

Prelims Answer Key 2023

**(Explanation and
Solutions)**

UPSC CSE 2023 Questions, Answer Keys & Explanation

1. In which one of the following regions was Dhanyakataka, which flourished as a prominent Buddhist centre under the Mahasanghikas, located?
- (a) Andhra (b) Gandhara
(c) Kalinga (d) Magadha

Ans: (a)

Option (a) is correct:

Amaravati, 45 km from **Vijayawada in Andhra Pradesh** and 330 km from Hyderabad, is closely associated with **Dhanyakataka**, where, according to the scriptures record, **Gautam Buddha first revealed the Kalachakra**. Kalachakra is a Buddhist tantric practice, the empowerment for which has traditionally been given in Tibet to large gatherings of people. People who wish to engage in meditation during the Kalachakra ceremony need to be initiated into the practice by receiving guidance from a qualified teacher and practitioner, who can ‘empower’ the audience.

Reference:

1. <https://m.tribuneindia.com/2006/20060108/spectrum/main2.htm>

2. With reference to ancient India, consider the following statements:
1. The concept of Stupa is Buddhist in origin.
 2. Stupa was generally a repository of relics.
 3. Stupa was a votive and commemorative structure in Buddhist tradition.

How many of the statements given above are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (b)

Option (b) is correct:

Statement 1 is not correct: The practice of preserving the remains of an important personality below accumulated earth was long in existence. Buddhist art adopted this practice and the structure built over such a site was known as **Stupa**. Hence, the **concept of Stupa was not Buddhist in origin**.

Statement 2 is correct: According to **Buddhist sources**, the remains of the **Buddha's body were divided into eight parts and placed under the Stupas**. These during the time of Asoka, were dug out and redistributed which led to the construction of other Stupas - the sacred places of Buddhism. The worship of Stupas led to their ornamentation and a specific type of architecture developed for their construction.

Statement 3 is correct: **Stupa** is a **Buddhist commemorative monument** usually housing sacred relics associated with the Buddha or other saintly persons. The hemispherical form of the stupa appears to have derived from pre-Buddhist burial mounds in India.

References:

1. <https://www.britannica.com/topic/stupa>
2. https://www.lkouniv.ac.in/site/writereaddata/siteContent/202004201518298907anitya_gaurav_aiah_origin_and_development_of_stupa.pdf
3. <https://egyankosh.ac.in/bitstream/123456789/20150/1/Unit-26.pdf>

3. With reference to ancient South India, Korkai, Poompuhar and Muchiri were well known as
- (a) capital cities
 - (b) ports
 - (c) centres of iron-and-steel making
 - (d) shrines of Jain Tirthankaras

Ans: (b)

Option (b) is correct:

- **Korkai:** It was the port city of early Pandyas situated on the banks of **Thamirabarani near Bay of Bengal**. Trade with Ganges Valley as well as ancient Roman civilizations flourished in the port city.
- **Poompuhar:** It is the submerged ancient port city situated in modern-day **Mayiladuthurai district in Tamil Nadu**, might have existed 15,000 years ago and not 2,500 years ago as earlier believed.
- **Muchiri:** Coastal south India functioned as a hub between the Roman Empire in the west and the south-east Asian countries in the East. Many important trading centres developed, the most famous of which was **Muziris**. It has been referred to in the ancient Tamil text, the **Purananuru as a bustling port city under the Chera rulers**.
- Hence, all the three sites mentioned were well known as Ports in ancient South India.

References:

1. <https://timesofindia.indiatimes.com/city/trichy/tamil-nadus-poompuhar-may-be-over-15000-years-old-study/articleshow/97186246.cms>
2. <https://indianexpress.com/article/parenting/learning/make-history-fun-again-muziris-fabulous-ancient-indian-port-5825131/>
3. <https://timesofindia.indiatimes.com/city/madurai/tamil-nadu-mission-launched-to-trace-lost-port-of-korkai/articleshow/93978009.cms>

4. Which one of the following explains the practice of 'Vattakirutal' as mentioned in Sangam poems?
- (a) Kings employing women bodyguards
 - (b) Learned persons assembling in royal courts to discuss religious and philosophical matters
 - (c) Young girls keeping watch over agricultural fields and driving away birds and animals
 - (d) A king defeated in a battle committing ritual suicide by starving himself to death

Ans: (d)

Option (d) is correct:

Vatakkiruttal, also Vadakiruthal and vadakiruttal, was a **Tamil ritual of fasting till death**. It was especially **widespread during the Sangam age**. The **Tamil Kings**, in order to save their honour, and prestige, were prepared to meet their death facing North ('Vatakkiruttal') and never would they turn their back in battle.

5. Consider the following dynasties:

1. Hoysala
2. Gahadavala
3. Kakatiya
4. Yadava

How many of the above dynasties established their kingdoms in the early eighth century AD?

- (a) Only one (b) Only two
(c) Only three (d) None

Ans: (d)

Option (d) is correct:

- **Hoysala Dynasty:** The Hoysala dynasty ruled from about **1006 to about 1346 CE** in the southern Deccan and Kaveri (Cauvery) River valley. The first kings came from the hills northwest of Dwarasamudra (present-day Halebid), which became their capital about 1060.
- **Gahadavala Dynasty:** It is one of the many ruling families of north India on the eve of the Muslim conquests in the **12th–13th century**. The rule of Gahadavala illustrates all the features of early medieval north Indian polity—dynastic hostilities and alliances, feudal state structure, absolute dependence on Brahmanical social ideology, and vulnerability in the face of external aggressions.
- **Kakatiya Dynasty:** The Kakatiya dynasty ruled the region comprising present day Telangana and Andhra Pradesh during the **12th and 14th centuries**. Their capital was **Warangal** in Telangana. The tanks constructed during the Kakatiya rule are used even today. The distinct style of Kakatiya-era architecture is seen in the **Thousand Pillar Temple and Ramappa Temple near Warangal**.
- **Yadava Dynasty:** The Yadava dynasty ruled in the 12th–14th-century and comprised the Hindu kingdom of central India, present day Indian state of Maharashtra. Originally a feudatory of the Eastern Chalukyas of Kalyani, the dynasty became paramount in the Deccan under **Bhillama** (c. 1187–91), who founded **Devagiri (later Daulatabad) as his capital**.
- Hence, **none of the above dynasties** established their kingdom in the early eighth century AD.

References:

1. <https://www.britannica.com/topic/Yadava-dynasty>
2. <https://www.hindustantimes.com/lifestyle/art-culture/telangana-to-host-events-showcasing-rich-history-of-kakatiya-dynasty-101657027563445.html>
3. <https://www.britannica.com/topic/Gahadavala-dynasty>
4. <https://www.britannica.com/topic/Hoysala-dynasty>

6. With reference to ancient Indian History, consider the following pairs:

Literary work Author

1. Devichandragupta : Bilhana
2. Hammira-Mahakavya : Nayachandra Suri
3. Milinda-panha : Nagarjuna
4. Nitivakyamrita : Somadeva Suri

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
 (c) Only three (d) All four

Ans: (b)

Option (b) is correct:

- **Pair 1 is not correct: Vishakhadatta** was a great Sanskrit poet and playwright of Gupta age. Vishakhadatta was the author of *Mudrarakshasa* and *Devichandraguptam*
- **Pair 2 is correct: Nayacandrasuri**, was a Svetambara Jain monk. He lived in the 15th century and is known as the author of a historical large poem, the **Hammiramahakavya**.
- **Pair 3 is not correct: Yavana King Milinda** and **Buddhist monk Nagasena (1365-1325 BCE)**— According to Milindapanho, Yavana king Milinda patronised Buddhism in north-western India. Nagasena was the contemporary of Milinda. Both lived 500 years after Buddha nirvana (1865 BCE).
- **Pair 4 is correct: Nitivakyamṛta** is the name of a text dealing with ethics and ethical values (*nītiśāstra*), attributed to **Somadeva Suri**. The Nītivākyaṃṛta (literally the “nectar of science of polity”) contains thirty-two discourses in simple Sanskrit prose by a Jain scholar, Somadeva Suri.

References:

1. Poonam Dalal Dahiya, Page 165
2. <https://www.wisdomlib.org/definition/hammiramahakavya>
3. <https://www.wisdomlib.org/definition/milinda>
4. <https://www.wisdomlib.org/definition/nitivakyamrita>

7. "Souls are not only the property of animal and plant life, but also of rocks, running water and many other natural objects not looked on as living by other religious sects." The above statement reflects one of the core beliefs of which one of the following religious sects of ancient India?

- (a) Buddhism (b) Jainism
 (c) Shaivism (d) Vaishnavism

Ans: (b)

Option (b) is correct:

Jaina metaphysics is both realistic and pluralistic. It draws a sharp distinction between animate substances (jivas : souls) and inanimate substances (ajivas : non-souls). Jainism is basically dualistic. It is also pluralistic (anekantavada) in that it recognizes the existence of an infinite number of animate and inanimate substances, each possessing an infinite number of characteristics of its own. Since it teaches that the infinite number of

substances exists independently of our perceptions or awareness of them. The universe functions through the interaction of living souls and the five categories of non-living entities: ether (akasa), the means or condition of movement (dharma), the means or condition of rest (adhama), time (kala), and matter (pudgala). Souls are not only the property of animal and plant life, but also of entities such as stones, rocks, running water, and many other natural objects not looked upon as living by other sects.

Reference:

1. <https://egyankosh.ac.in/bitstream/123456789/35228/1/Unit-2.pdf> (IGNOU)

8. Who among the following rulers of Vijayanagara Empire constructed a large dam across Tungabhadra River and a canal-cumaqueduct several kilometres long from the river to the capital city?

- (a) Devaraya I (b) Mallikarjuna
(c) Vira Vijaya (d) Virupaksha

Ans: (a)

Option (a) is correct:

Deva Raya I (c.1406–1422 CE) was a very **capable ruler** noted for his **military exploits** and his support to irrigation works in his kingdom. He **constructed a dam across river Tungabhadra** to bring canals into the city to relieve the shortage of water. He also built a dam on the river Haridra for irrigation purposes.

Reference:

1. Poonam Dalal Dahiya, Page 591

9. Who among the following rulers of medieval Gujarat surrendered Diu to the Portuguese?

- (a) Ahmad Shah (b) Mahmud Begarha
(c) Bahadur Shah (d) Muhammad Shah

Ans: (c)

Option (c) is correct:

Long before the arrival of the British, the **Portuguese** had already mounted a clear and strategic presence in Mumbai. After its takeover of Goa in 1510, the maritime power set about consolidating its presence in north Konkan attempting several incursions on the islands of Bombay and Mahim governed at the time by the **Sultans of Gujarat**.

In 1526, the Portuguese established a factory at Bassein. In 1528-29 they seized the fort of Mahim. With the largest fleet at their command, the Portuguese under Goa's Viceroy Nuno da Cunha had become a nagging maritime presence for **Sultan Bahadur Shah of Gujarat**. **Wary of the growing power of the Mughals, Bahadur Shah chose to strike up an alliance with the Portuguese**. In 1534 he signed off the seven islands of Bombay and the strategic town of Bassein to the Portuguese in a treaty of peace and commerce, bringing to an end Islamic rule on the Islands.

Reference:

1. <https://www.deccanherald.com/content/22328/bombay-british.html>

10. By which one of the following Acts was the Governor General of Bengal designated as the Governor General of India?
- (a) The Regulating Act
 - (b) The Pitt's India Act
 - (c) The Charter Act of 1793
 - (d) The Charter Act of 1833

Ans: (d)

Option (d) is correct:

About the Charter Act of 1833:

- It was the final step **towards centralization** in British India.
- It made the **Governor-General of Bengal as the Governor-General of India** and vested in him all civil and military powers (**Lord William Bentinck was the first Governor-General of India**).
- It **deprived the Governor of Bombay and Madras of their powers**.
- Laws made under the previous acts were called **Regulations**, while laws made under this act were called **Acts**.
- It **ended the activities of the East India Company as a commercial body**, which became a purely administrative body.

Reference:

1. Laxmikanth

11. In essence, what does 'Due Process of Law' mean?
- (a) The principle of natural justice
 - (b) The procedure established by law.
 - (c) Fair application of law
 - (d) Equality before law

Ans: (c)

Option (c) is correct: The Doctrine has its origins from the **English Common Law**. It is first seen in the **Magna Carta-the law of the Land for England**. The due process of law doctrine examines not only whether a law exists to deprive a person of his or her life and personal liberty, but also whether the **legislation is fair, just, and not arbitrary**. Unlike the Procedure established by Law where the judiciary assesses the procedure of the legislation and its competence only, the Supreme Court in case of due process of law analyses the procedure and the rationale of the law. It judges its **reasonability**.

Reference:

1. <https://www.legalserviceindia.com/legal/article-6747-doctrine-of-due-process-of-law.html>

12. Consider the following statements:

Statement-I: In India, prisons are managed by State Governments with their own rules and regulations for the day-to-day administration of prisons.

Statement-II: In India, prisons are governed by the Prisons Act, 1894 which expressly kept the subject of prisons in the control of Provincial Governments.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (a)

Option (a) is correct:

Statement 1 is correct: 'Prisons'/ 'persons detained therein' is a "State-List" subject under Entry 4 of List II of the Seventh Schedule to the Constitution of India. Administration and management of prisons and prisoners is the responsibility of respective State Governments who are competent to take appropriate action in this regard. However, given the significance of prisons in the Criminal Justice System, the Ministry of Home Affairs has been providing regular guidance and support to the States and UTs on diverse issues relating to prison administration.

Statement 2 is correct: "Prison" means any jail or place used permanently or temporarily under the general or special orders of a State Government for the detention of prisoners, and includes all lands and buildings appurtenant thereto is the definition of Prisons under the Prisons Act, 1894.

References:

1. https://www.mha.gov.in/en/divisionofmha/Women_Safety_Division/prison-reforms
2. https://www.mha.gov.in/sites/default/files/2022-08/PrisonsAct-1894_1%5B1%5D.pdf

13. Which one of the following statements best reflects the Chief purpose of the 'Constitution' of a country?

- (a) It determines the objective for the making of necessary laws.
- (b) It enables the creation of political offices and a government.
- (c) It defines and limits the powers of government.
- (d) It secures social justice, social equality and social security.

Ans: (c)

Option (c) is correct:

About the Constitution of India:

- A constitution is a body of basic laws and principles that describes the general organization and operation of the state and contains fundamental principles and norms that underlie and guide all government action.
- A constitution is simultaneously a legal, political, and social instrument. As a supreme or higher law, its provisions provide a framework under which all regulations, legislation, institutions, and procedures operate.
- It articulates the rights of citizens that institutions, procedures or legislation must not infringe, and which the state must strive to ensure.
- Politically, **it establishes, distributes and limits governmental power and provides mechanisms for deliberating and deciding on public policy.**
- Socially, it may reflect a shared identity or civic vision of the state, expressing commonly-held values or foundational principles.

Reference:

1. <https://www.idea.int/sites/default/files/publications/the-fundamentals-of-a-constitution.pdf>

14. In India, which one of the following Constitutional Amendments was widely believed to be enacted to overcome the judicial interpretations of the Fundamental Rights?

- (a) 1st Amendment
- (b) 42nd Amendment
- (c) 44th Amendment
- (d) 86th Amendment

Ans: (a)

Option (a) is correct:

About the Constitution First Amendment Act 1951:

- The Constitution First Amendment Act 1951 was to address certain difficulties that have been brought to light by judicial decisions and pronouncements especially in regard to the chapter on fundamental rights.
- The main objects of the then this Bill (now Constitution First Amendment Act 1951) were:
 - Accordingly to amend **article 19** for the purposes indicated above and to insert provisions fully securing the constitutional validity of zamindari abolition laws in general and certain specified State Acts in particular. (Thus, it was widely believed to be enacted to overcome the judicial interpretations of the Fundamental Rights)
 - The opportunity was taken to propose a few minor amendments to other articles in order to remove difficulties that may arise.

Reference:

1. <https://www.india.gov.in/my-government/constitution-india/amendments/constitution-india-first-amendment-act-1951>

15. Consider the following organizations/bodies in India :
1. The National Commission for Backward Classes
 2. The National Human Rights Commission
 3. The National Law Commission
 4. The National Consumer Disputes Redressal Commission

How many of the above are constitutional bodies?

- (a) Only one (b) Only two
(c) Only three (d) All four

Ans: (a)

Option (a) is correct:

Option 1 is correct: National Commission for Backward Classes (NCBC) was initially constituted by the Central Govt by the National Commission for Backward Classes Act, 1993 which was repealed through the National Commission for Backward Classes (Repeal) Act, 2018. At present, the commission has been accorded **Constitutional** Status and constituted through “**The Constitution (One Hundred and Second Amendment) Act, 2018**” Act whereby **Article 338B** has been inserted, forming a Commission for the socially and educationally backward classes to be known as National Commission for Backward Classes.

