

UPSC CSE Prelims Answer Key 2024 With Detail Explanation

Q1. How many delimitation Commissions have been constituted by the Government of India till December 2023?

- (a) One
- (b) Two
- (c) Three
- (d) Four

Ans. A



The correct answer is (d) Four.

According to the information provided in the search results, the Government of India has constituted **Delimitation Commissions four times in the past:**

- In 1952 under the Delimitation Commission Act, 1952.
- In 1963 under the Delimitation Commission Act, 1962.
- In 1972 under the Delimitation Act, 1972.
- In 2002 under the Delimitation Act, 2002.

The search results clearly state that "Delimitation commissions in India have been established on four occasions in the past, specifically in the years 1952, 1962, 1972, and 2002, following the enactment of the respective Delimitation Commission Acts."

Therefore, the Government of India has constituted four Delimitation Commissions till December 2023.




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Q2. The Constitution (71st Amendment) Act, 1992 amends the Eights Schedule to the Constitution to include which of the following languages?

1. Konkani
2. Manipuri
3. Nepali
4. Maithili

Select the correct answer using the code given below:

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

Ans. A

The correct answer is (a) 1, 2 and 3.

The Constitution (Seventy-first Amendment) Act, 1992 amended the Eighth Schedule to the Constitution to include the following languages:

- Konkani
- Manipuri (also known as Meitei)
- Nepali (also known as Gorkha Bhasa, Gorkhali, Gorkdhi, Gurkhiya, Khaskura, or Naipali)

Q3. Consider the following pairs:

Party	Its Leader
Bharatiya Jana Sangh	Dr. Shyama Prasad Mukherjee
Socialist Party	C. Rajagopalachari
Congress for Democracy	Jagjivan Ram
Swatantra Party	Acharya Narendra Dev

How many of the above are correctly matched?

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

Ans. b

To determine how many of the given pairs of political parties and their leaders are correctly matched, we need to review the historical leadership of each party.

- **Bharatiya Jana Sangh** - Dr. Shyama Prasad Mukherjee: Correct. Dr. Shyama Prasad Mukherjee

was indeed the founder and the first leader of the Bharatiya Jana Sangh.

- **Socialist Party** - C. Rajagopalachari: Incorrect. The Socialist Party was led by leaders like Ram Manohar Lohia and Jayaprakash Narayan. C. Rajagopalachari was associated with the Swatantra Party.
- **Congress for Democracy** - Jagjivan Ram: Correct. Jagjivan Ram was a prominent leader of the Congress for Democracy, a party he founded after breaking away from the Indian National Congress.
- **Swatantra Party** - Acharya Narendra Dev: Incorrect. Acharya Narendra Dev was a prominent leader in the socialist movement in India, associated with the Congress Socialist Party. The Swatantra Party was founded by C. Rajagopalachari.

So, reviewing the pairs:

Bharatiya Jana Sangh - Dr. Shyama Prasad Mukherjee: Correct

Socialist Party - C. Rajagopalachari: Incorrect

Congress for Democracy - Jagjivan Ram: Correct

Swatantra Party - Acharya Narendra Dev: Incorrect

Therefore, only two pairs are correctly matched.

The correct answer is: (b) Only two



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Q4. Which of the following statements are correct about the constitution of India?

1. Powers of the Municipalities are given in Part IX A of the Constitution.
2. Emergency provisions are given in Part XVIII of the Constitution.
3. Provisions related to the amendment of the constitution are given in Part XX of the Constitution.

Select the answer using the code given below:

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

Ans. a

The correct answer is (a) 1 and 2 only.

- **Powers of the Municipalities are given in Part IX A of the Constitution:** This statement is correct. Part IX A of the Constitution deals with the Municipalities and the powers they have.
- **Emergency provisions are given in Part XVIII of the Constitution:** This statement is also correct. Part XVIII of the Constitution outlines the emergency provisions, including the declaration of national emergencies and the suspension of certain fundamental rights.
- **Provisions related to the amendment of the constitution are given in Part XX of the Constitution:** This statement is incorrect. The provisions related to the amendment of the Constitution are actually given in Part XX of the Constitution, which includes Articles 368 to 371, detailing the process and requirements for amending the Constitution.

Q5. Which one of the following statements is correct as per the Constitution of India?

- (a) Inter-State trade and commerce is a State subject under the State List.
- (b) Inter-State migration is a State subject under the State List.
- (c) Inter-State quarantine is a Union subject under the Union List.
- (d) Corporation tax is a State subject under the State List.

Ans. c

The correct answer is (c) Inter-State quarantine is a Union subject under the Union List.

- Inter-State quarantine is listed under entry 72 of the Union List in the Seventh Schedule of the Constitution of India

Q6. Under which of the following Articles of the Constitution of India, has the Supreme Court of India placed the Right to Privacy?

- (a) Article 15
- (b) Article 16
- (c) Article 19
- (d) Article 21

Ans. d

The correct answer is (d) Article 21.

- The Supreme Court of India has placed the Right to Privacy under Article 21 of the Constitution of India. This is stated in the landmark judgment of the nine-judge bench in the case of Justice K.S. Puttaswamy (Retd.) and Anr. vs Union of India and Ors. on August 24, 2017. The judgment explicitly holds that the right to privacy is protected as an intrinsic part of the right to life and personal liberty under Article 21 and as a part of the freedoms guaranteed by Part III of the Constitution.

Q7. What are the duties of the Chief of Defence Staff (CDS) as Head of the Department of Military Affairs?

1. Permanent Chairman of Chiefs of Staff Committee
2. Exercise military command over the three Service Chiefs
3. Principal Military Advisor to Defence Minister on all tri-service matters

Select the correct answer using the code given below:

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

Ans. d

The correct answer is (d) 1 and 3 only.

The Chief of Defence Staff (CDS) as Head of the Department of Military Affairs (DMA) has the following duties:

- **Permanent Chairman of Chiefs of Staff Committee:** The CDS acts as the permanent Chairman of the Chiefs of Staff Committee, which includes the three service chiefs as members. This role involves ensuring inter-service integration and coordination.
- **Principal Military Advisor to Defence Minister on all tri-service matters:** The CDS serves as the Principal Military Advisor to the Defence Minister on all matters related to the three services, ensuring that the Defence Minister is well-informed and advised on tri-service issues.

However, the CDS does not exercise military command over the three Service Chiefs. The Service Chiefs continue to advise the Defence Minister on matters exclusively concerning their respective services, and the CDS does not have operational command authority over the forces.

Q8. Operations undertaken by the Army towards upliftment of the local population in remote areas to include addressing of their basic needs is called:

- (a) Operations Sankalp
(b) Operation Maitri
(c) Operation Sadbhavana
(d) Operation Madad

Ans. c

The correct answer is (c) Operation Sadbhavana.

- **Operation Sadbhavana** is a term used to describe the humanitarian and development activities undertaken by the Indian Army to uplift the local population in remote areas. These activities include addressing the basic needs of the local population, such as providing medical care, education, and infrastructure development



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Q9. The longest border between any two countries in the world is between:

- (a) Canada and the United States of America
- (b) Chile and Argentina
- (c) China and India
- (d) Kazakhstan and Russian Federation

Ans. a

The correct answer is (a) Canada and the United States of America.

According to the information provided in the search results, the longest border between any two countries in the world is the border between Canada and the United States of America.

Specifically:

- The Canada-United States border is approximately 8,891 kilometers (5,525 miles) long, making it the longest international border in the world.
- The Russia-Kazakhstan border is the second longest, stretching approximately 7,644 kilometers (4,750 miles).
- The Argentina-Chile border is the third longest, at around 6,691 kilometers (4,160 miles).

Therefore, the longest border between any two countries in the world is between Canada and the United States of America.

Q10. Which of the following statements about the Ethics Committee in the Lok Sabha are correct?

1. Initially it was an ad-hoc Committee.
2. Only a Member of the Lok Sabha can make a complaint relating to unethical conduct of a member of the Lok Sabha.
3. This Committee cannot take up any matter which is sub-judice.

Select the answer using the code given below:

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

Ans. b

The correct answer is (b) 2 and 3 only.

- **Initially it was an ad-hoc Committee:** The Lok Sabha Ethics Committee was initially an ad-hoc Committee, established in 2000 by the then Speaker, G M C Balayogi. It became a permanent part of the House only in 2015.
- **Only a Member of the Lok Sabha can make a complaint relating to unethical conduct of a member of the Lok Sabha:** This statement is correct. Only a Member of the Lok Sabha can make a complaint to the Ethics Committee regarding the unethical conduct of another Member of the Lok Sabha.
- **This Committee cannot take up any matter which is sub-judice:** The Ethics Committee does not entertain complaints based only on media reports or on matters that are sub-judice. This means that the Committee does not take up any matter that is currently under judicial consideration.

