Challenge" by ICMR aims to foster pioneering health innovations with the potential for a global impact. It encourages groundbreaking, first-of-its-kind health solutions, such as new vaccines, diagnostics, and treatments, focusing on high-risk, high-reward research beyond incremental advancements.

42. **Answer:** b)

Explanation: Sambhar Lake is the most saline lake in India and is listed as a Ramsar site. Located in Rajasthan, it is known for its unique ecosystem and economic significance in salt production.

43. **Answer:** d)

Explanation: The Tumaini Festival, founded by Congolese poet Menes La Plume, aims to foster cultural exchange and highlight resilience, particularly among refugees. It breaks stereotypes around refugees and celebrates shared experiences through music, art, and crafts, emphasizing human resilience.

44. **Answer:** a)

Explanation: The Inactivated Polio Vaccine (IPV) serves as a booster dose to enhance immunity

against polio when given alongside the DPT vaccine in India's Universal Immunization Programme. It requires multiple doses for effective immunity and complements, rather than replaces, the Oral Polio Vaccine (OPV).

45. **Answer:** c)

Explanation: The Dzaleka Refugee Camp, established in 1994, serves as a center for humanitarian aid, cultural exchange, and empowerment for refugees from various African countries. It supports diverse initiatives aimed at improving lives and fostering community within the camp rather than focusing solely on resettlement or housing specific nationalities.

46. **Answer:** c)

Explanation: EVMs in India are used for elections at various levels, including local body, state legislature, and national elections. They include multilingual options to facilitate accessibility for diverse linguistic groups, and each EVM can record up to 2,000 votes. Statement 2 is incorrect because EVMs are manufactured by two Indian PSUs—Bharat Electronics Limited (BEL) and Electronics Corporation of India Limited (ECIL)—rather than private firms.

47. **Answer:** c)

Explanation: The Annapurna Range, including Mount Annapurna, is located in the Gandaki Province of north-central Nepal, not in Bhutan. Annapurna is known for its low climbing success rate and high fatality risk due to challenging conditions, making statement 2 incorrect.

48. **Answer:** d)

Explanation: The RS-24 Yars missile is distinguished by its MIRV (Multiple Independently Targetable Re-entry Vehicle) capability, allowing it to carry and independently target multiple warheads. This feature increases its strategic impact. It uses solid fuel, offering high mobility and quicker launch readiness compared to liquid-fueled missiles, which makes it easier to deploy and harder for adversaries to track.

49. **Answer:** a)

Explanation: The Namo Drone Didi Scheme is overseen by the Department of Agriculture & Farmers' Welfare under the Ministry of Agriculture, with collaboration from the Ministry of Rural Development. This scheme aims to enhance agricultural productivity using drones while

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empowering rural women's Self-Help Groups (SHGs).

50. **Answer:** c)

Explanation: VVPAT (Voter Verifiable Paper Audit Trail) provides a printed slip with the candidate's name, visible to the voter for a few seconds before

it drops into a sealed compartment for auditing. This mechanism enhances transparency and serves as an audit trail to verify the accuracy of electronic votes. Statement 2 is incorrect because the voter cannot retain the slip; it is preserved by election officials for potential audits.



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