Option 2 is not correct: The **National Human Rights Commission (NHRC)** of India was established under the **Protection of Human Rights Act (PHRA), 1993** and amended by the **Protection of Human Rights (Amendment) Act, 2006**. It is in conformity with the Paris Principles, for the promotion and protection of human rights. Section 2(1)(d) of the PHRA defines Human Rights as the rights relating to life, liberty, equality and dignity of the individual guaranteed by the Constitution or embodied in the International Covenants and enforceable by courts in India.

Option 3 is not correct: Law Commission of India is a **non-statutory body** and is constituted by a notification of the Government of India, **Ministry of Law & Justice**, Department of Legal Affairs with a definite terms of reference to carry out research in the field of law and the Commission makes recommendations to the Government (in the form of Reports) as per its terms of reference.

Option 4 is not correct: The **National Consumer Disputes Redressal Commission (NCDRC)**, India is a **quasi-judicial commission** in India which was set up in 1988 under the **Consumer Protection Act of 1986**. **Section 21** of Consumer Protection Act, 1986 posits that the National Commission shall have jurisdiction: to entertain a complaint valued more than two crore and also have Appellate and Revisional jurisdiction from the orders of State Commissions or the District fora as the case may be. **Section 23** of Consumer Protection Act, 1986, provides that any person aggrieved by an order of NCDRC, may prefer an Appeal against such order to the Supreme Court of India within a period of 30 days.

References:

1. http://www.ncbc.nic.in/User_Panel/UserView.aspx?TypeID=1025
2. <https://nhrc.nic.in/about-us/about-the-Organisation>
3. <https://lawcommissionofindia.nic.in/#:~:text=Law%20Commission%20of%20India%20is,Gover nment%20>
4. <http://ncdrc.nic.in/>

16. Consider the following statements:

1. If the election of the President of India is declared void by the Supreme Court of India, all acts done by him/her in the performance of duties of his/her office of President before the date of decision become invalid.
2. Elections for the post of the President of India can be postponed on the ground that some Legislative Assemblies have been dissolved and elections are yet to take place.
3. When a Bill is presented to the President of India, the Constitution prescribes time limits within which he/she has to declare his/her assent.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (d)

Option (d) is correct:

Statement 1 is not correct: If the election of a person as President is declared void by the Supreme Court, acts done by him before the date of such declaration of the Supreme Court are not invalidated and continue to remain in force.

Statement 2 is not correct: Where an assembly is dissolved, the members cease to be qualified to vote in Presidential elections, even if fresh elections to the dissolved assembly are not held before the Presidential elections.

Statement 3 is not correct: When a bill is sent to the President after it has been passed by the Parliament, he can give his assent to the bill, withhold his assent to the bill or return the bill (if it is not a money bill) for reconsideration of the Parliament. **No time limit has been fixed by the Constitution within which the President has to give his/her assent to the bill.**

Reference:

1. Indian Polity by Laxmikanth, Chapter - 17

17. With reference to the Finance Bill and Money Bill in the Indian Parliament, consider the following statements:

1. When the Lok Sabha transmits the Finance Bill to the Rajya Sabha, it can amend or reject the Bill.
2. When the Lok Sabha transmits Money Bill to the Rajya Sabha, it cannot amend or reject the Bill, it can only make recommendations.
3. In the case of disagreement between the Lok Sabha and the Rajya Sabha, there is no joint sitting for Money Bill, but a joint sitting becomes necessary for the Finance Bill.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (b)

Option (b) is correct:

Statement 1 is correct: A financial bill can be either rejected or amended by the Rajya Sabha. In case of a disagreement between the two Houses over such a bill, the President can summon a joint sitting of the two Houses to resolve the deadlock. When the bill is presented to the President, he can either give his assent to the bill or withhold his assent to the bill or return the bill for reconsideration of the Houses.

Statement 2 is correct: A money bill cannot be amended or rejected by the Rajya Sabha. The Rajya Sabha should return the bill with or without recommendations which may be accepted or rejected by the Lok Sabha. It can be detained by the Rajya Sabha for a maximum period of 14 days only.

Statement 3 is not correct: The provision of joint sitting is applicable to ordinary bills or financial bills only and not to money bills or Constitutional Amendment bills. In the case of money bills, the Lok Sabha has overriding powers whereas a Constitutional Amendment bill must be passed by each house separately.

Reference:

1. Indian Polity by Laxmikanth, Chapter - 22

18. Consider the following statements:

Once the Central Government notifies an area as a 'Community Reserve'

1. the Chief Wildlife Warden of the State becomes the governing authority of such forest
2. hunting is not allowed in such area
3. people of such area are allowed to collect non-timber forest produce
4. people of such area are allowed traditional agricultural practices

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) Only three (d) All four

Ans: (b)

Option (b) is correct:

Statement 1 is correct: Community Reserves fall under protected areas, along with marine protected areas, national parks, wildlife sanctuaries and conservation reserves, according to the Wild Life (Protection) Act (WLPA), 1972. These protected area categories were first introduced in the Wild Life (Protection) Amendment Act of 2002 — the amendment to WLPA, 1972. The provisions of the WLPA apply to an area once it has been declared a community reserve. Section 33 of the WLPA passes the authority of the sanctuary to the chief wildlife warden.

Statement 3 is correct: In a Community Reserve, the collection of non-timber forest produce by the local communities is subject to the specific rules and regulations governing the Community Reserve. It may be regulated or restricted to ensure sustainable use and conservation of resources.

Statements 2 and 4 are not correct: After a forest has been made into a community reserve, people cannot hunt there, nor can they use it for agricultural practices, leave alone jhum cultivation”.

Reference:

1. <https://www.downtoearth.org.in/news/forests/community-reserves-are-they-forest-department-s-backdoor-entry-into-north-east-india-85242>

19. With reference to 'Scheduled Areas' in India, consider the following statements:

1. Within a State, the notification of an area as Scheduled Area takes place through an Order of the President.
2. The largest administrative unit forming the Scheduled Area is the District and the lowest is the cluster of villages in the Block.
3. The Chief Ministers of concerned States are required to submit annual reports to the Union Home Ministry on the administration of Scheduled Areas in the States.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (b)

Option (b) is correct:

Statement 1 is correct: The **notification of an area as a Scheduled Area within a State is done through a Presidential Order** and the broad criteria adopted for such notification are: a numerical preponderance of tribal population, possibility of compact administrative unit, and the relative social and economic backwardness of the people/area. The President has the authority to declare certain areas as Scheduled Areas based on the criteria specified in the Constitution.

Statement 2 is correct: The **largest administrative unit forming the scheduled areas has been the district and the lowest the cluster of villages in the block.** Most of the districts form scheduled areas only partially.

Statement 3 is not correct: The executive power of a state extends to the scheduled areas therein. But the **governor** has a special responsibility regarding such areas. He **has to submit a report to the President regarding the administration of these areas, annually or whenever so required by the President.**

References:

1. Indian Polity by Laxminkanth, Chapter-22
2. <https://www.epw.in/journal/2019/44/alternative-standpoint/governors-and-fifth-schedule.html>

20. Consider the following statements:

Statement-I: The Supreme Court of India has held in some judgments that the reservation policies made under Article 16(4) of the Constitution of India would be limited by Article 335 for maintenance of efficiency of administration.

Statement-II: Article 335 of the Constitution of India defines the term 'efficiency of administration'.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement 1 is correct: The Court has held in several judgments — **Indra Sawhney v Union of India 1993** and **M Nagaraj v Union of India 2006** — that the **reservation policies made under Article 16(4) of the Constitution would be limited by Article 335**, which provides for “maintenance of efficiency of administration,” while considering the claims of the Scheduled Castes (SCs) and the Scheduled Tribes (STs) in the making of appointments to public services and posts.

Statement 2 is not correct: The **Constitution does not define the term “efficiency of administration”**. The phrase “efficiency of administration” was used as an exclusionary construct in the colonial and precolonial eras. It was rejected during the framing of the Constitution, and thus the term “efficiency” cannot be used against the idea of reservations to exclude certain communities from public services.

Reference:

1. <https://theprint.in/opinion/article-164-stands-on-its-own-constitution-made-no-room-for-merit-that-courts-invoke/669215/>

21. Consider the following statements:

Statement-I: India, despite having uranium deposits, depends on coal for most of its electricity production.

Statement-II: Uranium, enriched to the extent of at least 60%, is required for the production of electricity.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement 1 is correct: Although India has significant uranium deposits, its reliance on coal for electricity production is higher compared to uranium. In India, power is generated from conventional (Thermal, Nuclear & Hydro) and renewable sources (Wind, Solar, Biomass etc.). However, **Major production of Electricity is achieved through coal, a thermal power plant which is around 75% of the total power generation.**

Statement 2 is not correct: The level of Uranium enrichment required for electricity production is **not fixed at 60%**. The enrichment level varies on the type of reactor and its design.

References:

1. <https://coal.gov.in/en/major-statistics/generation-of-thermal-power-from-raw-coal>
2. <https://www.eia.gov/energyexplained/nuclear/the-nuclear-fuel-cycle.php>

22. Consider the following statements:

Statement-I: Marsupials are not naturally found in India.

Statement-II: Marsupials can thrive only in montane grasslands with no predators.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement 1 is correct: Marsupials, a group of mammals characterised by carrying their young in a pouch, **are not naturally found in India**. They are primarily found in Australia and nearby regions. Kangaroos are non-native or exotic species to India and are never meant to survive here. They can be found in a variety of habitats, including forests, woodlands, and even deserts.

Statement 2 is not correct: Marsupials are not limited to montane grasslands. They are known to inhabit grassland habitats. The marsupials are suited to the dry, arid and hot climate of Australia. Their survival is not limited to areas without predators, as **marsupials have evolved various adaptations to coexist with predators**. Further, they are herd animals and rarely survive in isolation.

Reference:

1. <https://www.timesnownews.com/mirror-now/in-focus/why-the-kangaroos-in-west-bengal-are-a-bad-news-for-the-indian-forests-article-90730511>

23. Invasive Species Specialist Group' (that develops Global Invasive Species Database) belongs to which one of the following organizations?

- (a) The International Union for Conservation of Nature
- (b) The United Nations Environment Programme
- (c) The United Commission for Environment and Nations World Development
- (d) The World Wide Fund for Nature

Ans: (a)

Option (a) is correct:

About Invasive Species Specialist Group (ISSG):

The Invasive Species Specialist Group (ISSG) is a global network of scientific and policy experts on invasive species, organised under the auspices of the Species Survival Commission (SSC) of the **International Union for Conservation of Nature (IUCN)**. Hence, **option (a) is correct**.

Reference:

1. [https://www.eea.europa.eu/data-and-maps/data-providers-and-partners/invasive-species-specialist-group-issg#:~:text=The%20Invasive%20Species%20Specialist%20Group,Conservation%20of%20Nature%20\(IUCN\)](https://www.eea.europa.eu/data-and-maps/data-providers-and-partners/invasive-species-specialist-group-issg#:~:text=The%20Invasive%20Species%20Specialist%20Group,Conservation%20of%20Nature%20(IUCN))

24. Consider the following fauna:

1. Lion-tailed Macaque
2. Malabar Civet
3. Sambar Deer

How many of the above are generally nocturnal or most active after sunset?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (b)

Option (b) is correct:

Option 1 is not correct: Lion tailed Macaque: They usually occupy the tallest, shadowy rainforest canopies far from human sight. While manoeuvring through the canopy, these macaques carefully choose the branches to climb, avoiding perilous ones, and display skills that are sheer acrobatics. A **diurnal species**, the lion-tailed macaque devote their time to searching for fruits and invertebrates, and occasionally socialise with members of their troop by grooming each other to keep their coats free of ecto-parasites and maintain the health of their pelage.

Option 2 is correct: Malabar Civet: The Malabar large-spotted civet, also known as the Malabar civet, is **endemic to the Western Ghats of India**. It is listed as **Critically Endangered** on the IUCN Red List. The Malabar civet is considered **nocturnal** and so elusive that little is known about its biology and ecology apart from habitat use.

Option 3 is correct: Sambar Deer: The sambar is a large deer **native to the Indian subcontinent and Southeast Asia** that has been listed as a **vulnerable** species on the IUCN Red List since 2008. Sambar deer are native in India, Pakistan, Ceylon, Sri Lanka, Burma, the Philippines, southern China, Taiwan, Borneo, Malaysia, Sumatra, and Java. Sambar are **nocturnal** or crepuscular animals and rest during the day under the cover of heavy forest. The **males live alone** for much of the year, and the **females live in small herds** of up to 16 individuals.

References:

1. <https://india.wcs.org/Newsroom/Blog/ID/12547/Icons-of-Anamalai-Lion-Tailed-Macaque>
2. <https://animalia.bio/malabar-large-spotted-civet>
3. https://animalia.bio/sambar?custom_list=571

25. Which of the following organisms perform waggle dance for others of their kin to indicate the direction and the distance to a source of their food?
- (a) Butterflies (b) Dragonflies
 (c) Honey Bees (d) Wasps

Ans: (c)

Option (c) is correct:

The honeybee waggle dance has long been recognized as a behavior that communicates information about resource location from a foraging worker to her nest mates. This complex dance is in part learned by young bees as they observe more experienced bees. Specifically, bees that were not exposed to the dances of their older counterparts displayed more angle and distance errors than those that had a "tutor." Although experience increased angle and direction accuracy, untutored bees were never able to recover accurate distance coding. Thus, as with birds, humans, and other social learning species, honeybees benefit from observing others of their kind that have experience.

Reference:

1. <https://www.science.org/doi/10.1126/science.ade1702>

26. Consider the following statements :
1. Some mushrooms have medicinal properties.
 2. Some mushrooms have psychoactive properties
 3. Some mushrooms have insecticidal properties.
 4. Some mushrooms have bioluminescent properties.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) Only three (d) All four

Ans: (d)

Option (d) is correct:

Statement 1 is correct: Many clinically used drugs such as aspirin, digitoxin, progesterone, cortisone, morphine, vincristine, vinblastine, taxol and several others are derived directly or indirectly from higher plants. Clinically important and well recognized drugs of fungal origin are penicillin, griseofulvin, ergot alkaloids and cyclosporine. **Medicinal Mushrooms occurring in South India namely - Ganoderma lucidum, Phellinus rimosus, Pleurotus florida and Pleurotus pulmonaris** possessed profound antioxidant and antitumor activities. This indicated that these mushrooms would be valuable sources of **antioxidant and antitumor compounds**. Investigations also revealed that they had significant **antimutagenic and anticarcinogenic activities**.

Statement 2 is correct: Psilocybin or Magic Mushrooms are naturally occurring and are consumed for their hallucinogenic effects. They are **psychedelic drugs, which means they can affect all the senses, altering a person's thinking, sense of time and emotions**. Psychedelics can cause a person to hallucinate, seeing or hearing things that do not exist or are distorted.

Statement 3 is correct: In order to find compounds with insecticidal or antifeedant properties from mushrooms and toadstools, a wide screening was undertaken using the non-mycophagous *Drosophila melanogaster* as a model insect. Powdered fruit bodies of edible and poisonous mushrooms were incorporated with the *Drosophila*'s rearing medium, and their development was observed. **Among the 175 different species of fungi tested, 79 were found to inhibit insect development**, hence making the isolation of new compounds look hopeful.

Statement 4 is correct: Bioluminescent fungi typically sprout on decaying wood and are capable of digesting lignin in plant debris. **Most of the bioluminescent fungi belong to a genus called *Mycena* (bonnet mushrooms)**. A recent study that sequenced the genomes of five *Mycena* species, four of which are bioluminescent, showed that bioluminescence evolved in the common ancestor of *Mycena* and another marasmoid clade and originated around 160 million years ago in the late Jurassic period.

References:

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2275760/>
2. <https://adf.org.au/drug-facts/psilocybin/#:~:text=Psilocybin%20or%20magic%20mushrooms%20are,sense%20of%20time%20and%20emotions.>
3. <https://pubmed.ncbi.nlm.nih.gov/8729458/>
4. [https://india.mongabay.com/2020/11/mysterious-new-bioluminescent-mushroom-glow-in-the-forests-of-meghalaya/#:~:text=Bioluminescent%20fungi%20typically%20sprout%20on,called%20Mycena%20\(bonnet%20mushrooms\).](https://india.mongabay.com/2020/11/mysterious-new-bioluminescent-mushroom-glow-in-the-forests-of-meghalaya/#:~:text=Bioluminescent%20fungi%20typically%20sprout%20on,called%20Mycena%20(bonnet%20mushrooms).)