The statement "1 and 3 only" is incorrect because the Ethics Committee was initially an ad-hoc Committee, but it did not become a permanent part of the House because of the matter being sub-judice.

Q11. Who was the Provisional President of the Constituent Assembly before Dr. Rajendra Prasad took over?

- (a) C. Rajagopalachari
- (b) Dr. B.R. Ambedkar
- (c) T.T. Krishnamachari
- (d) Dr. Sachchidananda Sinha

Ans. d

The correct answer is (d) Dr. Sachchidananda Sinha.

According to the information provided in the search results:

- Dr. Sachchidananda Sinha was elected as the first temporary Chairman of the Constituent Assembly when it held its first meeting on 9th December 1946.
- Dr. Rajendra Prasad was later elected as the permanent President of the Constituent Assembly on 11th December 1946, just two days after the first meeting.
- The search results clearly state that "Dr. Sachchidananda Sinha was appointed as the temporary chairman during its first meeting" of the Constituent Assembly.

Therefore, Dr. Sachchidananda Sinha served as the Provisional/Temporary President of the Constituent Assembly before Dr. Rajendra Prasad was elected as the permanent President.

Q12. With reference to the Government of India Act, 1935, consider the following statements:

1. It provided for the establishment of an All India Federation based on the union of the British Indian Provinces and Princely States.
2. Defence and Foreign Affairs were kept under the control of the federal legislature.

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

The correct answer is (a) 1 only.

- **It provided for the establishment of an All India Federation based on the union of the British Indian Provinces and Princely States:** This statement is correct. The Government of India Act, 1935, provided for the establishment of an All India Federation, which was to be formed by the union of the British Indian Provinces and Princely States.
- **Defence and Foreign Affairs were kept under the control of the federal legislature:** This statement is incorrect. Defence and foreign affairs were not kept under the control of the federal legislature. The Act divided the powers between the Centre and units in terms of three lists: Federal List, Provincial List, and the Concurrent List. Defence and foreign affairs were part of the Federal List, which was under the control of the Governor-General, not the federal legislature.

Therefore, only statement 1 is correct, and statement 2 is incorrect.

Q13. Which one of the following is a work attributed to playwright Bhasa?

- (a) Kavyalankara
- (b) Natyashastra
- (c) Madhyama vyayoga
- (d) Mahabhashya

Ans. c

The correct answer is (c) Madhyama vyayoga.

- Bhasa is a renowned Sanskrit playwright who lived in ancient India. His works are known for their literary merit and historical significance. Madhyama vyayoga is one of his plays, which is based on the Mahabharata.

Q14. Sanghabhuti, an Indian Buddhist monk, who travelled to China at the end of the fourth century AD, was the author of a commentary on:

- (a) Prajnaparamita Sutra
- (b) Visuddhimagga
- (c) Sarvastivada Vinaya
- (d) Lalitavistara

Ans. c

The correct answer is (c) Sarvastivada Vinaya.

According to the information provided in the search results:

- Sanghabhuti was an Indian Buddhist monk who traveled to China at the end of the fourth century AD.
- Sanghabhuti was the author of a commentary on the Sarvastivada Vinaya, which is a text on the monastic rules and regulations of the Sarvastivada school of Buddhism.

Q15. Consider the following properties included in the World Heritage List released by UNESCO:

1. Shantiniketan
2. Rani-ki-Vav
3. Sacred Ensembles of the Hoysalas
4. Mahabodhi Temple Complex at Bodhgaya

How many of the above properties were included in 2023?

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

Ans. d

Explanation

The properties mentioned in the query are all part of the UNESCO World Heritage List. However, the provided sources do not mention the inclusion of Rani-ki-Vav and Mahabodhi Temple Complex at Bodhgaya in the 2023 inscriptions. Therefore, only two properties, Santiniketan and Sacred Ensembles of the Hoysalas, were included in the 2023 inscriptions.

Q16. As per Article 368 of the Constitution of India, the Parliament may amend any provision of the Constitution by way of:

1. Addition
2. Variation
3. Repeal

Select the correct answer using the code given below:

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

Ans. d

Article 368 of the Constitution of India empowers the Parliament to amend the Constitution by way of addition, variation, or repeal of any provision. Therefore, all three options—addition, variation, and repeal—are included in the amending powers of the Parliament under Article 368.

Q.17. Consider the following countries:

1. Italy
2. Japan
3. Nigeria
4. South Korea
5. south Africa

Which of the above countries are frequently mentioned in the media for their low birth rates, or ageing population or declining population?

- (a) 1, 2 and 4
- (b) 1, 3 and 5
- (c) 2 and 4 only
- (d) 3 and 5 only

Ans.a

The correct answer is (a) 1, 2 and 4.

Italy, Japan, and South Korea are frequently mentioned in the media for their low birth rates, ageing populations, or declining populations.

- **Italy:** Known for its ageing population and low birth rate, which have led to concerns about economic growth and sustainability.
- **Japan:** Has one of the world's oldest populations and one of the lowest birth rates, leading to significant demographic challenges.
- **South Korea:** Faces similar issues with a low birth rate and a rapidly ageing population, raising concerns about future economic and social impacts.

Nigeria and South Africa do not typically fall into this category, as they have higher birth rates and younger populations.

Q.18. Which of the following statements are correct in respect of a Money Bill in the Parliament?

1. Article 109 mentions special procedure in respect of Money Bills.
2. A Money Bill shall not be introduced in the Council of States.
3. The Rajya Sabha can either approve the Bill or suggest changes but cannot reject it.
4. Amendments to a Money Bill suggested by the Rajya Sabha have to be accepted by the Lok Sabha.

Select the answer using the code given below:

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

Ans.C

The correct answer is (c) 1, 2, and 3.

- Article 109 mentions special procedure in respect of Money Bills, which includes the requirement for the President's recommendation and the Lok Sabha's approval.
- A Money Bill shall not be introduced in the Council of States (Rajya Sabha). It can only be introduced in the Lok Sabha.
- The Rajya Sabha can either approve the Bill or suggest changes but cannot reject it. If the Rajya Sabha suggests changes, the Lok Sabha can accept or reject them

Q19. Which of the following is/are correctly matched in terms of equivalent rank in the three services of Indian Defence forces?

Rank in Army	Rank in Airforce	Rank in Navy
Brigadier	Air Commodore	Commander
Major General	Air Vice Marshal	Vice Admiral
Major	Squadron Leader	Lieutenant commander

Lieutenant Colonel	Group Captain	Captain
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Select the correct answer using the code given below:

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

Ans. c

The correct answer is (c) 2, 3, and 4.

Here are the correct matches:

- Brigadier - Air Commodore - Commodore
- Major General - Air Vice Marshal - Vice Admiral
- Major - Squadron Leader - Lieutenant Commander
- Lieutenant Colonel - Group Captain - Captain

Q20. The North Eastern Council (NEC) was established by the North Eastern Council Act, 1971. Subsequent to the amendment of NEC Act in 2002, the Council comprises which of the following members?

1. Governor of the Constituent State
2. Chief Minister of the Constituent State
3. Three Members to be nominated by the President of India
4. The Home Minister of India

Select the Correct answer using the code given below:

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

Ans. a

The correct answer is (a) 1, 2 and 3 only.

According to the North Eastern Council (NEC) Act, 2002, the members of the North Eastern Council comprise:

- The Governors of the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The Chief Ministers of the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- Three members to be nominated by the President of India.

The Home Minister of India is not a member of the North Eastern Council.

Q21. Consider the following statements regarding 'Nari Shakti Vandan Adhiniyam':

1. Provisions will come into effect from the 18th Lok Sabha.
2. This will be in force for 15 years after becoming an Act.
3. There are provisions for the reservation of seats for scheduled Castes Women within the quota reserved for the Scheduled Castes.

Which of the statements given above are correct?

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

Ans. d

The correct answer is (d) 1 and 3.

- **Provisions will come into effect from the 18th Lok Sabha:** This statement is incorrect. There is no mention of the 18th Lok Sabha in the context of 'Nari Shakti Vandan Adhiniyam'.
- **This will be in force for 15 years after becoming an Act:** This statement is correct. The provisions of the Act will remain in force for 15 years after it becomes an Act.
- **There are provisions for the reservation of seats for scheduled Castes Women within the quota reserved for the Scheduled Castes:** This statement is correct. The Act likely includes provisions for the reservation of seats for scheduled Castes Women within the quota reserved for the Scheduled Castes

Q22. Which of the following statements about 'Exercise Mitra Shakti-2023' are correct?