27. Consider the following statements regarding the Indian squirrels :

1. They build nests by making burrows in the ground.
2. They store their food materials like nuts and seeds in the ground.
3. They are omnivorous.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (c)

Option (c) is correct:

Statement 1 is correct: Tree squirrels typically live in wooded areas, since they prefer to live in trees. Flying squirrels make their homes in tree holes or nests that are built into the crooks of branches. **Ground squirrels live up to their names. They dig burrows, a system of tunnels underground, to live in.** Some squirrels also hibernate in burrows during the winter to keep warm.

Statement 2 is correct: To prepare for cold months, **squirrels will bury their food.** In the winter months they have a store of food they can eat when supplies are scarce.

Statement 3 is correct: On average, squirrels eat about one pound of food per week. Many people think that squirrels only eat nuts, but this isn't true. **Squirrels are omnivores, which means they like to eat plants and meat. Squirrels mainly eat fungi, seeds, nuts and fruits, but they will also munch on eggs, small insects, caterpillars, small animals and even young snakes.**

Reference:

1. <https://www.livescience.com/28182-squirrels.html>

28. Consider the following statements:

1. Some microorganisms can grow in environments with temperature above the boiling point of water.
2. Some microorganisms can grow in environments with temperature below the freezing point of water.
3. Some microorganisms can grow in highly acidic environment with a pH below 3.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (c)

Option (c) is correct:

Microorganisms are classified into three primary groups on the basis of their preferred range of temperature:

- **Psychrophiles (cold- loving microbes),**
- **Mesophiles (moderate-temperature-loving microbes),**
- **Thermophiles (heat-loving microbes).**

Statement 1 is correct: Thermophiles are able to survive at temperatures up to 122°C. **Thermophile** and hyperthermophiles induce heat shock proteins (HSPs) are conventional proteins for the response to heat stress and protection against cellular damage.

Statement 2 is correct: In Psychrophiles, the lowest temperature limit for life seems to be around -20°C , which is the value reported for bacteria living in permafrost soil and in sea ice. The antifreeze proteins (AFPs) have the ability to bind to ice crystals through a large complementary surface and thereby create thermal hysteresis and lower the temperature at which an organism can grow.

Statement 3 is correct: pH 6.5-7 (neutral range) is best suited for bacterial growth. **However some bacteria can grow at an acidic pH below about pH 4, are called acidophiles.** While some bacteria prefer an alkaline pH (8-9), are called alkalophiles. Molds and yeasts (fungus) require an optimum pH of about 5 to 6 for growth.

References:

1. <https://lab-training.com/conditions-favourable-growth-microorganisms/>
2. <https://www.sciencedirect.com/topics/biochemistry-genetics-and-molecular-biology/thermophile>
3. [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1456908/#:~:text=Psychrophilic%20microorganisms%20have%20successfully%20colonized,psychrotroph%20\(Morita%2C%201975\).](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1456908/#:~:text=Psychrophilic%20microorganisms%20have%20successfully%20colonized,psychrotroph%20(Morita%2C%201975).)

29. Which one of the following makes a tool with a stick to scrape insects from a hole in a tree or a log of wood?

- (a) Fishing cat (b) Orangutan
 (c) Otter (d) Sloth bear

Ans: (b)

Option (b) is correct:

Orangutans have been known for making and using tools such as sticks for fishing out bugs from bark. Orangutans have been spotted using **sticks to extract seeds from fruit and scrape insects from a hole in a tree in the wild.**

Reference:

1. <https://www.inverse.com/science/ancient-human-stone-tool>

30. Consider the following:

1. Aerosols
2. Foam agents
3. Fire retardants
4. Lubricants

In the making of how many of the above are hydrofluorocarbons used?

- (a) Only one (b) Only two
(c) Only three (d) All four

Ans: (d)

Option (d) is correct:

Hydrofluorocarbons (HFCs) are a climate “Super-Pollutant” - Greenhouse gases with hundreds to thousands of times the heat-trapping power of carbon dioxide (CO). **HFCs are synthetic gases used in air conditioning systems, aerosol propellants, foam blowing agents, solvents, lubricants, and flame retardants.** These gases were first developed as alternatives to ozone-depleting chemicals, but after their rollout it was learned that their release to the atmosphere during manufacturing processes and leakage during use, servicing, and retirement/ replacement of equipment poses a grave threat to our climate.

Reference:

1. https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/GOPIF_HFCs_Factsheet_210312.pdf

31. Consider the following statements:

1. Jhelum River passes through Wular Lake.
2. Krishna River directly feeds Kolleru Lake.
3. Meandering of Gandak River formed Kanwar Lake.

How many of the statements given above are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (b)

Option (b) is correct:

Statement 1 is correct: Wular Lake is the largest lake in the Jammu and Kashmir territory, in the northern part of the Indian subcontinent. It is sited in Bandipora district in Jammu and Kashmir. The lake controls the flow of the Jhelum River.

Statement 2 is not correct: The Kolleru lake serves as a natural flood-balancing reservoir for these two rivers. **The lake is fed directly by water from the seasonal Budameru and Tammileru streams,** and is connected to the Krishna and Godavari systems by over 68 inflowing drains and channels.

Statement 3 is correct: Kanwar jheel, as it is locally called, is located 22 km north-west of Begusarai town. It is a residual oxbow lake, formed due to meandering of Gandak river, a tributary of Ganga, in the geological past. Kanwar lake was declared a notified area under the Wildlife (Protection) Act of 1972. To check poaching of birds, it was declared a protected zone by the Bihar state government in 1986; the government of India declared it a bird sanctuary in 1989.

References:

1. - <https://journalsofindia.com/wular-lake/>
2. http://www.rainwaterharvesting.org/kolleru_lake/kolleru_lake.htm#:~:text=The%20lake%20serves%20as%20a,68%20inflowing%20drains%20and%20channels.
3. <https://www.downtoearth.org.in/news/kanwar-lake-birds-paradise-lost-44693>

32. Consider the following pairs:

Port	Well known as
1. Kamarajar Port	: First major port in India registered as a company
2. Mundra Port	: Largest privately owned port in India
3. Visakhapatnam	: Largest container port in India

How many of the above pairs are correctly matched?

- (a) Only one pair (b) Only two pairs
 (c) All three pairs (d) None of the pairs

Ans: (b)

Option (b) is correct:

Pair 1 is correctly matched: The **Kamarajar Port**, located on the Coromandel Coast about 24 km north of Chennai Port, Chennai, it is the 12th major port of India, and **the first port in India which is a public company**. The port was declared as a major port under the Indian Ports Act, 1908 in March 1999 and incorporated as Ennore Port Limited under the Companies Act, 1956 in October 1999. **The Kamarajar Port is the only corporatized major port and is registered as a company.**

Pair 2 is correctly matched: In 2003, the **Mundra Port** was designated as a Special Economic Zone (SEZ) making it the **largest private SEZ in the country**. The Gujarat Adani Port Ltd was merged into Mundra Special Economic Zone Ltd. and Adani Chemicals Limited in 2006. It is known to be an all-weather port: it is busy across all seasons. **Today, the Mundra Port is spread across around 13500 hectares** with world class amenities and infrastructural upgrades. With activities dealing with crude oil, liquid cargo and bulk handling among many and modernised machinery and connectivity, the Mundra Port is known for its minimal turnaround time and fastest cargo evacuation. Thus, it is the **largest privately owned port of India**.

Pair 3 is not correctly matched: Known as Nhava Sheva, **Jawaharlal Nehru Port Trust (JNPT) is the largest container port in India** and one of the most essential subcontinent harbours on the Western coast. The name comes from the two erstwhile villages that thrived on the shores of Thane Creek, where JNPT now stands.

References:

1. <https://www.ennoreport.gov.in/content/#:~:text=About%20us%20Kamarajar%20Port%20Limite&text=The%20port%20was%20declared%20as,Act%2C%201956%20in%20October%201999.>
2. <https://www.mhsindia.org/mundra-port-history-behind-the-largest-container-port-in-india/>
3. [https://www.marineinsight.com/know-more/10-major-ports-in-india/#:~:text=port%20in%20India%3F-.1.,Trust%20E2%80%93%20Nhava%20Sheva%20\(JNPT\)&text=Known%20as%20Nhava%20Sheva%2C%20JNPT,harbours%20on%20the%20Western%20coast.](https://www.marineinsight.com/know-more/10-major-ports-in-india/#:~:text=port%20in%20India%3F-.1.,Trust%20E2%80%93%20Nhava%20Sheva%20(JNPT)&text=Known%20as%20Nhava%20Sheva%2C%20JNPT,harbours%20on%20the%20Western%20coast.)

33. Consider the following trees:

1. Jackfruit (*Artocarpus heterophyllus*)
2. Mahua (*Madhuca indica*)
3. Teak (*Tectona grandis*)

How many of the above are deciduous trees?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (b)

Option (b) is correct:

Option 1 is not correct: Jackfruit (*Artocarpus heterophyllus*) is a tropical evergreen tree that grows up to 20 m in height.

Option 2 is correct: Mauwa (*Madhuca indica*) is a tree identified by fissured bark, compound leaves with leaflets opposite, and winged nuts. It is a deciduous tree that grows up to 20 m tall.

Option 3 is correct: Teak (*Tectona grandis*) is a large, deciduous tree up to 40 m (131 ft) tall with gray to grayish brown branches.

References:

1. <https://pfaf.org/user/Plant.aspx?LatinName=Artocarpus+heterophyllus>
2. https://www.grow-trees.com/trees.php?tree_id=4&tree_name=mahua--mahwa--madhuka1
3. <http://www.nbrienvi.nic.in/WriteReadData/CMS/Tectona%20grandis.pdf>

34. Consider the following statements:

1. India has more arable area than China.
2. The proportion of irrigated area is more in India as compared to China.
3. The average productivity per hectare in Indian agriculture is higher than that in China.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (a)

Option (a) is correct:

Statement 1 is correct: India has more arable area than China.

As per the 2019 data, top 10 countries with the most arable land in the world are as follows:

Rank	Country	Arable Hectare	Arable Acres
1.	United States	157,736,800	389,767,633
2.	India	156,067,000	385,641,557
3.	Russia	121,649,000	300,594,679
4.	China	119,474,200	295,200,748
5.	Brazil	55,762,000	137,787,902

Statement 2 is not correct: As per the annual report 2020-21 by Department of Agriculture, Cooperation & Farmers' Welfare Ministry of Agriculture & Farmers' Welfare, the net irrigated area is 68.6 million hectares. But in 2020, the size of irrigated areas in China amounted to around 69.16 million hectares. **Hence, the proportion of irrigated area is more in China as compared to India.**

Statement 3 is not correct: China has less area under cultivation, consumes less fertiliser and yet produces more. **Total foodgrain production of China touched 571 million tonnes in 2012 as compared to India's 250 million tonnes in 2011-12.** "The productivity of various crops and legumes in the country is less as compared to that of some countries in Europe, the US and China." - This was stated by Radha Mohan Singh - the then Agriculture Minister - during Question Hour in Lok Sabha in 2016.

References:

1. <https://worldpopulationreview.com/country-rankings/arable-land-by-country>
2. <https://agricoop.nic.in/Documents/annual-report-2020-21.pdf>
3. <https://www.statista.com/statistics/280124/size-of-irrigated-areas-in-china/>
4. <https://www.indiaspend.com/how-china-beats-india-in-agriculture-productivity/>
5. https://economictimes.indiatimes.com/news/economy/agriculture/indias-crop-yields-lower-than-us-europe-and-china/articleshow/55558872.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

35. Which one of the following is the best example of repeated falls in sea level, giving rise to present-day extensive marshland?
- (a) Bhitarkanika Mangroves
 - (b) Marakkanam Salt Pans
 - (c) Naupada Swamp
 - (d) Rann of Kutch

Ans: (d)

Option (d) is correct:

The Great Rann of Kachchh comprises a unique geomorphic entity of the Indian sub-continent. It is a mysterious and fascinating tectonic landscape generated during the last 10,000 years, in an area marked by sea-level changes. **The Ranns of Kachchh are salt marshes** forming a part of the Thar Desert. Earlier archaeological studies have indicated a higher sea level during the Harappan times. Some such settlement sites are also found in the periphery of present day northeastern margin of Little Rann of Kachchh.

Reference:

1. https://www.researchgate.net/publication/285202093_The_Great_Rann_of_Kachchh_Perceptions_of_a_field_geologist

36. Ilmenite and rutile, abundantly available in certain coastal tracts of India, are rich sources of which one of the following?
- (a) Aluminium (b) Copper
(c) Iron (d) Titanium

Ans: (d)

Option (d) is correct:

Ilmenite and rutile are the most commonly found and abundant form of titanium oxide. Ilmenite is weakly magnetic mineral sand, grey-black in colour, solid in form and exists in a triangle crystal structure. On the other hand, rutile is reddish-brown and exists in a tetragonal crystal structure. Ilmenite and rutile, being titanium oxide minerals, are used to produce high-performance metal parts such as artificial human body parts, aircraft engine parts, sporting equipment, synthetic rutile, pigments, etc. These pigments are used for whitening in papers, paints, toothpaste, adhesive, plastic and foods and nanotechnologies.

Reference:

1. <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/ilmenite>

37. About three-fourths of world's cobalt, a metal required for the manufacture of batteries for electric motor vehicles, is produced by
- (a) Argentina
(b) Botswana
(c) The Democratic Republic of the Congo
(d) Kazakhstan

Ans: (c)

Option (c) is correct:

Top Cobalt Producing Countries:

1. **The Democratic Republic of the Congo: The Democratic Republic of Congo (DRC) is by far the world's largest producer of cobalt, accounting for roughly 70 percent of global production.** The country has been the top producer of the metal for some time, and reported output of 130,000 MT in 2022.
 1. **Democratic Republic of Congo**
Mine production: 130,000 MT
 The Democratic Republic of Congo (DRC) is by far the world's largest producer of cobalt, accounting for roughly 70 percent of global production. The country has been the top producer of the metal for some time, and reported output of 130,000 MT in 2022.
 2. **Russia:** After falling in 2021, Russia's cobalt production increased in 2022, rising from 8,000 MT to 8,900 MT.
 3. **Australia:** Australia saw a large increase in cobalt production in 2022, with output rising by 605 MT from 2021's 5,295 MT.
 4. **Canada:** Canada was the fourth largest cobalt producer in the world in 2022, moving up from fifth place in 2021, although its production decreased in that time from 4,361 MT.
 5. **Philippines:** The Philippines is the fifth largest cobalt producer in the world. The country's cobalt production was up slightly in 2022, coming in at 3,800 MT. The Asian country is also a top nickel producer.

Reference:

1. <https://investingnews.com/where-is-cobalt-mined/>

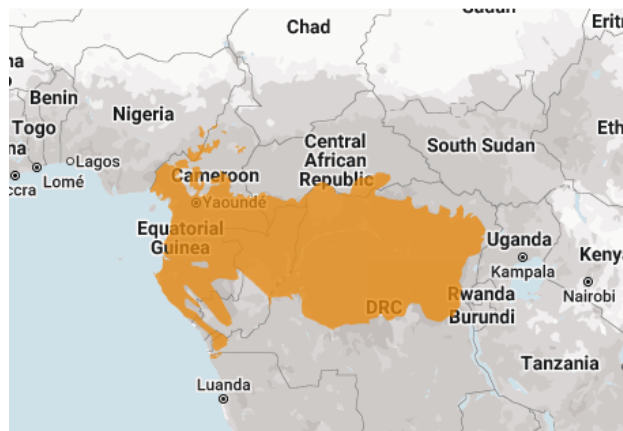
38. Which one of the following is a part of the Congo Basin?
- (a) Cameroon (b) Nigeria
 (c) South Sudan (d) Uganda

Ans: (a)

Option (a) is correct:

About Congo Basin:

- The Congo Basin makes up one of the most important wilderness areas left on Earth. At 500 million acres, it is larger than the state of Alaska and stands as the world's second-largest tropical forest.
- **The Congo Basin spans across six countries: Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Equatorial Guinea and Gabon.**
- The Congo Basin has been inhabited by humans for more than 50,000 years and it provides food, fresh water and shelter to more than 75 million people.



39. Consider the following statements:

1. Amarkantak Hills are at the confluence of Vindhya and Sahyadri Ranges.
2. Biligirirangan Hills constitute the easternmost part of Satpura Range.
3. Seshachalam Hills constitute the southernmost part of Western Ghats.

How many of the statements given above are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (d)

Option (d) is correct:

Statement 1 is not correct: Amarkantak is situated in Anuppur district of the state of Madhya Pradesh at an altitude of 1065m at the meeting place of the Vindhya and Satpura mountain ranges amidst sylvan surroundings. It has an average elevation of 1048m.

Statement 2 is not correct: Biligirirangan Hills is home to ecosystems that are unique to both the mountain ranges. Since it is located at the north-west of the Western Ghats and westernmost edge of the Eastern Ghats, it supports a diverse flora and fauna in view of the various habitats present.

Statement 3 is not correct: The Seshachalam hills are hilly ranges and a part of the Eastern Ghats in the Andhra Pradesh state of India. The hills are also known as Venkatachalam.

References:

1. http://www.cprecevis.nic.in/Database/AmarkantakHill_2864.aspx
2. <https://www.karnatakaturism.org/tour-item/br-hills/>
3. http://www.cprecevis.nic.in/Database/SeshachalamHills_6629.aspx

40. With reference to India's projects on connectivity, consider the following statements:

1. East-West Corridor under Golden Quadrilateral Project connects Dibrugarh and Surat.
2. The Trilateral Highway connects Moreh in Manipur and Chiang Mai in Thailand via Myanmar.
3. Bangladesh-China-India-Myanmar Economic Corridor connects Varanasi in Uttar Pradesh with Kunming in China.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (d)

Option (d) is correct:

Statement 1 is not correct: The National Highways Authority of India initiated the National Highway Development Program (the program) in 1998 to ease chronic capacity constraints by upgrading key arteries of the national highways network. The project, which this validation is reviewing, was the third loan financed by the Asian Development Bank (ADB) for the multiyear lending program for the program. The program upgraded into four lanes the following highway corridors: (i) corridor connecting the major metropolitan cities of Delhi, Mumbai, Chennai, and Kolkata—known as the golden quadrilateral; (ii) north–south corridor connecting Srinagar to Kanyakumari (4,000 km); and (iii) **east–west corridor that connects Silchar to Porbandar (3,300 km).**

Statement 2 is not correct: The Trilateral highway which was initially conceptualized some 15 years ago connects **India's Moreh in the northeast of the country to Mae Sot in Thailand, via Myanmar.**

Statement 3 is not correct: The Bangladesh-China-India-Myanmar Economic Corridor (BCIM Forum for Regional Economic Cooperation), earlier known as the 'Kunming Initiative', was founded in 1999 with the objective of promoting trade and economic development in the sub-region **stretching from south west China to eastern India ('Kunming to Kolkata') via Myanmar, India's north east region (NER), and Bangladesh.**

References:

1. <https://www.adb.org/documents/india-east-west-corridor-project>
2. <https://www.aseanbriefing.com/news/india-eager-for-expansion-of-trilateral-highway-to-cambodia-laos-and-vietnam/#:~:text=The%20highway%20%E2%80%94%20which%20was%20initially,Sot%20in%20Thailand%2C%20via%20Myanmar>
3. <https://www.icsin.org/publications/the-bcim-economic-corridor-a-leap-into-the-unknown>

41. Consider the following statements:

Statement-I : Interest income from the deposits in Infrastructure Investment Trusts (InvITs) distributed to their investors is exempted from tax, but the dividend is taxable.

Statement-II: InvITs are recognized as borrowers under the 'Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002".

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (d)

Option (d) is correct:

Statement I is not correct: Any dividend or interest income that you get from an InvIT is completely taxable as per your Income Tax Slab rate. This income has to be declared every year in your Income Tax Return under the head "Income from Other Sources". So if you are in the highest Income Tax bracket, you may have to pay 30% tax on any dividends or interest that you receive from an InvIT.

Statement II is correct: With InvITs and REITs now recognised as borrowers under the Securitisation and Reconstruction of Financial Assets and Enforcement of Securities Interest (SARFAESI) Act, lenders to these trusts, have adequate statutory enforcement options, absence of which was earlier becoming a constraint for bankers to lend directly at trust level

References:

1. <https://www.etmoney.com/learn/personal-finance/all-you-need-to-know-about-infrastructure-investment-trusts-invits/>
2. <https://www.livemint.com/news/india/assets-worth-over-rs-3-5-trn-may-get-monetised-via-invits-reits-in-next-one-year-icra-11623326200439.html>

42. Consider the following statements:

Statement-I: In the post-pandemic recent past, many Central Banks worldwide had carried out interest rate hikes.

Statement-II: Central Banks generally assume that they have the ability to counteract the rising consumer prices via monetary policy means.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (a)

Option (a) is correct:

Statement I is correct: In the post-pandemic recent past, Financial conditions have tightened as central banks continue to hike interest rates. Amid the highly uncertain global environment risks to financial stability have increased substantially.

Statement II is correct: Central banks use monetary policy to manage economic fluctuations and achieve price stability, may it be inflation or deflation. Thus Statement-II is the correct explanation for Statement-I.

References:

1. <https://www.imf.org/en/Blogs/Articles/2022/10/11/interest-rate-increases-volatile-markets-signal-rising-financial-stability-risks>
2. <https://www.imf.org/en/About/Factsheets/Sheets/2023/monetary-policy-and-central-banking>

43. Consider the following statements:

Statement-I: Carbon markets are likely to be one of the most widespread tools in the fight against climate change.

Statement-II: Carbon markets transfer resources from the private sector to the State.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct Statement-II is incorrect
- (d) Statement-I is but incorrect but Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement I is correct: carbon markets are trading systems in which carbon credits are sold and bought. Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions. One tradable carbon credit equals one tonne of carbon dioxide or the equivalent amount of a different greenhouse gas reduced, sequestered or avoided.

Statement II is not correct: In a nutshell, carbon markets are trading systems in which carbon credits are sold and bought. Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions.

Reference:

1. <https://climatepromise.undp.org/news-and-stories/what-are-carbon-markets-and-why-are-they-important>

44. Which one of the following activities of the Reserve Bank of India is considered to be part of 'sterilization'?
- (a) Conducting 'Open Market Operations'
- (b) Oversight of settlement and payment systems
- (c) Debt and cash management for the Central and State Governments
- (d) Regulating the functions of Non- banking Financial Institutions

Ans: (a)

Option (a) is correct:

Sterilisation in the context of monetary policy refers to the activity of the RBI of taking away the excess money supply created due to its foreign exchange market intervention. **Open market operations (OMO) involving sale of securities constitute the commonly used instrument of sterilization.** There are several other instruments available to offset the impact of capital inflows on domestic money supply.

Reference:

1. <https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?ID=342>

45. Consider the following markets:
1. Government Bond Market
 2. Call Money Market
 3. Treasury Bill Market
 4. Stock Market

How many of the above are included in capital markets?

- (a) Only one (b) Only two
(c) Only three (d) All four

Ans: (b)

Option (b) is correct:

Capital markets are financial markets where long-term securities such as stocks, bonds, and other financial instruments are bought and sold. These markets facilitate the transfer of capital from investors to those who need it to fund projects, expand their businesses, or make other investments. **Government Bond Market and Stock Market** is Part of **Capital Market** whereas Treasury Bills and Call Money Market forms Part of Money Market.

Reference:

1. <https://www.bsebti.com/blog/understanding-instruments-of-capital-market-how-a-course-can-help/>

46. Which one of the following best describes the concept of 'Small Farmer Large Field'?

- (a) Resettlement of a large number of people, uprooted from their countries due to war, by giving them a large cultivable land which they cultivate collectively and share the produce
- (b) Many marginal farmers in an area organize themselves into groups and synchronize and harmonize selected agricultural operations
- (c) Many marginal farmers in an area together make a contract with a corporate body and surrender their land to the corporate body for a fixed term for which the corporate body makes a payment of agreed amount to the farmers
- (d) A company extends loans, technical knowledge and material inputs to a number of small farmers in an area so that they produce the agricultural commodity required by the company for its manufacturing process and commercial production

Ans: (b)

Option (b) is correct:

About 'Small Farmer Large Field':

- Collective action model "Small Farmers Large Field (SFLF)" has overcome the disadvantages faced by millions of small and marginal farmers due to diseconomies of scale and lack of bargaining power in the supply chain.
- **This model is participatory and flexible and allows small farmers to benefit from achieving economies of scale by organizing themselves into groups and synchronizing and harmonizing selected operations.**

Reference:

1. <https://www.aesanetwork.org/small-farmers-large-field-sflf-a-synchronized-collective-action-model-for-improving-the-livelihood-of-small-farmers-in-india/>

47. Consider the following statements:

1. The Government of India provides Minimum Support Price for niger (*Guizotia abyssinica*) seeds.
2. Niger is cultivated as a Kharif crop.
3. Some tribal people in India use niger seed oil for cooking.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (c)

Option (c) is correct:

About Niger:

- **Niger is cultivated as a Kharif crop. The Government of India provides Minimum Support Price for niger seeds.**
- **The tribal population uses niger seed oil for cooking**, the press cake post oil-extraction as livestock feed, and also consume the seeds as a condiment. Niger seed oil has medicinal properties, which is the reason for its commercial demand by the cosmetics, perfumeries and other allied industries.

References:

1. <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1541555>
2. <https://www.downtoearth.org.in/news/agriculture/illusive-oilseed-india-s-niger-seed-cultivation-is-declining-here-is-why-84380>

48. Consider the investments in the following assets :

1. Brand recognition
2. Inventory
3. Intellectual property
4. Mailing list of clients

How many of the above are considered intangible investments?

- (a) Only one (b) Only two
(c) Only three (d) All four

Ans: (c)

Option (c) is correct:

About Intangible Investments:

- An intangible asset is an asset that is not physical in nature. **Goodwill, brand recognition and intellectual property, such as patents, trademarks, and copyrights, Client list are all intangible investments.**
- Intangible assets exist in opposition to tangible assets, which include land, vehicles, equipment, and inventory.

References:

1. <https://www.investopedia.com/terms/i/intangibleasset.asp#:~:text=Goodwill%2C%20brand%20recognition%20and%20intellectual,vehicles%2C%20equipment%2C%20and%20inventory.>
2. <https://ghbintellect.com/are-client-lists-intellectual-property/>

49. Consider the following:

1. Demographic performance
2. Forest and ecology
3. Governance reforms
4. Stable government
5. Tax and fiscal efforts

For the horizontal tax devolution, the Fifteenth Finance Commission used how many of the above as criteria other than population area and income distance?

- (a) Only two (b) Only three
 (c) Only four (d) All five

Ans: (b)

Option (b) is correct:

Horizontal devolution:

- Based on principles of need, equity and performance, overall devolution formula is as follows.

Criteria	Weight (%)
Population	15.0
Area	15.0
Forest & ecology	10.0
Income distance	45.0
Tax & fiscal efforts	2.5
Demographic performance	12.5
Total	100

- On horizontal devolution, while XVFC agreed that the Census 2011 population data better represents the present need of States, to be fair to, as well as reward, the States which have done better on the demographic front, XVFC has assigned a 12.5 per cent weight to the demographic performance criterion.
- XVFC has reintroduced tax effort criteria to reward fiscal performance.

Hence only Statement 1, 2 and 5 are correct.

Reference:

1. <https://pib.gov.in/PressReleasePage.aspx?PRID=1693868>

50. Consider the following infrastructure sectors:

1. Affordable housing
2. Mass rapid transport
3. Health care
4. Renewable energy

On how many of the above does the UNOPS Sustainable Investments in Infrastructure and Innovation (S3i) initiative focus for its investments?

- (a) Only one (b) Only two
(c) Only three (d) All four

Ans:(c)

Option (c) is correct:

About the UNOPS Sustainable Investments in Infrastructure and Innovation (S3i) initiative focus:

- UNOPS provides infrastructure, procurement and project management services for a more sustainable world.
 - Firmly grounded in UN values, it ensures our partners maximize the positive impact of their **peace and security, humanitarian and development projects. Equality, inclusiveness, sustainability and resilience form the foundations of our work.**
- S3i's aim is to de-risk and attract private sector investment to infrastructure projects in developing and emerging economies. The homes were meant to be **affordable, sustainable, and environmentally sound — fitted with energy-efficient solar rooftops, built with local materials, and using local expertise.**

Hence only Statement 1, 3 and 4 are correct.

References:

1. <https://www.devex.com/news/what-went-wrong-with-unops-ambitious-impact-investing-initiative-103051>
2. <https://www.unops.org/about>

51. With reference to Home Guards, consider the following statements:

1. Home Guards are raised under the Home Guards Act and Rules of the Central Government.
2. The role of the Home Guards is to serve as an auxiliary force to the police in maintenance of internal security.
3. To prevent infiltration on the international border/coastal areas, the Border Wing Home Guards Battalions have been raised in some States.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (b)

Option (b) is correct:

Statement 1 is not correct: Home Guards are raised under the Home Guards Act and Rules of the States/Union Territories. They are recruited from amongst all classes of people and walks of life, who give their spare time to the organization for betterment of the community.

Statement 2 is correct: The role of Home Guards is to serve as an auxiliary Force to the Police in maintenance of internal security situations, help the community in any kind of emergency such as an air-raid, fire, cyclone, earthquake, epidemic etc., help in maintenance of essential services, promote communal harmony and assist the administration in protecting weaker sections, participate in socio-economic and welfare activities and perform Civil Defence duties.

Statement 3 is correct: Fifteen Border Wing Home Guards (BWHG) Battalions have been raised in the border States viz. Punjab (6 Bns.), Rajasthan (4 Bns.), Gujarat (2 Bns.) and one each Battalion for Meghalaya, Tripura and West Bengal to serve as an auxiliary to Border Security Force for preventing infiltration on the international border/coastal areas, guarding of VA/VPs and lines of communication in vulnerable area at the time of external aggression.

Reference:

1. <https://dgfscdhg.gov.in/about-homeguard#:~:text=Home%20Guards%20are%20raised%20under,of%20the%20States%2FUnion%20Territories.>

52. With reference to India, consider the following pairs:

Action	The Act under which it is covered
1. Unauthorized of the official police or Military uniforms	The official Secrets Act,1923
2. Knowingly misleading or otherwise Interfering with a police officer or military officer when engaged in their duties	The Indian Evidence Act, 1872
3. Celebratory gunfire : The Arms which can endanger the personal safety of others	The Arms (Amendment) Act, 2019

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (b)

Option (b) is correct:

Statement 1 is correct: Section 6 of The official Secrets Act,1923 discusses Unauthorized use of uniforms, falsification of reports, forgery, personation, and false documents.

Statement 2 is not correct: Section 7 of The official Secrets Act,1923 discusses Interfering with officers of the police or members of the Armed Forces of Union.

Statement 3 is correct: Section 9.9 of The Arms (Amendment) Act, 2019 discusses Whoever uses firearm in a rash or negligent manner or in celebratory gunfire so as to endanger human life or personal safety of others shall be punishable with an imprisonment for a term which may extend to two years, or with fine which may extend to rupees one lakh, or with both. Explanation.—For the purposes of this subsection, "celebratory gunfire" means the practice of using firearms in public gatherings, religious places, marriage parties or other functions to fire ammunition.'

References:

1. <https://www.indiacode.nic.in/bitstream/123456789/2379/1/A1923-19.pdf>
2. https://www.mha.gov.in/sites/default/files/ActAndRuleThe%20ArmsAct_17122019.pdf

53. Consider the following pairs:

Regions often in news	Reason for being mentioned in news
1. North Kivu and Ituri	: War between Armenia and Azerbaijan
2. Nagorno-Karabakh	: Insurgency in Mozambique
3. Kherson and Zaporizhzhia	: Dispute between Israel and Lebanon

How many of the above pairs are correctly matched?

- | | |
|---------------|--------------|
| (a) Only one | (b) Only two |
| (c) All three | (d) None |

Ans: (d)

Option (d) is correct:

Pair 1 is not correct: The **eastern Democratic Republic of the Congo (DRC)** is poised on the edge of a machete blade. Despite the achievement of considerable peace-building successes throughout much of this central African state in recent years, the current activities of armed groups and the Congolese armed forces in **North Kivu, South Kivu, and Ituri**, have the potential to further destabilize the eastern provinces, and possibly even neighboring countries.

Pair 2 is not correct: The Soviet Union began to collapse in 1991, just as Armenia and Azerbaijan achieved statehood, **Nagorno-Karabakh** officially declared independence. War erupted between **Armenia and Azerbaijan** over the region.

Pair 3 is not correct: Russia announced a partial mobilization on September 21, 2022 to refurbish the Russian army, prompting thousands of Russians to flee amid anti war protests, and moved to annex four occupied territories: **Luhansk, Donetsk, Kherson, and Zaporizhzhya**.