1. This was a joint military exercise between India and Bangladesh.
2. It commenced in Aundh (Pune).
3. Joint response during counter-terrorism operations was a goal of this operation.
4. Indian Air Force was a part of this exercise

Select the answer using the code given below:

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

Ans. b

The correct answer is (b) 1, 2 and 4.

- **This was a joint military exercise between India and Bangladesh:** This statement is correct. Exercise Mitra Shakti is a joint military exercise between India and Bangladesh.
- **It commenced in Aundh (Pune):** This statement is correct. Exercise Mitra Shakti-2023 commenced in Aundh (Pune).
- **Joint response during counter-terrorism operations was a goal of this operation:** This statement is correct. The exercise aimed to enhance interoperability and joint response during counter-terrorism operations.

- **Indian Air Force was a part of this exercise:** This statement is correct. The Indian Air Force participated in Exercise Mitra Shakti-2023.

Q23. A Writ of Prohibition is an order issued by the Supreme Court or High Courts to:

- (a) a government officer prohibiting him from taking a particular action.
- (b) the parliament/Legislative Assembly to pass a law on Prohibition.
- (c) the lower court prohibiting continuation of proceedings in a case
- (d) the Government prohibiting it from following an unconstitutional policy

Ans. c

The correct answer is (c) the lower court prohibiting continuation of proceedings in a case.

- A Writ of Prohibition is an order issued by the Supreme Court or High Courts to prevent a lower court or tribunal from proceeding with a case that falls outside its jurisdiction or violates the principles of natural justice

Q24. Consider the following statements:

1. It is the Governor of the State who recognizes and declares any community of that State as a Scheduled Tribe.
2. A community declared as a Scheduled Tribe in a State need not be so in another State.

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

The correct answer is (c) Both 1 and 2.

- **It is the Governor of the State who recognizes and declares any community of that State as a Scheduled Tribe:** This statement is incorrect. The President of India, after consultation with the Governor of the State, specifies the tribes or tribal communities as Scheduled Tribes through a public notification.
- **A community declared as a Scheduled Tribe in a State need not be so in another State:** This statement is correct. The list of Scheduled Tribes is State/UT specific, and a community declared as a Scheduled Tribe in a State need not be so in another State.

Q25. With reference to Union Budget, consider the following statements:

1. The Union Finance Minister on behalf of the Prime Minister lays the Annual Financial Statement before both the House of Parliament.
2. At the Union level, no demand for a grant can be made except on the recommendation of the President of India.

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

The correct answer is (c) Both 1 and 2.

- **The Union Finance Minister on behalf of the Prime Minister lays the Annual Financial Statement before both the House of Parliament:** This statement is correct. The Union Finance Minister presents the Annual Financial Statement, which is the comprehensive financial plan for the government, to both the Houses of Parliament.
- **At the Union level, no demand for a grant can be made except on the recommendation of the President of India:** This statement is also correct. According to Article 112 of the Constitution, the President of India recommends the Annual Financial Statement to both Houses of Parliament

Q26. Who of the following is the author of the books “The India Way” and “Why Bharat Matters”?

- (a) Bhupender Yadav
- (b) Nalin Mehta
- (c) Shashi Tharoor
- (d) Subrahmanyam Jaishankar

Ans. d

The author of "The India Way" and "Why Bharat Matters" is Subrahmanyam Jaishankar, who is a prominent Indian diplomat and currently the Minister of External Affairs of India.

Q27. Consider the following pairs:

Country	Reason for being in the news
Argentina	Worst economic crisis
Sudan Forces	War between the country’s regular army and paramilitary
Turkey	Rescinded its membership of NATO

How many of the pairs given above are correctly matched?

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

Ans. b

The correct answer is (b) Only two pairs.

- **Argentina** - Worst economic crisis: This pair is correctly matched. Argentina is indeed known for its economic crisis.
- **Sudan** - War between the country's regular army and paramilitary: This pair is correctly matched. Sudan has experienced conflicts between its regular army and paramilitary forces.
- **Turkey** - Rescinded its membership of NATO: This pair is correctly matched. Turkey did indeed rescind its membership of NATO.

The pairs are correctly matched, but there are only two pairs.

Q28. Consider the following statements:

Statement-I: Sumed pipeline is a strategic route for Persian Gulf oil and natural gas shipments to Europe.

Statement-II: Sumed pipeline connects the Red Sea with the Mediterranean Sea.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. b

The correct answer is (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I.

Explanation:

Statement-I: Sumed pipeline is a strategic route for Persian Gulf oil and natural gas shipments to Europe.

- **This statement is correct.** The search results indicate that the Suez Canal and the SUMED Pipeline are strategic routes for Persian Gulf oil and natural gas shipments to Europe and North America.

Statement-II: Sumed pipeline connects the Red Sea with the Mediterranean Sea.

- **This statement is also correct.** The search results mention that the SUMED Pipeline transports crude oil through Egypt from the Red Sea to the Mediterranean Sea.
- However, Statement-II does not directly explain Statement-I. The fact that the SUMED Pipeline connects the Red Sea to the Mediterranean Sea does not by itself explain why it is a strategic route for Persian Gulf oil and gas shipments to Europe. The strategic importance of the SUMED Pipeline is a separate fact.

Therefore, the correct answer is (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I.

Q29. Consider the following statements:

1. The Red Sea receives very little precipitation in any form.
2. No water enters the Red Sea from rivers.

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

The correct answer is (c) Both 1 and 2.

- **The Red Sea receives very little precipitation in any form:** This statement is correct. The Red Sea region receives very little precipitation in any form, as mentioned in the search results.
- **No water enters the Red Sea from rivers:** This statement is also correct. No water enters the Red Sea from rivers, and the water in the Red Sea is replenished through evaporation and inflow from the Gulf of Aden.

Both statements are correct, indicating that the Red Sea receives little precipitation and no water enters it from rivers.

Q30. According to the Environmental Protection Agency (EPA), which one of the following is the largest source of Sulphur dioxide emissions?

- (a) Locomotives using fossil fuels
- (b) Ships using fossil fuels
- (c) Extraction of metals from ores
- (d) Power plants using fossil fuels.

Ans.d

The largest source of sulfur dioxide emissions is (d) Power plants using fossil fuels. According to the EPA, fossil fuel combustion at power plants accounts for 73% of sulfur dioxide emissions, while other industrial facilities account for 20%

Q31. Consider the following statements:

Statement-I: If the United States of America (USA) were to default on its debt, holders of US Treasury Bonds will not be able to exercise their claims to receive payment.

Statement-II: The USA Government debt is not backed by any hard assets, but only by the faith of the Government

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. b

Statement-I: If the United States of America (USA) were to default on its debt, holders of US Treasury Bonds will not be able to exercise their claims to receive payment.

Statement-II: The USA Government debt is not backed by any hard assets, but only by the faith of the Government

Based on the information from the search results, both Statement-I and Statement-II are correct.

However, Statement-II does not explain Statement-I.

The United States has never defaulted on its obligations, and the repercussions of a default are unknown but would likely have catastrophic consequences both in the United States and in global markets

- If the United States were to default on its debt, holders of US Treasury Bonds would not be able to receive payment
- The USA Government debt is not backed by any hard assets but is instead backed by the faith and creditworthiness of the government
- The US government borrows by issuing Treasury bills, notes, and bonds, and these debt instruments are considered safe assets or debt securities
- The US government's debts are sold as bonds and securities to private investors, corporations, and other governments
- The US Treasury market, where these debts are traded, is the primary source of financing for the government and the largest debt market in the world

In summary, both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I.

Therefore, the correct answer is (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I.

Q32. Consider the following statements:

Statement-I: Syndicated lending spreads the risk of borrower default across multiple lenders.

Statement-II: The syndicated loan can be fixed amount/lump sum of funds, but cannot be a credit line

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. a

Explanation:

Statement-I: Syndicated lending spreads the risk of borrower default across multiple lenders.

- **This statement is correct.** Loan syndication involves a group of lenders pooling their funds to provide a large loan to a single borrower. This diversifies the credit risk among the lenders, reducing the exposure of any single lender to potential default by the borrower.

Statement-II: The syndicated loan can be fixed amount/lump sum of funds, but cannot be a credit line.

- **This statement is also correct.** Syndicated loans are typically structured as a fixed amount or lump sum of funds provided to the borrower, rather than as a credit line or revolving facility.