References:

1. <https://openknowledge.worldbank.org/entities/publication/a0f6f216-bb14-57b6-884a-44e16d1e8391>
2. <https://www.cfr.org/global-conflict-tracker/conflict/nagorno-karabakh-conflict>
3. <https://www.cfr.org/global-conflict-tracker/conflict/conflict-ukraine>

54. Consider the following statements:

Statement-I : Israel has established diplomatic relations with some Arab States.

Statement-II : The 'Arab Peace Initiative' mediated by Saudi Arabia was signed by Israel and Arab League.

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

- Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- Statement-I is correct but Statement-II is incorrect
- Statement-I is incorrect but Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement 1 is correct: The Abraham Accords are a series of treaties normalizing diplomatic relations between Israel, the United Arab Emirates (UAE), Bahrain, Sudan, and Morocco, facilitated by the U.S. Administration between August and December, 2020. In the span of five short months, these four Arab states joined Egypt and Jordan in making peace with Israel.

Statement 2 is not correct: The Arab Peace Initiative was presented at an Arab League summit in Beirut in March of 2002 and was revived at an Arab League summit in Riyadh in March 2007. The plan offers Israel full peace and normalization in return for full withdrawal from the occupied Palestinian territories. To observers, this provided an exceptional opportunity to settle the century-old Arab-Israeli conflict.

The Initiative was all but ignored by both the American administration and the Israeli government.

References:

- https://www.standwithus.com/theabrahamaccords?gclid=Cj0KCQjwmtGjBhDhARIsAEqfDEdePpq65byg5PXIDsNyioaGJrIJQIsPY7b6BxxUjzbepHGS7sHvhMaAIE6EALw_wcB
- <https://pij.org/articles/1131/the-arab-quartet-and-the-arab-peace-initiative>

55. Consider the following pairs with regard to sports awards:

- Major Dhyan Chand Khel : For the most spectacular and outstanding performance by a
Ratna Award sportsperson over period years
- Arjuna Award : For the lifetime achievement by a sportsperson
- Dronacharya Award : To honour eminent coaches who have successfully trained sportspersons
or teams
- Rashtriya Khel : To recognize the contribution made by sportspersons even after their
Protsahan Puraskar retirement

How many of the above pairs are correctly matched?

- Only one
- Only two
- Only three
- All four

Ans: (b)

Option (b) is correct:

National Sports Awards are given every year to recognize and reward excellence in sports.

- ‘**Major Dhyan Chand Khel Ratna Award**’ is given for the spectacular and most outstanding performance in the field of sports by a sportsperson over a period of previous four years. **(Hence, Statement 1 is correct.)**
- ‘**Arjuna Award** for outstanding performance in Sports and Games’ is given for good performance over a period of previous four years and showing qualities of leadership, sportsmanship and a sense of discipline. **(Hence, Statement 2 is not correct.)**
- ‘**Dronacharya Award** for outstanding coaches in Sports and Games’ is given to coaches for doing outstanding and meritorious work on a consistent basis and enabling sportspersons to excel in International events. **(Hence, Statement 3 is correct.)**
- ‘**Dhyan Chand Award** for Lifetime achievement in Sports and Games’ is given to honor sportspersons who have contributed to sports by their performance and continue to contribute to promotion of sports events after their retirement.
- ‘**Rashtriya Khel Protsahan Puruskar**’ is given to corporate entities (both in private and public sector), sports control boards, NGOs including sports bodies at the State and National level who have played a visible role in the area of sports promotion and development. **(Hence, Statement 4 is not correct.)**

Reference:

1. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1771249>

56. Consider the following statements in respect of the 44th Chess Olympiad, 2022 :

1. It was the first time that Chess Olympiad was held in India.
2. The official mascot was named Thambi'.
3. The trophy for the winning team in the open section is the Vera Menchik Cup.
4. The trophy for the winning team in the women's section is the Hamilton-Russell Cup.

How many of the statements given above are correct?

- (a) Only one (b) Only two
 (c) Only three (d) All four

Ans: (b)

Option (b) is correct:

Statement 1 is correct: The 44th Chess Olympiad is being held in Chennai from July 28 to August 9, 2022. The prestigious competition, which has been organised since 1927, is being hosted in India for the first time and in Asia after 30 years.

Statement 2 is correct: The 44th Chess Olympiad has unveiled the official logo and mascot for the event. The Mascot is a chess knight called Thambi.

Statement 3 is not correct: The trophy for the winning team at the Women's Chess Olympiad is named the Vera Menchik Cup in her honor.

Statement 4 is not correct: The Hamilton--Russell Chess Tournament is a chess competition competed in by social, political, military and sports Clubs in Great Britain.

References:

1. <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1845518#:~:text=The%2044th%20Chess%20Olympiad%20is,participation%20in%20any%20Chess%20Olympiad.>
2. <https://wom.fide.com/vera-menchik/>

57. Consider the following pairs:

- | Area of conflict | : | Country where it mentioned in news is located |
|------------------|---|---|
| 1. Donbas | : | Syria |
| 2. Kachin | : | Ethiopia |
| 3. Tigray | : | North Yemen |

How many of the above pairs are correctly matched?

- | | |
|---------------|--------------|
| (a) Only one | (b) Only two |
| (c) All three | (d) None |

Ans: (d)

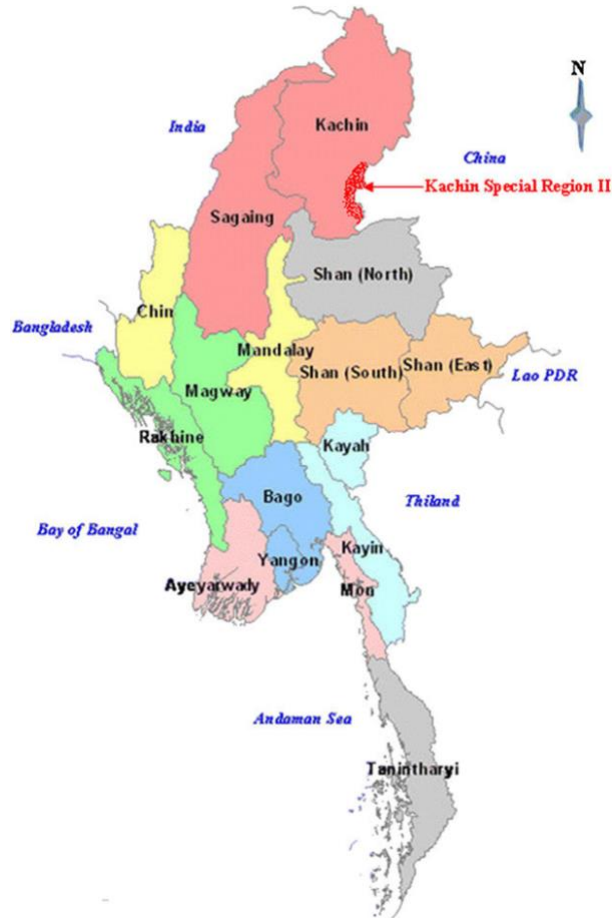
Option (d) is correct:

Pair 1 is not correctly matched :Donbas Region lies in Ukraine.

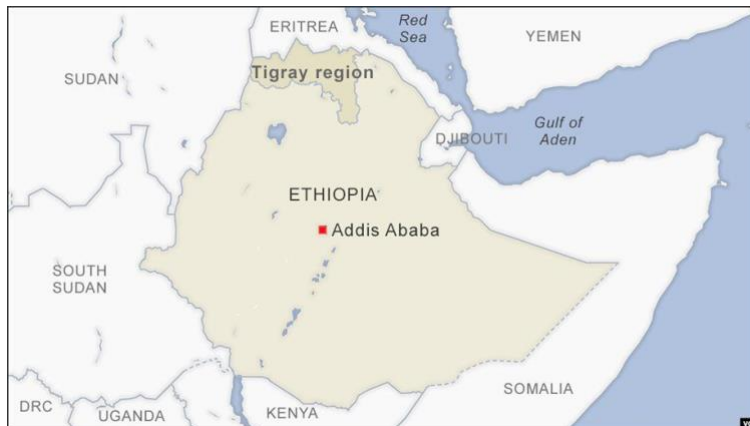


Pair 2 is not correctly matched: Kachin Region lies in China.

The Map of Myanmar



Pair 3 is not correctly matched: Tigray Region lies in Ethiopia.



References:

1. <https://www.bbc.com/news/world-europe-60938544>
2. <https://www.amnesty.org/en/latest/news/2022/10/myanmar-air-strikes-kachin-state/>
3. https://www.voafrica.com/a/africa_sudanese-military-enters-disputed-lands-neighboring-tigray-region/6199221.html

58. In the recent years Chad, Guinea, Mali and Sudan caught the international attention for which one of the following reasons common to all of them?
- Discovery of rich deposits of rare earth elements
 - Establishment of Chinese military bases
 - Southward expansion of Sahara Desert
 - Successful coups

Ans: (d)

Option (d) is correct:

About Wave of Coups in West Africa:

The recent military takeovers in **Mali, Guinea and Burkina Faso** are the result of increasing terror attacks from extremist forces aligned to Al Qaeda and the Islamic State, and growing public resentment against the failure of the French and NATO forces deployed in the West African region.

Reference:

- <https://frontline.thehindu.com/world-affairs/a-series-of-coups-in-west-africa-mali-guinea-burkina-faso/article38430184.ece>

59. Consider the following heavy industries:

- Fertilizer plants
- Oil refineries
- Steel plants

Green hydrogen is expected to play a significant role in decarbonizing how many of the above industries?

- Only one
- Only two
- All three
- None

Ans: (c)

Option (c) is correct:

- **Green hydrogen is expected to play a prominent role in decarbonising heavy industries, including oil refineries, steel mills and fertiliser plants.** India's current output of green hydrogen is low and comes from just a handful of pilot projects.
- Green hydrogen is produced by breaking down water in an electrolyser using only renewable energy, resulting in no carbon emissions. The hydrogen can then be combined with nitrogen to make green ammonia, avoiding hydrocarbons in the process. Green ammonia is used to store energy and make fertilizers. Green hydrogen could become an alternative to coal in steel mills and fossil fuels in long-haul transport like shipping and trucking.

Reference:

- <https://india.mongabay.com/2022/11/indias-initiatives-on-green-hydrogen-could-help-global-decarbonisation/#:~:text=Green%20hydrogen%20is%20expected%20to,steel%20mills%20and%20fertiliser%20plants>

60. Consider the following statements about G- 20:

1. The G-20 group was originally established as a platform for the Finance Ministers and Central Bank Governors to discuss the international economic and financial issues.
2. Digital public infrastructure is one of India's G-20 priorities.

Which of the statements given above is/are correct?

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

Ans: (c)

Option (c) is correct:

Statement 1 is correct: The G20 group of 19 countries and the EU was established in 1999 as a platform for Finance Ministers and Central Bank Governors to discuss international economic and financial issues. Together, the G20 countries account for almost two-thirds of the global population, 75% of global trade, and 85% of the world's GDP. In the wake of the global financial and economic crisis of 2007, the G20 was elevated to the level of Heads of State/Government and was named the "premier forum for international economic cooperation."

Statement 2 is correct: Working groups of G20 in the year of 2023 will focus on global priority areas such as green development, climate finance, inclusive growth, digital economy, public infrastructure, technology transformation, and reforms for women empowerment for socio-economic progress. All these steps are taken to accelerate progress towards the Sustainable Development Goals and secure a better future for the generations to come.

Reference:

1. https://moes.gov.in/g20-india-2023/moes-g20?language_content_entity=en

61. With reference to the Indian History, Alexander Rea, A. H. Longhurst, Robert Sewell, James Burgess and Walter Elliot were associated with

- (a) archaeological excavations
- (b) establishment of English Press in Colonial India
- (c) establishment of Churches in Princely States
- (d) construction of railways in Colonial India

Ans : (a)

Option (a) is correct: As Alexander Rea, A. H. Longhurst, Robert Sewell, James Burgess and Walter Elliot were associated with archaeological excavations conducted at various sites which included the Stupas of Bhattiprolu, Gudivada and Ghantasala, and Other Ancient Sites associated with Buddhist Antiquities.

Reference:

1. <https://tourism.ap.gov.in/assets/img/Brochures/AP%20Buddhist%20Places%20Brochure.pdf>

62. Consider the following pairs:

Site	Well known for
1. Besnagar	: Shaivite cave shrine
2. Bhaja	: Buddhist cave shrine
3. Sittanavasal	: Jain cave shrine

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans : (b)

Pair 1 is not correctly matched: As Besnagar is not known for being a **Shaivite Cave Shrine**, rather it is known for Garuda Pillar dedicated to lord Vasudeva by **Heliodorus**, native of Taxila near Rawalpindi in Pakistan, who came as an envoy of an **Indo-Greek ruler Antialkidas in the court of Bhagabhadra**. **Heliodorus** followed Vaishnava Sect.

Pair 2 is correctly matched: As Buddhist caves are in abundance in the western ghats. The basalt rocks and the hilly topography was ideal for cave building. Some of the caves are from 2nd century BCE-4th century CE, belonging to **Hinayana Buddhism including caves at Kanheri, Karla, Bhaja and Bedse**.

Pair 3 is correctly matched: As Sittanavasal is a small village in Pudukottai district of Tamil Nadu, **it was a major centre of Jain influence for 1,000 years just before the Christian era**. Sittanavasal is the name used synonymously for the hamlet and the hillock that houses the Arivar Kovil (temple of Arihats - Jains who conquered their senses).

Reference:

1. <https://www.thehindu.com/news/national/tamil-nadu/sittanavasals-jain-monuments-weathering-the-elements-and-public-apathy/article65931192.ece>

63. Consider the following statements:

Statement-I: 7th August is declared as the National Handloom Day.

Statement-II: It was in 1905 that the Swadeshi Movement was launched on the same day.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
 (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
 (c) Statement-I is correct but Statement-II is incorrect
 (d) Statement-I is incorrect but Statement-II is correct

Ans: (a)

Option (a) is correct:

- **Statement -I is correct:** In 2015, the Government of India decided to designate the **7th August every year, as the National Handloom Day**. The first National Handloom Day was inaugurated on 7 August 2015 by Prime Minister Narendra Modi in Chennai.
- **Statement -II is the correct explanation for Statement-1:** As the Swadeshi Movement was launched on 7th August, 1905 which had encouraged indigenous industries and **in particular handloom weavers**.

Reference:

1. <https://www.mygov.in/campaigns/national-handloom-day/#:~:text=The%20Swadeshi%20Movement,Modi%20in%20Chennai>

64. Consider the following statements in respect of the National Flag of India according to the Flag Code of India, 2002 :

Statement-I : One of the standard sizes of the National Flag of India is 600 mm × 400 mm.

Statement-II : The ratio of the length to the height (width) of the Flag shall be 3:2.

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

- Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- Statement-I is correct but Statement-II is incorrect
- Statement-I is incorrect but Statement-II is correct

Ans : (d)

Option (d) is correct:

Statement -I is not correct: As 600 mm x 400 mm not one of the standard sizes of the National Flag of India. Allowed dimensions as per the Flag Code of India are as under:

Statement -II is correct: As according to **the Flag Code of India**, the National Flag shall be rectangular in shape. The Flag can be of any size but **the ratio of the length to the height (width) of the National Flag shall be 3:2**.

The standard sizes of the National Flag shall be as follows:-	
Flag Size No.	Dimensions in mm
1	6300 X 4200
2	3600 X 2400
3	2700 X 1800
4	1800 X 1200
5	1350 X 900
6	900 X 600
7	450 X 300
8	225 X 150
9	150 X 100

References:

1. [https://pib.gov.in/PressReleasePage.aspx?PRID=1845264#:~:text=As%20per%20paragraph%C2%A0%C2%A0%201.3%C2%A0%20%26%201.4%C2%A0%20of%20the%20Flag%C2%A0%20Code%C2%A0%20of%20India%2C%C2%A0%20the%20National%20Flag%20shall%20be%20rectangular%C2%A0%20in%20shape.%20The%20Flag%20can%20be%20of%20any%20size%20but%20the%20ratio%20of%20the%20length%C2%A0%20to%20the%20height%C2%A0%20\(width\)%C2%A0%20of%20the%20National%C2%A0%20Flag%C2%A0%20shall%20be%203%3A2](https://pib.gov.in/PressReleasePage.aspx?PRID=1845264#:~:text=As%20per%20paragraph%C2%A0%C2%A0%201.3%C2%A0%20%26%201.4%C2%A0%20of%20the%20Flag%C2%A0%20Code%C2%A0%20of%20India%2C%C2%A0%20the%20National%20Flag%20shall%20be%20rectangular%C2%A0%20in%20shape.%20The%20Flag%20can%20be%20of%20any%20size%20but%20the%20ratio%20of%20the%20length%C2%A0%20to%20the%20height%C2%A0%20(width)%C2%A0%20of%20the%20National%C2%A0%20Flag%C2%A0%20shall%20be%203%3A2)
2. https://www.mha.gov.in/sites/default/files/flagcodeofindia_070214.pdf

65. Consider the following statements in respect of the Constitution Day:

Statement-I:

Constitution Day is celebrated on 26th November every year to promote constitutional values among citizens.