The loan agreement specifies the total loan amount, repayment schedule, interest rate, and other terms that are agreed upon by the syndicate of lenders. Therefore, Statement-II explains how the structure of a syndicated loan, as a fixed amount rather than a credit line, helps achieve the risk diversification described in Statement-I.

Q33. Consider the following statements in respect of the digital rupee:

1. It is a sovereign currency issued by the Reserve Bank of India RBI alignment with its monetary policy.
2. It appears as a liability on the RBI's balance sheet.
3. It is insured against inflation by its very design.
4. It is freely convertible against commercial bank money and cash.

Which of the statements given above are correct?

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

Ans.a

Explanation:

- **It is a sovereign currency issued by the Reserve Bank of India (RBI) in alignment with its monetary policy.:** This statement is correct. The Digital Rupee (e₹) is a tokenized digital version of the Indian Rupee, issued by the Reserve Bank of India as a central bank digital currency (CBDC). It is designed to be in alignment with the RBI's monetary policy.
- **It appears as a liability on the RBI's balance sheet.:** This statement is also correct. As a CBDC, the Digital Rupee is a digital form of physical currency and appears as a liability (currency in circulation) on the Reserve Bank of India's balance sheet.
- **It is insured against inflation by its very design.:** This statement is incorrect. The Digital Rupee is designed to be a digital form of physical currency, but it does not have any inherent insurance against inflation. The RBI's monetary policy and inflation management are separate from the design of the Digital Rupee.
- **It is freely convertible against commercial bank money and cash.:** This statement is incorrect. The Digital Rupee is designed to be exchangeable at par with cash, but it is not freely convertible against commercial bank money. It is a digital form of physical currency and is intended to be used as a medium of exchange, but it is not a direct substitute for commercial bank money.

Q34. With reference to ancient India, Gautama Buddha was generally known by which of the following epithets?

1. Nayaputta
2. Shakyamuni
3. Tathagata

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1, 2 and 3
- (d) None of the above are epithets of Gautama Buddha

Ans. b

Gautama Buddha was known by several epithets, including Shakyamuni and Tathagata. Shakyamuni refers to his birth name, while Tathagata is one of the ten epithets that describe his virtues and powers

Q35. Consider the following information :

Archaeological Site	State	Description
Chandraketurgh	Odisha	Trading Port town
Inamgaon	Maharashtra	Chalcolithic site
Mangadu	Kerala	Megalithic site
Salihundam	Andhra Pradesh	Rock-cut cave shrines

In which of the above rows is the given information correctly matched ?

- (a) 1 and 2
- (b) 2 and 3
- (c) 3 and 4
- (d) 1 and 4

Ans. b

The correct matching of the evidence found with the archaeological site is:

- Millets, cattle, sheep, goat, and pig: Inamgaon (Maharashtra) - Chalcolithic site
- Wheat and lentil: Mangadu (Kerala) - Megalithic site
- Hoof marks on clay surface: Salihundam (Andhra Pradesh) - Rock-cut cave shrines

Therefore, the correct answer is (b) 2 and 3

Q36. Who of the following rulers of medieval India gave permission to the Portuguese to build a fort at Bhatkal?

- (a) Krishnadevaraya
- (b) Narasimha Saluva
- (c) Muhammad Shah III
- (d) Yusuf Adil Shah

Ans. a

The correct answer is (a) Krishnadevaraya. Krishnadevaraya, the ruler of the Vijayanagar Empire, granted permission to the Portuguese to build a fort at Bhatkal

Q.37. With reference to revenue collection by Cornwallis, statements: consider the following

1. Under the Ryotwari Settlement of revenue collection, the peasants were exempted from revenue payment in case of had harvests or natural calamities.
2. Under the Permanent Settlement in Bengal, if the Zamindar failed to pay his revenues to the state, on or before the fixed date, he would be removed from his Zamindari.

Which of the statements given above is ware correct?

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

Ans. d

The correct answer is (d) Neither 1 nor 2.

- Under the Ryotwari Settlement of revenue collection, the peasants were exempted from revenue payment in case of bad harvests or natural calamities. Incorrect: The Ryotwari System did not provide such exemptions.
- Under the Permanent Settlement in Bengal, if the Zamindar failed to pay his revenues to the state, on or before the fixed date, he would be removed from his Zamindari. Incorrect: The Permanent Settlement did not provide for the removal of Zamindars for non-payment of revenue. Instead, if the Zamindar failed to pay, his land could be sold to another Zamindar

Q38. Consider the following statements:

1. There are parables in Upanishads.
2. Upanishads were composed earlier than the Puranas

Which of the statements given above is/are correct?

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

Ans. c

The correct answer is (c) Both 1 and 2.

- **Parables in Upanishads:** Yes, Upanishads contain philosophical ideas and parables that explore concepts like the nature of the self (Atman) and the ultimate reality (Brahman).
- **Upanishads composed earlier than Puranas:** Yes, the Upanishads were composed before the Puranas. The Upanishads are considered to be the foundation of Hindu philosophical thought

and were composed during the Vedic period, while the Puranas were composed later, between the 3rd century BCE and the 18th century CE.

Q39. Consider the following statements:

1. India is a member of the International Grains Council.
2. A country needs to be a member of the International Grains Council for exporting or importing rice and wheat.

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

India is indeed a member of the International Grains Council (IGC). However, the IGC is not a requirement for a country to export or import rice and wheat. The IGC is an intergovernmental organization that promotes cooperation in the global grain trade, but membership is not a necessary condition for trading grains.

Q40. Which one of the following was the latest inclusion in the Intangible Cultural Heritage List of UNESCO?

- (a) Chhau dance
- (b) Durga puja
- (c) Garba dance
- (d) Kumbh mela

Ans. c

The latest inclusion in the Intangible Cultural Heritage List of UNESCO is "Garba of Gujarat" in 2023

Q41. Consider the following statements:

Statement-I: There is instability and worsening security situation in the Sahel region.

Statement-II: There have been military takeovers/coups d'état in several countries of the Sahel region in the recent past.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. a

The correct answer is (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.

- **Statement-I is correct** because the Sahel region has experienced a worsening security situation due to the spread of Islamist terrorism and organized crime. This is evident from the increasing number of terrorist attacks and the deteriorating humanitarian situation in the region.
- **Statement-II is also correct** because there have been several military takeovers and coups d'état in the Sahel region, particularly in countries like Mali, Chad, Guinea, and Burkina Faso. These coups have contributed to the instability and political uncertainty in the region, making it difficult to address the security challenges effectively.

Q42. Consider the following statements:

Statement-I: India does not import apples from the United States of America.

Statement-II: In India, the law prohibits the import of Genetically Modified food without the approval of the competent authority.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. b

Explanation:

- **Statement-I is incorrect** because India does import apples from the United States of America. There is no restriction on importing apples from the USA.
- **Statement-II is correct** because the import of Genetically Modified (GM) food products in India requires prior approval from the competent authority, which is the Genetic Engineering Approval Committee (GEAC) or the Food Safety and Standards Authority of India (FSSAI)

Q43. With reference to the Speaker of the Lok Sabha, consider the following statements:

While any resolution for the removal of the Speaker of the Lok Sabha is under consideration

1. He/She shall not preside
2. He/She shall not have the right to speak
3. He/She shall not be entitled to vote on the resolution in the first instance.

Which of the statements given above is/are correct

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

Ans. a

While any resolution for the removal of the Speaker of the Lok Sabha is under consideration:

- He/She shall not preside: The Speaker does not preside over the sitting where the resolution is being considered.

The other options are incorrect:

- He/She shall not have the right to speak: The Speaker can still speak on the resolution.
- He/She shall not be entitled to vote on the resolution in the first instance: The Speaker's vote is used to break a deadlock only when the two sides receive equal numbers of votes.

Therefore, option (a) is the correct answer.

Q44. With reference to the Indian Parliament, consider the following statements:

1. A bill pending in the Lok Sabha lapses on its dissolution
2. A bill passed by the Lok Sabha and pending in the Rajya Sabha lapses on the dissolution of the Lok Sabha.
3. A bill in regard to which the President of India notified his/her intention to summon the Houses to a joint sitting lapses on the dissolution of the Lok Sabha.

Which of the statements given above is/are correct?

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

Ans. b

The correct answer is (b) 1 and 2.

- **A bill pending in the Lok Sabha lapses on its dissolution:** This is correct. A bill pending in the Lok Sabha lapses when the Lok Sabha is dissolved.
- **A bill passed by the Lok Sabha and pending in the Rajya Sabha lapses on the dissolution of the Lok Sabha:** This is also correct. A bill passed by the Lok Sabha and pending in the Rajya Sabha lapses when the Lok Sabha is dissolved.
- **A bill in regard to which the President of India notified his/her intention to summon the Houses to a joint sitting lapses on the dissolution of the Lok Sabha:** This is incorrect. A bill in regard to which the President of India notified his/her intention to summon the Houses to a joint sitting does not lapse on the dissolution of the Lok Sabha. Instead, it is taken up in the joint sitting of both Houses.

Therefore, options (b) 1 and 2 only are correct.

Q45. With reference to the Parliament of India, consider the following statements:

1. Prorogation of a House by the President of India does not require the advice of the Council of Ministers.
2. Prorogation of a House is generally done after the House is adjourned sine die but there is no bar to the President of India prorogating the House which is in session.

3. Dissolution of the Lok Sabha is done by the President of India who, save in exceptional circumstances, does so on the advice of the Council of Ministers

Which of the statements given above is/are correct?

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

Ans. c

The processes of prorogation and dissolution of the Indian Parliament are critical functions carried out by the President of India. These actions have specific constitutional and procedural implications. This report examines the correctness of three statements related to these processes.

Analysis of Statements

Prorogation of a House by the President of India does not require the advice of the Council of Ministers:

- **This statement is incorrect.** The President of India acts on the advice of the Council of Ministers in matters of prorogation
- The President's actions in this regard are not unilateral and require the Council's input.

Prorogation of a House is generally done after the House is adjourned sine die but there is no bar to the President of India prorogating the House which is in session:

- This statement is correct. Prorogation typically occurs after the House is adjourned sine die, but the President has the authority to prorogue the House even while it is in session
- This flexibility allows the President to manage parliamentary sessions effectively.

Dissolution of the Lok Sabha is done by the President of India who, save in exceptional circumstances, does so on the advice of the Council of Ministers:

- **This statement is correct.** The President dissolves the Lok Sabha on the advice of the Council of Ministers, except in exceptional circumstances
- This ensures that the dissolution process is aligned with the executive branch's recommendations.

Conclusion

Based on the analysis, the correct statements are:

- **Statement 2:** Prorogation of a House is generally done after the House is adjourned sine die but there is no bar to the President of India prorogating the House which is in session.
- **Statement 3:** Dissolution of the Lok Sabha is done by the President of India who, save in exceptional circumstances, does so on the advice of the Council of Ministers.

Therefore, the correct answer is:

(c) 2 and 3

Q46. Consider the following statements:

Statement-I: The European Parliament approved The Net-Zero Industry Act recently.

Statement-II: The European Union intends to achieve carbon neutrality by 2040 and therefore aims to develop all of its own clean technology by that time.

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

- (a) Both Statement-I and Statement-II are correct and Statement-I Statement-II explains
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. c

The European Parliament recently approved the Net-Zero Industry Act (NZIA), a significant legislative step aimed at bolstering the European Union's (EU) clean technology production. This report examines the accuracy of two statements related to this Act and the EU's carbon neutrality goals.

Analysis of Statements

Statement-I: The European Parliament approved The Net-Zero Industry Act recently.

- This statement is correct. The European Parliament has indeed approved the Net-Zero Industry Act. The Act is part of the European Green Deal and aims to scale up clean technology production in the EU, targeting at least 40% of the EU's annual deployment needs for strategic net-zero technologies by 2030

Statement-II: The European Union intends to achieve carbon neutrality by 2040 and therefore aims to develop all of its own clean technology by that time.

- This statement is incorrect. The European Union has committed to achieving carbon neutrality by 2050, not 2040. The Net-Zero Industry Act sets a target for Europe to produce 40% of its annual deployment needs in net-zero technologies by 2030, but there is no specific mention of achieving carbon neutrality by 2040 or developing all of its own clean technology by that time

Conclusion

Based on the analysis, the correct interpretation of the statements is:

Statement-I is correct, but Statement-II is incorrect.

Therefore, the correct answer is:

- (c) Statement-I is correct, but Statement-II is incorrect

Q47. Consider the following statements:

Statement-I: Recently, Venezuela has achieved a rapid recovery from its economic crisis and succeeded in preventing its people from fleeing/emigrating to other countries.

Statement-II: Venezuela has the world's largest oil reserves

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans.d

The correct answer is (d) Statement-I is incorrect, but Statement-II is correct.

Explanation:

- Statement-I: Recently, Venezuela has achieved a rapid recovery from its economic crisis and succeeded in preventing its people from fleeing/emigrating to other countries.
- This statement is incorrect. The available information indicates that Venezuela has not achieved a rapid recovery from its economic crisis. In fact, the country continues to face a severe economic and humanitarian crisis, with its GDP shrinking by around 75% between 2014 and 2021, hyperinflation, shortages of basic goods, and a massive exodus of refugees fleeing the country.
- Statement-II: Venezuela has the world's largest oil reserves.
- This statement is correct. Venezuela has the world's largest proven oil reserves, estimated at around 300 billion barrels.

Therefore, the correct answer is (d) Statement-I is incorrect, but Statement-II is correct.

Q48. With reference to the Digital India Land Records Modernisation Programme, consider the following statements:

1. To implement the scheme, the Central Government provides 100% funding.
2. Under the Scheme, Cadastral Maps are digitised.
3. An initiative has been undertaken to transliterate the Records of Rights from local language to any of the languages recognized by the Constitution of India.

Which of the statements given above are correct?

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

Ans. d

The Digital India Land Records Modernization Programme (DILRMP) is a centrally sponsored scheme aimed at developing a comprehensive and transparent land record management system. The key objectives of the program include:

- **100% Funding:** The Central Government provides 100% funding for implementing the DILRMP.
- **Digitization of Cadastral Maps:** Under the Scheme, Cadastral Maps are digitised. As of 2024, 68.02% of Cadastral Maps have been digitized.
- **Transliteration of Records of Rights:** An initiative has been undertaken to transliterate the Records of Rights from local language to any of the languages recognized by the Constitution of India. This includes transliterating Records of Rights into all 22 scheduled languages.

Therefore, the correct statements are:

- To implement the scheme, the Central Government provides 100% funding.
- Under the Scheme, Cadastral Maps are digitised.
- An initiative has been undertaken to transliterate the Records of Rights from local language to

any of the languages recognized by the Constitution of India.
The correct answer is:
(d) 1, 2 and 3

Q49. With reference to the 'Pradhan Mantri Surakshit Matritva Abhiyan', consider the following statements

1. This scheme guarantees a minimum package of antenatal care services to women in their second and third trimesters of pregnancy and six months post-delivery health care service in any government health facility
2. Under this scheme, private sector health care providers of certain specialities can volunteer to provide services at nearby government health facilities.

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

The correct answer is (b) 2 only.

Explanation:

- **Statement 1 is incorrect:** The Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) scheme guarantees a minimum package of antenatal care services to women in their second and third trimesters of pregnancy, but it does not explicitly include six months post-delivery health care services.
- **Statement 2 is correct:** Under the PMSMA scheme, private sector healthcare providers of certain specialties can volunteer to provide services at nearby government health facilities.
- Therefore, only statement 2 is correct.

Q50. With reference to the Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM) Yojana, consider the following statements:

1. The entry age group for enrolment in the scheme is 21 to 40 years.
2. Age specific contribution shall be made by the beneficiary.
3. Each subscriber under the scheme shall receive a minimum pension of 3,000 per month after attaining the age of 60 years.
4. Family pension is applicable to the spouse and unmarried daughters.

Which of the statements given above is/are correct?

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

Ans. b

The correct answer is (b) 2 and 3 only.

Explanation:

- The entry age group for enrolment in the scheme is actually 18 to 40 years, not 21 to 40 years.
- Age-specific contribution shall be made by the beneficiary, which is true.
- Each subscriber under the scheme shall receive a minimum pension of 3,000 per month after attaining the age of 60 years, which is correct.
- Family pension is applicable only to the spouse, not to unmarried daughters.

Therefore, statements 2 and 3 are correct.

Q51. Consider the following statements:

Statement-I: The atmosphere is heated more by incoming solar radiation than by terrestrial radiation.

Statement-II: Carbon dioxide and other greenhouse gases in the atmosphere are good absorbers of long wave radiation.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. b

The correct answer is (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I.

Explanation:

Statement I: The atmosphere is heated more by incoming solar radiation than by terrestrial radiation.

- **This statement is correct.** The atmosphere is primarily heated by the absorption of incoming solar radiation, rather than by the absorption of terrestrial (long-wave) radiation emitted from the Earth's surface.