Statement-II:

On 26th November, 1949, the Constituent Assembly of India set up a Drafting Committee under the Chairmanship of Dr. B. R. Ambedkar to prepare a Draft Constitution of India.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans : (c)

Option (c) is correct:

- **Statement -I is correct:** As the **Constitution Day** also known as ‘Samvidhan Divas’, is celebrated in our country on 26th November every year to commemorate the adoption of the Constitution of India.
- **Statement -II is not correct:** As the **Drafting Committee was set up** under the Chairmanship of Dr. B.R. Ambedkar by the Constituent Assembly **on 29 August, 1947** to prepare a Draft Constitution for India. On 26th November 1949, the Constituent Assembly of India adopted the Constitution of India, which came into effect from 26th January 1950.

References:

1. <https://dse1.education.gov.in/sites/default/files/Brief-Constitution.pdf>
2. <https://loksabha.nic.in/constituent/facts.html#:~:text=On%2029%20August%2C%201947%2C%20the.a%20Draft%20Constitution%20for%20India.>

66. Consider the following statements :

Statement-I : Switzerland is one of the leading exporters of gold in terms of value.

Statement-II : Switzerland has the second largest gold reserves in the world.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement - I is correct:

Below are the top 5 countries that exported the highest dollar value worth of gold during 2021:

Country	Export of Gold (in dollars)
Switzerland	\$86.8 billion
United Kingdom	\$41.4 billion
Hong Kong	\$30.8 billion
United Arab Emirates	\$28.7 billion
United States	\$27.7 billion

Statement II is not correct:

Top 10 Countries with the Largest Gold Reserves (in tons):

Countries	Gold Reserves (in metric tons)
United States	8,133
Germany	3,355
Italy	2,452
France	2,437
Russia	2,299
China	1,948
Switzerland	1,040

Countries	Gold Reserves (in metric tons)
Japan	846
India	785
Netherlands	612

References:

1. <https://www.worldstopexports.com/gold-exports-country/>
2. <https://www.madisontrust.com/information-center/which-world-countries-have-the-most-gold/>

67. Consider the following statements:

Statement-I : Recently, the United States of America (USA) and the European Union (EU) have launched the Trade and Technology Council'.

Statement-II: The USA and the EU claim that through this they are trying to bring technological progress and physical productivity under their control.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (a)

Option (a) is correct:

Statement I is correct: The EU-US Trade and Technology Council serves as a forum for the United States and European Union to coordinate approaches to key global trade, economic, and technology issues and to deepen transatlantic trade and economic relations based on these shared values. It was established during the EU-US Summit on 15 June 2021 in Brussels.

Statement II is correct: Through the Council, the EU and the US are working together to:

- **Ensure that trade and technology serve our societies and economies, while upholding their common values**
- Strengthen our technological and industrial leadership
- Expand bilateral trade and investment

Reference:

1. https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/stronger-europe-world/eu-us-trade-and-technology-council_en#:~:text=The%20EU%20US%20Trade%20and,based%20on%20these%20shared%20values.

68. Consider the following statements :

Statement-I : India accounts for 3.2% of global export of goods.

Statement-II : Many local companies and some foreign companies operating in India have taken advantage of India's 'Production-linked Incentive' scheme.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (d)

Option (d) is correct:

Statement I is not correct: as per WTO data, India's share in global exports was less than 2% and in global imports it was less than 3%.

Statement II is correct: Production-Linked Incentive or PLI scheme is a scheme that aims to give companies incentives on incremental sales (over FY 2019-20) from products manufactured in domestic units. **The scheme invites foreign companies to set up units in India, however, it also aims to encourage local companies to set up or expand existing manufacturing units and also to generate more employment and cut down the country's reliance on imports from other countries.**

Reference:

1. <https://www.mondaq.com/india/inward-foreign-investment/1038904/pli-scheme-production-linked-incentive-scheme-fact-sheet>

69. Consider the following statements:

The 'Stability and Growth Pact' of the European Union is a treaty that

1. limits the levels of the budgetary deficit of the countries of the European Union
2. makes the countries of the European Union to share their infrastructure facilities
3. enables the countries of the European Union to share their technologies

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (a)

Option (a) is correct:

Statement 1 is correct and Statements 2 and 3 are not correct :

- The Stability and Growth Pact (SGP) is a set of rules designed to ensure that countries in the European Union pursue sound public finances and coordinate their fiscal policies.
- **The preventive arm of the stability and growth pact (SGP) supports EU governments in achieving their commitments on sound fiscal policies and coordination by setting for each country a budgetary target.**
- All EU countries are expected to reach their medium-term budgetary objectives (MTOs). MTOs are set to ensure sound fiscal health. They take into account the need to achieve sustainable debt levels while ensuring governments have enough room to manoeuvre and a safety margin against breaching the EU's fiscal rules.

Reference:

1. https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact/preventive-arm/medium-term-budgetary-objectives-mtos_en

70. Consider the following statements :

1. Recently, all the countries of the United Nations have adopted the first-ever compact for international migration, the 'Global Compact for Safe, Orderly and Regular Migration (GCM)'.
2. The objectives and commitments stated in the GCM are binding on the UN member countries.
3. The GCM addresses internal migration or internally displaced people also in its objectives and commitments.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (d)

Option (d) is correct:

Statement 1 is not correct: The Global Compact for Safe, Orderly and Regular Migration, is the first intergovernmental agreement, prepared under the auspices of the United Nations, to cover all dimensions of international migration in a holistic and comprehensive manner. **163 (out of 193 UN Members) countries approved the new Global Compact for Safe, Orderly and Regular Migration (GCM)** – the first comprehensive international agreement to address global human mobility. Hence, statement 1 is not correct.

Statement 2 is not correct: The Global Compact is a **non-legally binding cooperative framework** that recognizes that no State can address migration on its own due to the inherently transnational nature of the phenomenon. Hence, Statement 2 is not correct.

Statement 3 is not correct: It aims to cover all dimensions of **international migration** in a holistic and comprehensive manner. Hence, Statement 3 is not correct.

References:

1. <https://www.ohchr.org/en/migration/global-compact-safe-orderly-and-regular-migration-gcm#:~:text=The%20Global%20Compact%20for%20Safe,a%20holistic%20and%20comprehensive%20manner.>
2. <https://odi.org/en/insights/163-states-just-approved-the-global-compact-for-migration-now-what/>

71. Consider the following countries:

- | | |
|--------------|-------------------|
| 1. Bulgaria | 2. Czech Republic |
| 3. Hungary | 4. Latvia |
| 5. Lithuania | 6. Romania |

How many of the above-mentioned countries share a land border with Ukraine?

- | | |
|---------------|----------------|
| (a) Only two | (b) Only three |
| (c) Only four | (d) Only five |

Ans : (a)

Option (a) is correct:

- Ukraine is bordered by **Belarus to the north, Russia to the east, the Sea of Azov and the Black Sea to the south, Moldova and Romania to the southwest, and Hungary, Slovakia, and Poland to the west.**



72. With reference to the Earth's atmosphere, which one of the following statements is correct?

- (a) The total amount of insolation received at the equator is roughly about 10 times of that received at the poles.
- (b) Infrared rays constitute roughly two-thirds of insolation.
- (c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere
- (d) Infrared waves are a part of visible spectrum of electromagnetic waves of solar radiation.

Ans: (c)

Option (a) is not correct : it's not exactly 10 times greater insolation received at equator

Option (b) is not correct : Infrared Rays (IR) constitute only small amount of insolation

Option (c) is correct: The World's surface gets the majority of its energy in short frequencies. The energy that the earth receives from the sun is referred to as incoming solar radiation, or in short, insolation. Short-wave solar radiation penetrates the atmosphere largely transparently. The approaching sun-powered radiation goes through the climate prior to striking the world's surface. The majority of the near-infrared radiation is absorbed by water vapour, ozone, and other gases in the troposphere.

Option (d) is not correct : IR is not part of the visible range.

Reference:

1. <https://www.worldwildlife.org/places/congo-basin>

73. Consider the following statements:

Statement-I: The soil in tropical rain forests is rich in nutrients.

Statement-II: The high temperature and moisture of tropical rain forests cause dead organic matter in the soil to decompose quickly.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (d)

Option (d) is correct:

Statement I is not correct: The tropical rainforest occurs near the equator and close to the tropics. Thus it receives **heavy rainfall** throughout the year. The heavy rain causes **intense leaching** of the soil which **increases the acidity** of the soil. Due to increased acidity, there is an **issue of less nutrient absorption** from the soil.

Statement -II is correct: As the tropical rainforest lies in a region of heavy rainfall and near to tropics, thus the **climate** here is **hot and humid**. This causes the **rapid decomposition** of the **dead organic material** present in the soil.

Reference:

1. <https://www.wtamu.edu/~cbaird/sq/2013/07/12/what-makes-the-soil-in-tropical-rainforests-so-rich/#:~:text=On%20the%20ground%20of%20the,without%20entering%20the%20soil%20much>

74. Consider the following statements:

Statement-I: The temperature contrast between continents and oceans is greater during summer than in winter.

Statement-II: The specific heat of water is more than that of land surface.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (a)

Option (a) is correct:

Statement I is correct: During the summer the temperature on land increases rapidly and in the ocean increases gradually, while in winter the temperature on the land falls rapidly while in the oceans it decreases slowly. Hence, the **difference between the temperature of the continent and the ocean is more in summer than in winter.**

Statement II is correct: Specific heat is the amount of heat energy it takes to raise or lower the temperature of 1 gram of a substance by 1°Celsius. The **specific heat of water is greater than that of dry soil**, thus water absorbs and releases heat more slowly than land.

Reference:

1. <https://www.ces.fau.edu/nasa/module-3/why-does-temperature-vary/land-and-water.php>

75. Consider the following statements:

1. In a seismograph, P waves are recorded earlier than S waves.
2. In P waves, the individual particles vibrate to and fro in the direction of wave propagation whereas in S waves, the particles vibrate up and down at right angles to the direction of wave propagation.

Which of the statements given above is/are correct?

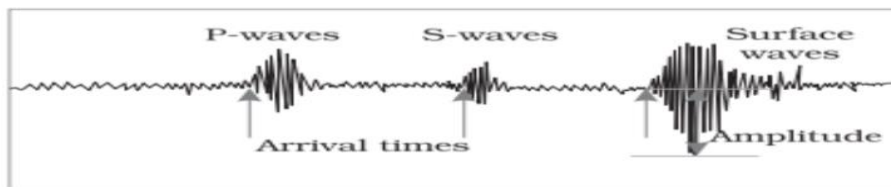
- (a) 1 only (b) 2 only
- (c) Both 1 and 2 (d) Neither 1 nor 2

Ans: (c)

Option (c) is correct.

Statement 1 is correct: There are two types of body waves- P and S waves. The P-waves and S-waves are also known as primary waves and secondary waves respectively. The **P-waves** move faster and are the **first to arrive at the surface**. Therefore, **in a seismograph, P waves are recorded earlier than S waves**. The S-waves arrive at the surface with some time lag.

Statement 2 is correct: The **P-waves vibrate parallel to the direction of the wave**. Thus it causes the **to-and-fro motion**. Further, the **S-waves vibrate perpendicular** (up and down at right angles) to the direction of wave propagation i.e. in the **right angle**.



Reference:

1. NCERT- Geography Chapter 3- Interior of the Earth

76. With reference to coal-based thermal power plants in India, consider the following statements:

1. None of them uses seawater.
2. None of them is set up in water-stressed district
3. None of them is privately owned.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (d)

Option (d) is correct:

Statement 1 is not correct: The usage of water in the thermal plant is crucial for cooling high temperatures and powering turbines with steam. In India, largely river water is used for this purpose, however, **some of the thermal power plant e.g.- Mundra Thermal Power Station (Gujarat) uses seawater.**

Statement 2 is not correct: More than **40% of the thermal power plant** has been in the **water-stressed district.**

Statement 3 is not correct: More than **50 coal-based thermal power plants** are operated by the **private sector** viz; Adani Power, Essar Power, JPV Ltd etc.

References:

1. https://cea.nic.in/wp-content/uploads/pdm/2021/06/list_power_stations_2021.pdf
2. <https://www.power-technology.com/features/feature-the-top-10-biggest-thermal-power-plants-in-india/>
3. <https://www.wri.org/insights/40-indias-thermal-power-plants-are-water-scarce-areas-threatening-shutdowns>

77. ‘Wolbachia method’ is sometimes talked about with reference to which one of the following?

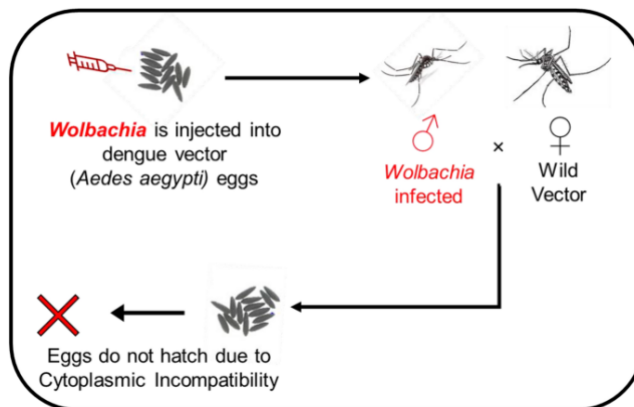
- (a) Controlling the viral diseases spread by mosquitoes
- (b) Converting crop residues into packing material
- (c) Producing biodegradable plastics
- (d) Producing biochar from thermochemical conversion of biomass

Ans: (a)

Option (a) is correct.

About Wolbachia Method:

- **Wolbachia method** is used to control the population of mosquitoes and thus helps in **controlling viral diseases such as zika, dengue, and chikungunya spread by the mosquitoes.**
- In this method the male *Aedes Aegypti* mosquitoes with Wolbachia mate with wild female mosquitoes that do not have Wolbachia, the eggs will not hatch and thus leads to sterilisation. Because the eggs don't hatch and the number of *Aedes Aegypti* mosquitoes decreases.



Reference:

1. <https://www.cdc.gov/mosquitoes/mosquito-control/community/emerging-methods/wolbachia.html>

78. Consider the following activities:

1. Spreading finely ground basalt rock on farmlands extensively
2. Increasing the alkalinity of oceans by adding lime
3. Capturing carbon dioxide released by various industries and pumping it into abandoned subterranean mines in the form of carbonated waters

How many of the above activities are often considered and discussed for carbon capture and sequestration?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (c)

Option (c) is correct.

Statement 1 is correct: Basalt rock is termed as the best rock for **capturing CO₂** and thus spreading of **finely ground basalt rock** on farmlands helps in **carbon sequestration** as well as improves the fertility of the soil.

Statement 2 is correct: When CO₂ dissolves in seawater it produces carbonic acid as a byproduct. Lime is a strong alkali capable of neutralising acids. When **lime is added to seawater**, it reacts with the carbonic acid and neutralises it, thus forming a **carbonate ion**. Thus it **increases the alkalinity of the ocean** and this in turn **leads to more absorption of carbon**.

Statement 3 is correct: Carbon capture utilization and storage (CCUS) technologies **capture CO₂ emissions at the source** or directly from the air. CO₂ emissions are then transported away and **stored deep underground** or turned into useful products. It **helps in carbon sequestration as well as improving the quality of natural gas**.

References:

1. <https://www.theguardian.com/environment/2020/jul/08/spreading-rock-dust-on-fields-could-remove-vast-amounts-of-co2-from-air>
2. <https://science.howstuffworks.com/environmental/green-science/lime-seawater1.htm#:~:text=When%20you%20add%20lime%20to,released%20by%20an%20overwhelmed%20ocean>
3. https://www.aramco.com/en/sustainability/climate-change/managing-our-footprint/carbon-capture-utilization-and-storage?utm_source=googleads&utm_medium=ppc&utm_campaign=GO_IN_EN_Carbon_Capture_PH&utm_term=OTHER&utm_content=OTHER&gclid=Cj0KCQjwmtGjBhDhARIsAEqfDEeycTND7SniOP2IV6MHGOU3jCw1oM4qR3MbYG-k7l6vQFdbfSOMId8aAoWTEALw_wcB

79. 'Aerial metagenomics' best refers to which one of the following situations?

- (a) Collecting DNA samples from air in a habitat at one go
- (b) Understanding the genetic makeup of avian species of a habitat
- (c) Using air-borne devices to collect samples from moving blood animals
- (d) Sending drones to inaccessible areas to collect plant and animal samples from land surfaces and water bodies

Ans: (a)

Option (a) is correct.

About Aerial Metagenomics:

- **Aerial metagenomics** refers to the study of genetic material obtained from **samples collected from the air in a habitat.**
- It involves extracting of genetic material such as DNA or RNA directly from the environmental samples without using any specimens for cultivation purposes in a laboratory.
- Thus, aerial metagenomics helps in providing a holistic view of the microbial communities living in a particular habitat.

80. Microsatellite DNA' is used in the case of which one of the following?

- (a) Studying the evolutionary relationships among various species of fauna
- (b) Stimulating 'stem cells' to transform into diverse functional tissues
- (c) Promoting clonal propagation of horticultural plants
- (d) Assessing the efficacy of drugs by conducting series of drug trials in a population

Ans: (a)

Option (a) is correct.

Microsatellite, as related to genomics, refers to a short segment of DNA, usually one to six or more base pairs in length, that is **repeated multiple times** in succession at a particular genomic location. The number of repeated segments within a microsatellite sequence often varies among people, which makes them useful as polymorphic markers for studying **inheritance patterns** in families or for creating a **DNA fingerprint** from crime scene samples. These prints are inherited from parents to child and thus is useful in studying the **evolutionary relationships** among **various species** of fauna.

Reference:

1. <https://www.genome.gov/genetics-glossary/Microsatellite#:~:text=%E2%80%8BMicrosatellite&text=These%20DNA%20sequences%20are%20typically,fingerprint%20from%20crime%20scene%20samples.>

81. Consider the following statements in relation to Janani Suraksha Yojana:

1. It is a safe motherhood intervention of the State Health Departments.
2. Its objective is to reduce maternal and neonatal mortality among poor pregnant women.
3. It aims to promote institutional delivery among poor pregnant women.
4. Its objective includes providing public health facilities to sick infants up to one year of age.

How many of the statements given above are correct?

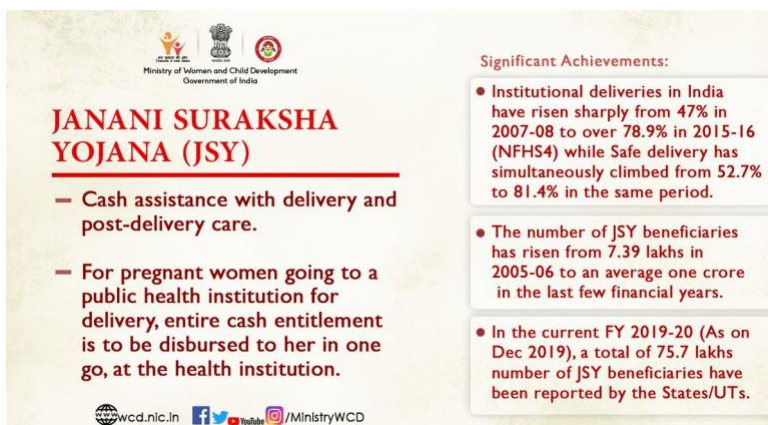
- (a) Only one (b) Only two
 (c) Only three (d) All four

Ans: (b)

Option (b) is correct.

About Janani Suraksha Yojana:

- **Janani Suraksha Yojana (JSY)** is a **safe motherhood intervention** under the **National Rural Health Mission (NRHM)**. **(Statement 1 is not correct)**
- The objective of the **Janani Suraksha Yojana (JSY)** is to **reduce maternal and neo-natal mortality** among poor pregnant women. **(Statement 2 is correct)**
- The JSY aims to **promote institutional delivery among poor pregnant women**. **(Statement 3 is correct)**
- The JSY is **only related to the safe motherhood intervention**. Providing **public health facilities to sick infants upto one year of age** is the objective of **Janani Shishu Suraksha Karyakram**. **(Statement 4 is not correct)**



References:

1. [https://jalaun.nic.in/scheme/janani-suraksha-yojana-jsy/#:~:text=Janani%20Suraksha%20Yojana%20\(JSY\)%20is,among%20the%20poor%20pregnant%20women.](https://jalaun.nic.in/scheme/janani-suraksha-yojana-jsy/#:~:text=Janani%20Suraksha%20Yojana%20(JSY)%20is,among%20the%20poor%20pregnant%20women.)
2. <https://nhm.gov.in/index1.php?lang=1&level=3&sublinkid=842&lid=308>

82. Consider the following statements in the context of interventions being undertaken under Anaemia Mukta Bharat Strategy:

1. It provides prophylactic calcium supplementation for pre-school children, adolescents and pregnant women.
2. It runs a campaign for delayed cord clamping at the time of child-birth.
3. It provides for periodic deworming to children and adolescents.
4. It addresses non-nutritional causes of anaemia in endemic pockets with special focus on malaria, hemoglobinopathies and fluorosis.

How many of the statements given above are correct?

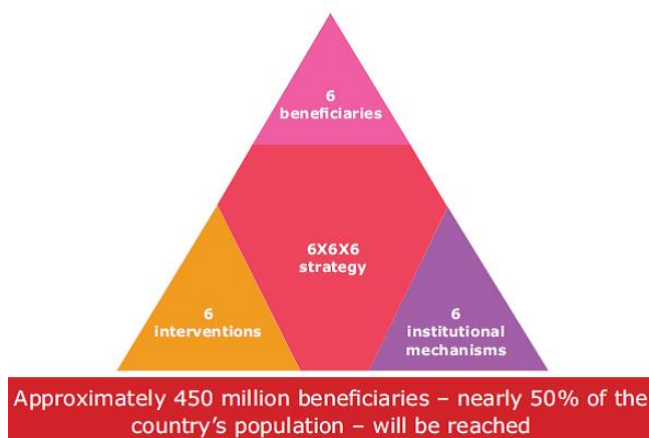
- (a) Only one (b) Only two
 (c) Only three (d) All four

Ans: (c)

Option (c) is correct.

About Anaemia Mukta Bharat Strategy:

- Under the **Anaemia Mukta Bharat Strategy**, the key intervention is to provide **prophylactic iron and folic acid supplementation** for pre-school children, adolescents and pregnant women. **(Statement 1 is not correct)**
- The Anaemia Mukta Bharat Strategy runs a **campaign for delayed cord clamping** (by at least 3 minutes or until cord pulsations cease) at the time of child birth. **(Statement 2 is correct)**
- The Anaemia Mukta Bharat Strategy provides a **bi-annual mass deworming for children and adolescents** in the **age group between 1-19 years** and of women of reproductive age and pregnant women as part of the National Deworming Day programme. **(Statement 3 is correct)**
- The strategy attempts to intensify awareness and integrate screening and treatment for following **non-nutritional causes of anaemia with a special focus on malaria, haemoglobinopathies and fluorosis**. **(Statement 4 is correct)**



References:

1. <https://anemiamukt Bharat.info/interventions/#2nd>
2. <https://anemiamukt Bharat.info/interventions/#3rd>
3. <https://anemiamukt Bharat.info/interventions/#6th>

83. Consider the following statements:

1. Carbon fibres are used in the manufacture of components used in automobiles and aircrafts.
2. Carbon fibres once used cannot be recycled.

Which of the statements given above is/are correct?

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

Ans: (a)

Option (a) is correct.

Statement 1 is correct: Carbon fibre is a material consisting of very thin filaments of carbon atoms. It is used where low weight, high stiffness, and high conductivity is desired. It is widely used in the **manufacture of components used in automobiles and aircrafts.**

Statement 2 is not correct: Carbon fibre is environmentally friendly and exhibits a longer life cycle. There are **numerous technologies to recycle carbon fibres.**

References:

1. <https://www.thoughtco.com/uses-of-carbon-fiber-820394>
2. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9324376/#:~:text=Currently%2C%20carbon%20fibre%20waste%20or,which%20are%20also%20called%20scrap>

84. Consider the following actions:

1. Detection of car crash/collision which results in the deployment of airbags almost instantaneously
2. Detection of accidental free fall of a laptop towards the ground which results in the immediate turning off of the hard drive
3. Detection of the tilt of the smart-phone which results in the rotation of display between portrait and landscape mode

In how many of the above actions is the function of accelerometer required?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (c)

Option (c) is correct.

About Accelerometers and its Functions:

- An accelerometer is an electromechanical device used to measure acceleration forces. These forces may be static like the continuous force of gravity or dynamic force to sense movement or vibrations. **Accelerometers** are used in cars for **detecting car crashes/collisions** and **deploy the airbags** almost instantaneously. **(Statement 1 is correct)**
- **Accelerometers in laptops protect hard drives from damage.** If the laptop were to suddenly drop while in use, the accelerometer would detect the sudden free fall and immediately turn off the hard drive to avoid hitting the reading heads into the hard drive platter. **(Statement 2 is correct)**
- **Accelerometer is used in smartphones** as it detects the **rotation of their display** between portrait and landscape mode depending on the tilt of the phone. **(Statement 3 is correct)**

Reference:

1. <https://www.livescience.com/40102-accelerometers.html>

85. With reference to the role of biofilters in Recirculating Aquaculture System, consider the following statements:

1. Biofilters provide waste treatment by removing uneaten fish feed.
2. Biofilters convert ammonia present in fish waste to nitrate.
3. Biofilters increase phosphorus as a nutrient for fish in water.

How many of the statements given above are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (b)

Option (b) is correct:

About Role of Biofilters in Recirculating Aquaculture System:

- The use of biofilters **to remove toxins from wastewater and waste gases** has advanced in recent decades. In order to remove contaminants from a fluid stream, biofilters **fix microorganisms to an inorganic/organic medium (carrier)**, which has the ability to break down a wide range of chemicals. By removing uneaten fish feed, they additionally perform waste treatment. **(Statement 1 is correct)**
- Ammonia and nitrite concentrations can be maintained at levels that are safe for fish by using a biofilter that is correctly constructed. **Ammonia nitrogen is transformed by biofilters into nitrites nitrogen**, which is then transformed into less hazardous nitrate nitrogen for fish. **(Statement 2 is correct)**
- Biofilters do not increase phosphorus as a nutrient for fish in water. Phosphorus (P) is actually removed by biofilters to prevent eutrophication in waters. **(Statement 3 is not correct)**

References:

1. <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/biofilter>
2. <https://ag.arizona.edu/azaqua/ista/ISTA7/RecircWorkshop/Workshop%20PP%20%20&%20Misc%20Papers%20Adobe%202006/7%20Biofiltration/Nitrification-Biofiltration/Biofiltration-Nitrification%20Design%20Overview.pdf>

86. Consider the following pairs:

Objects in space	Description
1. Cepheids	: Giant clouds of dust and gas in space
2. Nebulae	: Stars which brighten and dim periodically
3. Pulsars	: Neutron stars that are formed when massive stars run out of fuel and collapse

How many of the above pairs are correctly matched?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (a)

Option (a) is correct:

Pair 1 is not correct: Cepheids, also known as Cepheid Variables, are stars that periodically brighten and dim. Because of their behaviour, they can serve as cosmic yardsticks up to a few tens of millions of light-years away. a constant relationship to their brightness.

Pair 2 is not correct: A nebula is a very large cloud of gas and dust in outer space. A dead star's explosion, such as a supernova, releases gas and dust, which in turn forms certain nebulae (more than one nebula). Other nebulae are places where brand-new stars are only starting to develop. It is for this reason that some nebulae are referred to as "star nurseries."

Pair 3 is correct: Pulsars are extremely compact, rapidly spinning neutron stars that have a diameter of no more than 20 km (12 miles). **They are virtually entirely made of neutrons that are formed when massive stars run out of fuel and collapse.**

References:

1. <https://starchild.gsfc.nasa.gov/docs/StarChild/questions/cepheids.html>
2. <https://hubblesite.org/science/stars-and-nebulas>
3. https://imagine.gsfc.nasa.gov/science/objects/neutron_stars1.html

87. Which one of the following countries has its own Satellite Navigation System?

- (a) Australia (b) Canada
 (c) Israel (d) Japan

Ans: (d)

Option (d) is correct:

About Satellite Navigation System of Japan:

- An artificial satellite constellation that can provide geo-specific positioning everywhere in the world is known as a satellite navigation system.
- **Japan has its own satellite navigation system.**
- **The majority of the satellites in the Japanese QZSS satellite positioning system are in quasi-zenith orbits (QZO).**
- However, satellites in geostationary orbits (GEO) and Quasi-Zenith Orbit (QZO) can both be referred to as "Quasi-Zenith Satellites (QZS)".



Reference:

1. https://qzss.go.jp/en/overview/services/sv02_why.html

88. Consider the following statements:

1. Ballistic missiles are jet-propelled at subsonic speeds throughout their flights, while cruise missiles are rocket-powered only in the initial phase of flight.
2. Agni-V is a medium-range supersonic cruise missile, while BrahMos is a solid-fuelled intercontinental ballistic missile.

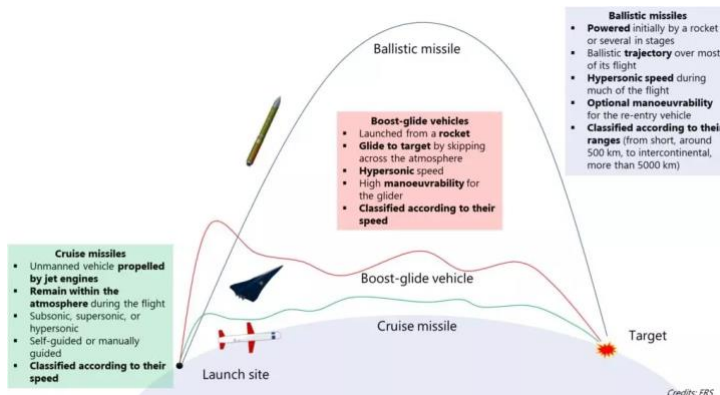
Which of the statements given above is/are correct?

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

Ans: (d)

Option (d) is correct:

Statement 1 is not correct: Ballistic missiles are rocket-powered only during the initial (boost) phase of flight, following an arcing trajectory to the target after that. In contrast, cruise missiles are jet-propelled at subsonic speeds throughout their journeys. Cruise missile flies within the earth's atmosphere and uses jet engine technology. Whereas Ballistic missiles travel well outside earth's atmosphere.



Statement 2 is not correct: The Defence

Research and Development Organisation (DRDO) of India **developed the land-based intercontinental ballistic missile known as Agni-V. The BrahMos is a medium-range Ramjet Supersonic Cruise Missile that may be fired from a submarine, ship, aircraft, or land. The BrahMos is undoubtedly the world's fastest supersonic cruise missile.**

Reference:

1. <https://www.britannica.com/technology/strategic-missile>
2. https://missilethreat.csis.org/country_tax/india/

89. Consider the following statements regarding mercury pollution:

1. Gold mining activity is a source of mercury pollution in the world.
2. Coal-based thermal power plants cause mercury pollution.
3. There is no known safe level of exposure to mercury.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

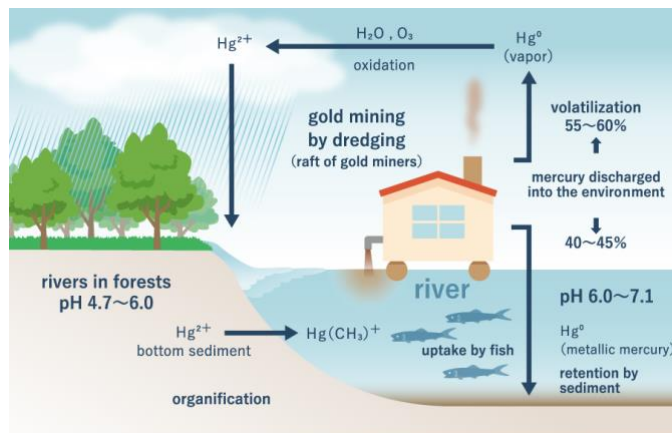
Ans: (c)

Option (c) is correct:

About Mercury Pollution:

- Mercury is used in **Artisanal Small-Scale Gold Mining (ASGM)**. The majority of the mercury emissions associated with the ASGM sector come from the burning of mercury-gold amalgam, **which is responsible for 38% of all anthropogenic mercury emissions to the atmosphere. (Statement 1 is correct)**

- Mercury is released into the atmosphere via the burning of coal and other fossil fuels. Because coal has far higher mercury content than other fossil fuels, coal-fired power stations frequently produce more mercury pollution than power plants that burn other fossil fuels. **(Statement 2 is correct)**
- There is no known safe level of exposure to mercury due to its extreme toxicity.** The ideal level of mercury in the body is zero because it has no physiological advantages for either children or adults. **(Statement 3 is correct)**



Reference:

- <https://www.epa.gov/international-cooperation/reducing-mercury-pollution-artisanal-and-small-scale-gold-mining>
- <https://www.nrdc.org/stories/fossil-fuels-dirty-facts>
- <https://www.who.int/news-room/fact-sheets/detail/mercury-and-health>

90. With reference to green hydrogen, consider the following statements:

- It can be used directly as a fuel for internal combustion.
- It can be blended with natural gas and used as fuel for heat or power generation.
- It can be used in the hydrogen fuel cell to run vehicles.