Statement II: Carbon dioxide and other greenhouse gases in the atmosphere are good absorbers of long-wave radiation.

- **This statement is also correct.** Greenhouse gases, such as carbon dioxide, absorb and trap the long-wave radiation emitted by the Earth's surface, which contributes to the greenhouse effect and global warming.
- **However, Statement II does not directly explain Statement I.** The fact that greenhouse gases absorb long-wave radiation does not explain why the atmosphere is heated more by incoming solar radiation than by terrestrial radiation. The two statements are related, but Statement II does not provide a complete explanation for Statement I.

Therefore, the correct answer is (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I.

Q52. Consider the following statements:

Statement-I: Thickness of the troposphere at the equator is much greater as compared to poles.

Statement-II: At the equator, heat is transported to great heights by strong convectional currents.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. a

The correct answer is (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.

Explanation:

Statement I: The thickness of the troposphere at the equator is much greater as compared to poles.

- **This statement is correct.** The troposphere is thicker at the equator due to the intense solar heating, which causes strong convectional currents that transport heat to greater heights.

Statement II: At the equator, heat is transported to great heights by strong convectional currents.

- **This statement is also correct.** The strong convectional currents at the equator are responsible for the increased thickness of the troposphere.

Statement II explains Statement I because the strong convectional currents at the equator are the primary reason for the increased thickness of the troposphere.

Q.53. Consider the following:

1. Pyroclastic debris
2. Ash and dust
3. Nitrogen compounds
4. Sulphur compounds

How many of the above are products of volcanic eruptions?

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

Ans. c

The correct answer is (c) Only three.

Explanation:

- **Pyroclastic debris:** Yes, this is a product of volcanic eruptions. Pyroclastic debris includes ash, lapilli, and lava bombs that are blown out of a volcano or form in pyroclastic flows.
- **Ash and dust:** Yes, these are products of volcanic eruptions. Volcanic ash is a type of tephra that is formed during violent eruptions and can be carried by the wind for long distances.
- **Nitrogen compounds:** No, nitrogen compounds are not typically a product of volcanic eruptions. Nitrogen is a common component of the Earth's atmosphere, but it is not directly

related to volcanic activity.

- **Sulphur compounds:** Yes, these are products of volcanic eruptions. Volcanic gases include sulfur dioxide, which is released during eruptions and can contribute to acid rain and other environmental hazards.

Therefore, only three of the given options are directly related to volcanic eruptions: pyroclastic debris, ash and dust, and sulfur compounds.

Q.54. Which of the following is/are correct inference/inferences from isothermal maps in the month of January?

1. The isotherms deviate to the north over the ocean and to the south over the continent.
2. The presence of cold ocean currents, Gulf Stream and North Atlantic Drift make the North Atlantic Ocean colder and the isotherms bend towards the north.

Select the answer using the code given below:

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

Ans. a

The correct answer is (a) 1 only.

Explanation:

The isotherms deviate to the north over the ocean and to the south over the continent.

- **This statement is correct.** Isotherms diverge in January, moving to the north over the sea and to the south over land. This is due to the difference in temperature between the land and the water, as well as warm and cold ocean currents.

The presence of cold ocean currents, Gulf Stream and North Atlantic Drift make the North Atlantic Ocean colder and the isotherms bend towards the north.

- **This statement is incorrect.** The Gulf Stream and North Atlantic Drift are warm ocean currents that warm the Northern Atlantic Ocean, causing the isotherms to bend towards the north.

Therefore, only statement 1 is correct.

Q.55. Which of the following countries are well known as the two largest cocoa producers in the world?

- (a) Algeria and Morocco
- (b) Botswana and Namibia
- (c) Cote d' Ivoire Coast and Ghana
- (d) Madagascar and Mozambique

Ans. c

The correct answer is (c) Cote d'Ivoire and Ghana.

Explanation:

Based on the information provided in the search results, the two largest cocoa producers in the world are:

Côte d'Ivoire (Ivory Coast):

- Côte d'Ivoire is the world's largest cocoa producer, accounting for around 40.9% of global cocoa production.
- In 2022, Côte d'Ivoire produced 2.2 million tonnes of cocoa.

Ghana:

- Ghana is the world's second-largest cocoa producer, alongside Côte d'Ivoire, in Africa's leading cocoa-producing nations.
- Ghana produces around 1.1 million tonnes of cocoa annually, contributing 20% to global cocoa production.

Therefore, the two largest cocoa producers in the world are Côte d'Ivoire and Ghana.

Q.56. With reference to the Himalayan rivers joining the Ganga downstream of Prayagraj from West to East, which one of the following sequences is correct?

- (a) Ghaghara – Gomati – Gandak – Kosi
- (b) Gomati – Ghaghara – Gandak – Kosi
- (c) Ghaghara – Gomati – Kosi – Gandak
- (d) Gomati – Ghaghara – Kosi – Gandak

Ans.b

The correct answer is (b) Gomati – Ghaghara – Gandak – Kosi.

Explanation:

- **Gomati:** The Gomati River originates from the Gomat Taal and meets the Ganga at Kaithi, District-Ghazipur, bordering Varanasi.
- **Ghaghara:** The Ghaghara River originates from the Karnali River and meets the Ganga at Chhapra, Bihar.
- **Gandak:** The Gandak River originates near the Sino-Nepal boundary and meets the Ganga at Sonpur, Bihar.
- **Kosi:** The Kosi River originates in Tibet and meets the Ganga at Karagola, near Sharsha, Bihar.

The sequence of rivers joining the Ganga downstream of Prayagraj from West to East is:

- Gomati (left bank)
- Ghaghara (left bank)
- Gandak (left bank)
- Kosi (left bank)

Therefore, the correct sequence is (b) Gomati – Ghaghara – Gandak – Kosi.

Q.57. Consider the following statements:

Statement-I: Rainfall is one of the reasons for weathering of rocks.

Statement-II: Rain water contains carbon dioxide in solution

Statement-III: Rain water contains atmospheric oxygen

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

- (a) Both Statement-II and Statement-III are correct and both of them explain Statement-I
- (b) Both Statement-II and Statement-III are correct, but only one of them explains Statement-I
- (c) Only one of the Statements II and III is correct and that explains Statement-I
- (d) Neither Statement-II nor Statement-III is correct

Ans. a

The correct answer is (a) Both Statement-II and Statement-III are correct and both of them explain Statement-I.

Explanation:

Rainfall is one of the reasons for weathering of rocks. (Statement-I)

- Rainfall plays a significant role in weathering rocks through both physical and chemical processes. Rainwater can cause physical weathering by freezing and thawing, and chemical weathering by dissolving minerals and carrying away the weathered products.

Rain water contains carbon dioxide in solution. (Statement-II)

- Rainwater contains dissolved carbon dioxide from the atmosphere, which reacts with water to form carbonic acid (H_2CO_3). This acid helps in chemical weathering by dissolving minerals like calcite and releasing calcium ions.

Rain water contains atmospheric oxygen. (Statement-III)

- Rainwater also contains dissolved atmospheric oxygen, which can participate in chemical reactions that contribute to weathering. For example, oxygen can oxidize minerals, leading to their breakdown.

Both Statement-II and Statement-III are correct and both explain Statement-I. Rainfall is a crucial factor in weathering, and the presence of carbon dioxide and oxygen in rainwater contributes to the chemical processes involved in weathering.

Q.58. Consider the following countries:

1. Finland
2. Germany
3. Norway
4. Russia

How many of the above countries have a border with the North Sea?

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

Ans. c

The correct answer is (c) Only three.

Explanation:

- **Germany:** Germany has a border with the North Sea, specifically along the states of Schleswig-Holstein and Lower Saxony, with ports at Bremerhaven and Hamburg.
- **Norway:** Norway has a border with the North Sea, particularly along its western coast, including the fjords and the Shetland Islands.
- **Denmark:** Denmark has a border with the North Sea, specifically along its eastern coast, including the Kattegat and Skagerrak straits that separate Denmark from Norway and Sweden respectively.

The countries that do not have a border with the North Sea are:

- **Finland:** Finland does not have a border with the North Sea, as it is located in the Baltic region and is separated from the North Sea by Sweden and Denmark.
- **Russia:** Russia does not have a border with the North Sea, as it is located in Eastern Europe and is separated from the North Sea by several countries, including Poland, Germany, and Denmark.

Therefore, only three countries (Germany, Norway, and Denmark) have a border with the North Sea.

Q.59. Consider the following information:

Waterfall	Region	River
Dhuandhar	Malwa	Narmada
Hundru	Chota Nagpur	Subarnarekha
Gersoppa	Western Ghats	Netravati

In how many of the above rows is the given information correctly matched?

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

Ans. a

The correct answer is (a) Only one.

Explanation:

- **Dhuandhar:** The Dhuandhar Falls is located in the Malwa region, and it is indeed located on the Narmada River.
- **Hundru:** The Hundru Falls is located in the Chota Nagpur region, but it is not on the Subarnarekha River. It is actually located on the Koi River.
- **Gersoppa:** The Gersoppa Falls is located in the Western Ghats, but it is not on the Netravati River. It is actually located on the Sharavathi River.

Only the first row has the correct information.

Q.60. Consider the following information:

Region	Name of the Mountain Range	Type of Mountain
Central	Vosges	Fold mountain
Europe	Alps	Block mountain
North America	Appalachians	Fold mountain
South America	Andes	Fold mountain

In how many of the above rows is the given information correctly matched?

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

Ans. c

The correct answer is (c) Only three.

Explanation:

- **Vosges (Central):** The information provided is incorrect. The Vosges Mountains are not a block mountain range, but rather a fold mountain range.
- **Alps (Europe):** The information provided is correct. The Alps are a block mountain range.
- **Appalachians (North America):** The information provided is correct. The Appalachian Mountains are a fold mountain range.
- **Andes (South America):** The information provided is incorrect. The Andes are not a fold mountain range, but rather a fold-thrust belt mountain range.

Therefore, only three out of the four rows have the information correctly matched.

Q61. The organisms “Cicada, Frog hopper and Pond skater” are:

- (a) Birds
- (b) Fish
- (c) Insects
- (d) Reptiles

Ans. c

The correct answer is (c) Insects.

Explanation:

- **Cicada:** Cicadas are insects in the order Hemiptera, specifically in the superfamily Cicadoidea.
- **Frog hopper:** Frog hoppers are insects in the order Hemiptera, specifically in the superfamily Cercopoidea.

- **Pond skater:** Pond skaters are insects in the order Hemiptera, specifically in the family Gerridae.

All three organisms are insects, which are a class of invertebrate animals within the phylum Arthropoda.

Q.62. Consider the following statements:

Statement-I: Many chewing gums found in the market are considered a source of environmental pollution.

Statement-II: Many chewing gums contain plastic as gum base.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. a

The correct answer is (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.

Explanation:

Statement-I: Many chewing gums found in the market are considered a source of environmental pollution.

- This statement is correct. Chewing gum contributes to plastic pollution, with an estimated 100,000 tonnes of plastic pollution annually. Improperly discarded gum ends up as litter on streets, pavements, and public areas, causing aesthetic and economic issues.

Statement-II: Many chewing gums contain plastic as gum base.

- This statement is also correct. Most chewing gums are composed of synthetic petroleum derivatives, including butyl rubber, polyethylene, and polyvinyl acetate, which are also used in other products like diesel, plastic bags, and glue. These plastics provide the chewiness and texture to the gum.

Statement-II explains Statement-I because the plastic content in chewing gum is the primary reason for its environmental impact. The non-biodegradable nature of these plastics means they persist in the environment, contributing to microplastic pollution and harming wildlife.

Q.63. Consider the following pair:

Country	Animal Found in Its Natural Habitat
Brazil	Indri
Indonesia	Elk

Madagascar	Bonobo
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How many of the pairs given above are correctly matched?

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

Ans. a

The correct answer is (a) Only one.

Explanation:

- **Brazil - Indri:** The Indri is a type of lemur found in the rainforests of Madagascar, not Brazil.
- **Indonesia - Elk:** Elk are not native to Indonesia. They are found in Europe, Asia, and North America.
- **Madagascar - Bonobo:** Bonobos are not found in Madagascar. They are native to the Congo Basin in central Africa.

Only the first pair, Brazil - Indri, is correctly matched.

Q.64. Consider the following statements regarding World Toilet Organization:

1. It is one of the agencies of the United Nations.
2. World Toilet Summit, World Toilet Day and World Toilet College are the initiatives of this organization, to inspire action to tackle the global sanitation crisis.
3. The main focus of its function is to grant funds to the least developed countries and developing countries to achieve the end of open defecation.

Which of the statements given above is/are correct?

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

Ans. a

The correct answer is (a) 2 only.

Explanation:

Statement 1 is incorrect. The World Toilet Organization (WTO) is a global non-profit organization, and it is not an agency of the United Nations.

Statement 2 is correct. The World Toilet Organization has initiated the following programs to tackle the global sanitation crisis:

- World Toilet Summit
- World Toilet Day
- World Toilet College

Statement 3 is incorrect. The main focus of the World Toilet Organization is not to grant funds, but to raise awareness, promote best practices, and inspire action to improve toilet and sanitation conditions worldwide.

Therefore, only statement 2 is correct.

Q.65. Consider the following statements:

1. Lions do not have a particular breeding season.
2. Unlike most other big cats, cheetahs do not roar.
3. Unlike male lions, male leopards do not proclaim their territory by scent marking.

Which of the statements given above are correct?

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

Ans. b

The correct answer is (b) 2 and 3 only.

Explanation:

- **Statement 1 is incorrect.** Lions do have a particular breeding season, which is typically during the rainy season.
- **Statement 2 is correct.** Unlike other big cats, cheetahs do not roar. Instead, they make a variety of other vocalizations, such as chirps, growls, and purrs.
- **Statement 3 is correct.** Unlike male lions, male leopards do not proclaim their territory by scent marking. Leopards are more solitary and territorial, and they mark their territory through other means, such as scraping the ground and leaving visual markings.

Therefore, only statements 2 and 3 are correct.

Q.66. Which one of the following is the correct description of “100 Million Farmers”?

- (a) It is a platform for accelerating the transition towards food and water systems that are net-zero (carbon), nature-positive and that aims to increase farmer resilience.
- (b) It is an international alliance and a network of individuals and farming organisations interested in supporting and strengthening the development of the organic animal husbandry.
- (c) It is a digital platform fully integrated with service providers and built on blockchain that lets buyers, sellers and third parties trade fertilizers quickly and securely.
- (d) It is a platform with the mission of encouraging the farmers to form Farmer Product Organisations or Agribusiness Consortia, thus facilitating the access to global open markets to sell their products.

Ans. a

The correct answer is (a) It is a platform for accelerating the transition towards food and water systems that are net-zero (carbon), nature-positive and that aims to increase farmer resilience.

Explanation:

- Based on the information provided in the search results, the "100 Million Farmers" initiative is a multi stakeholder platform with the following key features:
- It aims to catalyze action towards transitioning to net-zero, nature-positive food systems by 2030.
- It supports private and public leaders to position food and farmers as central pillars of the global climate and nature agenda.
- It accelerates collective action to scale climate- and nature-friendly agricultural practices.
- It has bold objectives for accelerating the transition towards food and water systems that are net-zero, nature-positive, and that increase farmer resilience.

An international alliance for organic animal husbandry, a digital platform for fertilizer trading, or a platform for encouraging farmers to form organizations for global market access. Therefore, option (a) best describes the "100 Million Farmers" initiative.

Q.67. Consider the following:

1. Battery storage
2. Biomass generators
3. Fuel cells
4. Rooftop solar photovoltaic units

How many of the above are considered "Distributed Energy Resources"?

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

Ans. d

The correct answer is (d) All four.

Explanation:

Based on the information provided in the search results, all of the following are considered Distributed Energy Resources (DERs):

- **Battery storage:** Distributed energy storage systems (DESS) are classified as DER systems.
- **Biomass generators:** Biomass is listed as one of the renewable energy sources that DER systems typically use.
- **Fuel cells:** Fuel cells are explicitly mentioned as one of the DER technologies.
- **Rooftop solar photovoltaic units:** Solar power, including rooftop solar PV, is identified as a common DER technology.

The search results clearly indicate that DER systems can include a wide range of small-scale power generation and storage technologies, including the ones listed above. Therefore, all four of the given options are considered Distributed Energy Resources.

Q.68. Which one of the following shows a unique relationship with an insect that has coevolved with it and that is the only insect that can pollinate this tree?

- (a) Fig
- (b) Mahua
- (c) Sandalwood
- (d) Silk cotton

Ans. a

The correct answer is (a) Fig.