How many of the above statements are correct?

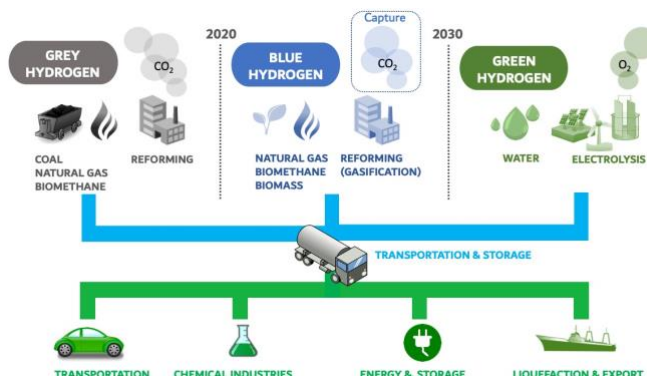
- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (c)

Option (c) is correct:

About Green Hydrogen:

- Green hydrogen is a renewable energy source that, unlike coal and oil, solely releases water vapour and leaves no residue in the air.
- Hydrogen, a zero-carbon fuel, can be used to power automobiles through both hydrogen internal combustion engines and hydrogen fuel cells. **In the same way that petrol is burned in an engine, hydrogen is also burned in internal combustion engines.** **(Statement 1 is correct)**



- **Clean hydrogen may be created and injected into natural gas pipelines to create blends that can be utilised to provide heat and power with fewer emissions than just natural gas. (Statement 2 is correct)**
- **Green hydrogen is being used to power fuel-cell vehicles.** This application of green hydrogen is one of the most often cited uses of the renewable energy source. **(Statement 3 is correct)**

Reference:

1. <https://www.iberdrola.com/sustainability/green-hydrogen>
2. <https://www.energy.gov/eere/fuelcells/hyblend-opportunities-hydrogen-blending-natural-gas-pipelines>
3. <https://www.azocleantech.com/article.aspx?ArticleID=1614>

91. Consider the following statements with reference to India:

1. According to the Micro, Small and Medium Enterprises Development (MSMED) Act, 2006', the 'medium enterprises' are those with investments in plant and machinery between 15 crore and 1925 crore.
2. All bank loans to the Micro, Small and Medium Enterprises qualify under the priority sector.

Which of the statements given above is/are correct?

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

Ans: (b)

Option (b) is correct:

Statement 1 is not correct: According to the **Micro, Small and Medium Enterprises Development (MSMED) Act, 2006'**, the 'medium enterprises' are those is one where the investment in plant, machinery, or equipment is **not greater than fifty crore rupees and the turnover is not greater than 250 crore rupees.**

Statement 2 is correct: The RBI works with banks to encourage them to lend money to priority economic sectors, including agriculture and related industries, education, affordable housing, and food for the less fortunate. **All bank loans to MSMEs that meet the requirements outlined therein are eligible to be categorised as priority sector lending.**

Reference:

1. <https://msme.gov.in/know-about-msme>
2. https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=11959

92. With reference to Central Bank digital currencies, consider the following statements:

1. It is possible to make payments in a digital currency without using the US dollar or SWIFT system.
2. A digital currency can be distributed with a condition programmed into it such as a time- frame for spending it.

Which of the statements given above is/are correct?

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

Ans: (c)

Option (c) is correct:

About Central Bank Digital Currencies:

Statement 1 is correct: A type of digital currency issued by a nation's central bank is known as a central bank digital currency (CBDC). They resemble cryptocurrencies, with the exception that the central bank sets their value, which is equivalent to the nation's fiat currency. Countries will be **able to transact bilaterally and without the need of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) or other comparable settlement systems in the direct exchange of digital currency.**

Statement 2 is correct: CBDC isn't a brand-new kind of money; rather, it's a type of central bank electronic cash that may be used by individuals and organisations to make payments. **Digital currency can be distributed with a condition programmed into it such as the time frame for spending it.**

Reference:

- <https://www.investopedia.com/terms/c/central-bank-digital-currency-cbdc.asp>

93. In the context of finance, the term 'beta' refers to

- (a) the process of simultaneous buying and selling of an asset from different platforms
 (b) an investment strategy of a portfolio manager to balance risk versus reward
 (c) a type of systemic risk that arises where perfect hedging is not possible
 (d) a numeric value that measures the fluctuations of a stock to changes in the overall stock market

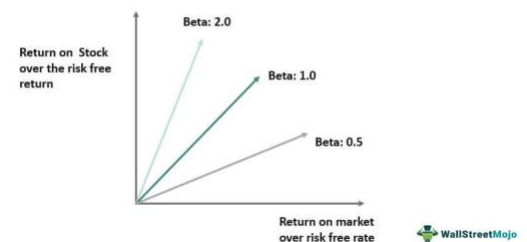
Ans: (d)

Option (d) is correct:

About Beta:

- **Beta numeric value that measures the fluctuations of a stock to changes in the overall stock market**, which is mostly employed in the capital asset pricing model (CAPM).
- It is a measurement of a security or portfolio's volatility or systematic risk in comparison to the market as a whole.
- The amount of risk that a stock will add to a (supposedly) diversified portfolio can only be roughly predicted using beta data about a specific stock.

Beta in Finance



Reference:

- <https://corporatefinanceinstitute.com/resources/valuation/what-is-capm-formula/>

94. Consider the following statements:

1. The Self-Help Group (SHG) programme was originally initiated by the State Bank of India by providing microcredit to the financially deprived.
2. In an SHG, all members of a group take responsibility for a loan that an individual member takes.
3. The Regional Rural Banks and Scheduled Commercial Banks support SHGs

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

Ans: (b)

Option (b) is correct:

About Self-Help Groups (SHGs):

- The Self-Help Group (SHG) programme was **originally initiated by National Bank for Agriculture and Rural Development (NABARD)** and began extensively marketing self-help groups in 1991–1992. It served as the actual launchpad for the "SHG movement." The Reserve Bank of India also permitted SHGs to open savings accounts in banks in 1993. **(Statement 1 is not correct)**
- Self Help Groups (SHGs) are small groups of poor people. The members of an SHG face similar problems. They provide collateral-free loans to groups of people who typically struggle to obtain loans from banks. In an SHG, **all members of a group take responsibility for a loan that an individual member takes.** Additionally, they use group leadership and conversations to resolve disputes. **(Statement 2 is correct)**
- **The Regional Rural Banks and Scheduled Commercial Banks support SHGs.** Indian financial institutions known as Regional Rural Banks (RRBs) are created with the purpose of offering banking services to rural communities. They are governed by the RBI and structured as scheduled commercial banks. Small enterprises and rural entrepreneurship have received backing from RRBs, which has helped create jobs in rural areas. **(Statement 3 is correct)**

Reference:

1. <https://www.findevgateway.org/sites/default/files/publications/files/mfg-en-paper-report-of-the-committee-on-financial-inclusion-jan-2008.pdf>
2. <https://www.nabard.org/ftcontent.aspx?id=492>

95. Consider the following statements:

Statement-I: India's public sector health care system largely focuses on curative care with limited preventive, promotive and rehabilitative care.

Statement-II: Under India's decentralized approach to health care delivery, the States are primarily responsible for organizing health services.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (b)

Option (b) is correct:

Statement 1 is correct: According to National Health Policy 2017 the public health care system in India is to improve health status through concerted policy action in all sectors and expand preventive, promotive, curative, palliative and rehabilitative services provided through the public health sector with focus on quality

Statement 2 is correct: The states are primarily in charge of planning health services under India's decentralised system for providing medical care. In the Indian Constitution health is a component of state subject as a part of the Seventh Schedule.

Reference:

1. <https://main.mohfw.gov.in/sites/default/files/9147562941489753121.pdf>
2. <https://www.commonwealthfund.org/international-health-policy-center/countries/india>

96. Consider the following statements:

Statement-I: According to the United Nations' World Water Development Report, 2022', India extracts more than a quarter of the world's groundwater withdrawal each year.

Statement-II: India needs to extract more than a quarter of the world's groundwater each year to satisfy the drinking water and sanitation needs of almost 18% of world's population living in its Territory.

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

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans: (c)

Option (c) is correct:

Statement 1 is correct: According to the United Nations' World Water Development Report 2022, India extracts more than a quarter of the world's groundwater withdrawal each year. This indicates that India has a significant reliance on groundwater resources for various purposes, including irrigation, drinking water, and industrial use.

Statement 2 is not correct: The requirement for **drinking water and sanitary facilities is only one factor in India's high water extraction rate.** A major amount of the water used in India goes for **irrigation in agriculture.** The high extraction rate is also a result of **ineffective water management and distribution infrastructure.** In India according to the Asian Water Development Outlook, 2016, almost 89% of groundwater extracted is used for irrigation.

Reference:

1. <https://www.unesco.org/reports/wwdr/2022/en>
2. <https://www.unwater.org/publications/un-world-water-development-report-2022>
3. <https://pib.gov.in/newsite/PrintRelease.aspx?relid=191196>

97. Consider the following statements:

1. According to the Constitution of India, the Central Government has a duty to protect States from internal disturbances.
2. The Constitution of India exempts the States from providing legal counsel to a person being held for preventive detention.
3. According to the Prevention of Terrorism Act, 2002, confession of the accused before the police cannot be used as evidence.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) All three (d) None

Ans: (a)

Option (a) is correct:

- **Statement 1 is correct:** As under article 355 of the Constitution, **it is the duty of the Union, i.e. the Central Government to protect every State against external aggression and internal disturbance** and to ensure that the government of every State is carried on in accordance with the provisions of this Constitution.
- **Statement 2 is not correct:** As per **Article 22, clause (3)** of the Constitution, exemption from providing legal counsel (among others) is provided under **two circumstances**, namely, **a person arrested is an enemy alien** for the time being and **a person detained under a law that provides for preventive detention.**

Clauses (1) and (2) of Article 22: Protection against arrest and detention in certain cases

Clause (1): No person who is arrested shall be detained in custody without being informed, as soon as may be, of the grounds for such arrest nor shall he be denied the right to consult, and to be defended by, a legal practitioner of his choice

Clause (2): Every person who is arrested and detained in custody shall be produced before the nearest magistrate within a period of twenty four hours of such arrest excluding the time necessary for the journey from the place of arrest to the court of the magistrate and no such person shall be detained in custody beyond the said period without the authority of a magistrate

- **Statement 3 is not correct:** The issue of confession by the accused person is provided under **Section 32 of the Prevention of Terrorism Act, 2002** and confession made to police **can be accepted as evidence.**

Reference:

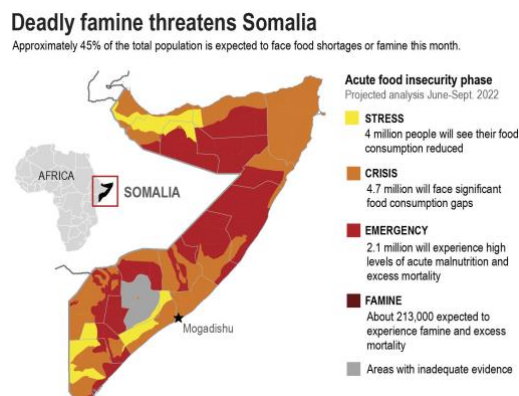
1. [https://indiankanoon.org/doc/978947/#:~:text=\(2\)%20A%20police%20officer%20shall,the%20police%20officer%20shall%20not](https://indiankanoon.org/doc/978947/#:~:text=(2)%20A%20police%20officer%20shall,the%20police%20officer%20shall%20not)

98. Which one of the following countries has been suffering from decades of civil strife and food shortages and was in news in the recent past for its very severe famine?
- (a) Angola (b) Costa Rica
 (c) Ecuador (d) Somalia

Ans: (d)

Option (d) is correct:

Among the given options, **Option (d) i.e. Somalia**, the Eastern African nation, has been suffering from decades of civil strife and food shortages and was in news in the recent past for its very severe famine. No other country among the given options meets all three situations which are **Severe Famine in the recent past along with decades of civil strife and food shortages.**



Reference:

1. <https://www.rescue.org/article/crisis-somalia-catastrophic-hunger-amid-drought-and-conflict>

99. Consider the following statements:
1. In India, the Biodiversity Management Committees are key to the realisation of the objectives of the Nagoya Protocol.
 2. The Biodiversity Management Committees have important functions in determining access and benefit sharing, including the power to levy collection fees on the access of biological resources within its jurisdiction.

Which of the statements given above is/are correct?

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

Ans: (c)

Option (c) is correct:

- **Statement 1 is correct:** As per the **Biodiversity Act of 2002, objectives under the protocol are implemented at the local level through Biodiversity Management Committees (BMCs).**
- **Statement 2 is correct:** Eco-restoration of the local biodiversity, management of sacred groves and sacred water bodies, conservation of traditional varieties/breeds of economically important plants and animals and **regulation of access to biological resources for commercial purposes** are some important responsibilities of BMCs. The **Biodiversity Act grants BMCs the independent powers to levy charges by way of collection fees from persons collecting biological resources from their territorial jurisdiction.**

India had enacted the **Biological Diversity Act in 2002** to implement the **Convention on Biodiversity**. The efforts from various countries under the aegis of the Convention resulted in Nagoya Protocol on Access and Benefit Sharing which entered into force on 12 October 2014. It provides the necessary wherewithal for the effective implementation of **Access and Benefit Sharing (ABS) provisions of the Convention**.

Reference:

1. <http://nbaindia.org/uploaded/pdf/Implementation%20of%20Nagoya%20Protocol%20in%20India.pdf>
2. <https://niua.in/csc/assets/pdf/key-documents/phase-2/Up-GreenC-and-BIO/Policy-paper-on-Biodiversity-Management-Committees.pdf>

100. Consider the following statements in respect of election to the President of India:

1. The members nominated to either House of the Parliament or the Legislative Assemblies of States are also eligible to be included in the Electoral College.
2. Higher the number of elective Assembly seats, higher is the value of vote of each MLA of that State.
3. The value of vote of each MLA of Madhya Pradesh is greater than that of Kerala.
4. The value of vote of each MLA of Puducherry is higher than that of Arunachal Pradesh because the ratio of total population to total number of elective seats in Puducherry is greater as compared to Arunachal Pradesh.

How many of the above statements are correct?

- (a) Only one (b) Only two
 (c) Only three (d) All four

Ans: (a)

Option (a) is correct:

- **Statement 1 is not correct:** As per **Article 54** of the Constitution, the President of India is elected by the Members of an Electoral College consisting of:
 - A. The **elected members** of both Houses of Parliament, and

- B. The **elected members** of the Legislative Assemblies of all States [including the National Capital Territory of Delhi and the Union Territory of Puducherry].
- The Members **nominated** to either House of Parliament or the Legislative Assemblies of States, including NCT of Delhi and Union Territory of Puducherry, **are not eligible to be included in the Electoral College.**
 - **Statement 2 is not correct:** Higher the number of elective Assembly seats, the higher the value of the vote of each MLA of that State is not always true as **it depends on the ratio of the total population to the total number of elective seats.**
 - **Statement 3 is not correct:** The value of the vote of each MLA of Madhya Pradesh is less than that of Kerala as **it depends on the ratio of total population to total number of elective seats.**
 - **Statement 4 is correct:** Based on the ratio of the total population to the total number of elective seats in the State **value of the vote of each MLA of Puducherry is higher than that of Arunachal Pradesh.**

References:

1. <https://pib.gov.in/PressReleasePage.aspx?PRID=1842456>
2. <https://eci.gov.in/files/file/14211-background-material-regarding-presidential-election-2022/?do=download>

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