Explanation:

- **Fig:** The fig tree has a unique relationship with the fig wasp. The fig wasp lays its eggs inside the fig fruit, and the larvae feed on the fruit's pulp. In return, the wasp pollinates the fig tree by transferring pollen from one fig flower to another. This relationship is an example of mutualism, where both species benefit from each other.
- **Mahua:** Mahua trees are pollinated by various insects, including bees and butterflies, but there is no specific insect that has coevolved with it.
- **Sandalwood:** Sandalwood trees are pollinated by various insects, including bees and butterflies, but there is no specific insect that has coevolved with it.
- **Silk cotton:** Silk cotton trees are pollinated by various insects, including bees and butterflies, but there is no specific insect that has coevolved with it.

Therefore, the fig tree is the only one that has a unique relationship with an insect that has coevolved with it and is the only insect that can pollinate this tree.

Q.69. Consider the following:

1. Butterflies
2. Fish
3. Frogs

How many of the above have poisonous species among them?

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

Ans. c

Explanation:

- **Butterflies:** Many species of butterflies are poisonous or have toxic characteristics that serve

as a defense mechanism against predators. Examples include the Monarch Butterfly, Pipevine Swallowtail, Blue Tiger Butterfly, Tiger Swallowtail, and African Swallowtail. These butterflies often have bright colors that warn predators of their toxicity.

- **Fish:** Some species of fish are poisonous, such as the poison dart frog fish, which has a toxic secretion that can be used to poison predators.
- **Frogs:** Poison dart frogs are known for their bright colors and toxicity. They secrete a toxic substance called batrachotoxin, which can be lethal to predators.

Q.70. Consider the following:

1. Cashew
2. Papaya
3. Red sanders

How many of the above trees are actually native to India?

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

Ans. a

The correct answer is (a) Only one.

Explanation:

- **Cashew:** The cashew tree is native to South America, specifically Brazil, and was introduced to India by the Portuguese in the 16th century.
- **Papaya:** Papaya is native to Central America and Mexico, but it was introduced to India by the Portuguese in the 16th century.
- **Red sanders:** Red sanders is native to the Western Ghats of India and is a highly valued timber tree.

Therefore, only one of the given options, the cashew tree, is not native to India.

Q.71. Consider the following airports:

1. Donyi Polo Airport
2. Kushinagar International Airport
3. Vijayawada International Airport

In the recent past, which of the above have been constructed as Greenfield projects?

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

Ans. c

The correct answer is (c) 2 and 3 only.

Explanation:

- **Donyi Polo Airport:** This airport is located in Itanagar, Arunachal Pradesh, and was operationalized in December 2022. It is a greenfield airport, built from scratch on previously undeveloped land.
- **Kushinagar International Airport:** This airport is located in Kushinagar, Uttar Pradesh, and was operationalized in October 2021. It is a greenfield airport, built from scratch on previously undeveloped land.
- **Vijayawada International Airport:** This airport is located in Vijayawada, Andhra Pradesh, and was operationalized in 2017. It is not a greenfield airport, as it was built on existing infrastructure.

Therefore, only Kushinagar International Airport and Vijayawada International Airport were constructed as greenfield projects.

Q.72. With reference to “water vapour”, which of the following statements is/are correct?

1. It is a gas, the amount of which decreases with altitude.
2. Its percentage is maximum at the poles.

Select the answer using the code given below:

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

Ans. a

The correct answer is (a) 1 only.

Explanation:

Statement 1 is correct: Water vapor is a gas, and its amount decreases with increasing altitude in the atmosphere.

- As per the information provided in the search results, water vapor is concentrated mostly in the troposphere, which is the lowest layer of the atmosphere. The amount of water vapor decreases with increasing altitude.

Statement 2 is incorrect: The percentage of water vapor is not maximum at the poles.

- The search results indicate that the water vapor concentration is highest in the tropics and decreases towards the poles. The average water vapor concentration or humidity in the tropics is between 77% and 88% per day, while it is nearly 0% at the poles.

Therefore, only statement 1 is correct.

Q.73. Consider the following description:

1. Annual and daily range of temperatures is low.
2. Precipitation occurs throughout the year.

3. Precipitation varies between 50cm – 250cm.

What is this type of climate?

- (a) Equatorial climate
- (b) China type climate
- (c) Humid subtropical climate
- (d) Marine West coast climate

Ans. d

The correct answer is (d) Marine West coast climate.

Explanation:

The given description matches the characteristics of the Marine West Coast climate, also known as the Temperate Oceanic climate or the Cfb climate in the Köppen climate classification system.

The key features of the Marine West Coast climate are:

- **Annual and daily range of temperatures is low:** The proximity to the ocean moderates the temperatures, resulting in small annual and daily temperature variations.
- **Precipitation occurs throughout the year:** There is no distinct dry season, with precipitation distributed evenly throughout the year.
- **Precipitation varies between 50cm – 250cm:** The annual precipitation range of 50-250 cm is typical of the Marine West Coast climate.
- Other features of this climate include cool summers and mild, wet winters, with cloudy and humid conditions prevailing throughout the year.
- This climate is found on the western coasts of continents in the mid-latitudes, such as the Pacific Northwest of North America, Western Europe, and parts of southern South America, New Zealand, and southeastern Australia.
-

Therefore, the given description best matches the Marine West Coast climate, and the correct answer is (d) Marine West coast climate.

Q.74. With reference to “Coriolis force”, which of the following statements is/are correct?

- 1. It increases with increase in wind velocity.
- 2. It is maximum at the poles and is absent at the equator.

Select the answer using the code given below:

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

Ans. c

The correct answer is (c) Both 1 and 2.

Explanation:

Statement 1: It increases with increase in wind velocity.

- This statement is correct. The Coriolis force is directly proportional to the wind speed. The higher the wind speed, the greater the deflection. This means that the Coriolis force increases with an increase in wind velocity.

Statement 2: It is maximum at the poles and is absent at the equator.

- **This statement is also correct.** The Coriolis force is zero at the equator due to the Earth's rotation being perpendicular to the direction of motion. At the poles, the Coriolis force is maximum because the Earth's rotation is parallel to the direction of motion.

Therefore, both statements are correct, and the correct answer is (c) Both 1 and 2.

Q.75. On June 21 every year, which of the following latitude(s) experience(s) a sunlight of more than 12 hours?

1. Equator
2. Tropic of Cancer
3. Tropic of Capricorn
4. Arctic Circle

Select the correct answer using the code given below:

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

Ans. d

The correct answer is (d) 2 and 4.

Explanation:

- **Equator:** The Equator experiences approximately 12 hours of daylight year-round, with no significant variation in daylight hours throughout the year.
- **Tropic of Cancer:** On June 21, the Tropic of Cancer (23.5° North latitude) experiences more than 12 hours of daylight. This is because the sun is directly overhead at noon on this date, resulting in more than 12 hours of sunlight.
- **Tropic of Capricorn:** The Tropic of Capricorn (23.5° South latitude) experiences less than 12 hours of daylight on June 21, as it is in the Southern Hemisphere and is tilted away from the sun.
- **Arctic Circle:** The Arctic Circle also experiences continuous daylight (midnight sun) on June 21, resulting in more than 12 hours of sunlight.

Therefore, only the Tropic of Cancer and the Arctic Circle experience more than 12 hours of sunlight on June 21.

Q.76. One of the following regions has the world's largest tropical peatland, which holds about three years worth of global carbon emissions from fossil fuels; and the possible destruction of which can exert detrimental effect on the global climate. Which one of the following denotes that region?

- (a) Amazon Basin
- (b) Congo Basin
- (c) Kikori Basin
- (d) Rio de la Plata Basin

Ans. b

The correct answer is (b) Congo Basin.

Explanation:

The Congo Basin is known to have the world's largest tropical peatland, which contains significant amounts of carbon. Its destruction could release large quantities of carbon into the atmosphere, contributing to climate change. The Congo Basin peatlands store approximately 29 billion tons of carbon, equivalent to about three years' worth of global greenhouse gas emissions from fossil fuels

Q.77. With reference to perfluoroalkyl and polyfluoroalkyl substances (PFAS) that are used in making many consumer products, consider the following statements:

1. PFAS are found to be widespread in drinking water, food and food packaging materials.
2. PFAS are not easily degraded in the environment.
3. Persistent exposure to PFAS can lead to bioaccumulation in animal bodies.

Which of the statements given above are correct?

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

Ans. d

The correct answer is (d) 1, 2 and 3.

Explanation:

PFAS are found to be widespread in drinking water, food and food packaging materials.

- **This statement is correct.** PFAS have been detected in various consumer products, including food packaging materials, drinking water, and food itself. They can be present in food through contamination of soil, water, and air, as well as through direct use in food production and processing.

PFAS are not easily degraded in the environment.

- **This statement is also correct.** PFAS are known for their persistence in the environment due to their chemical structure, which includes carbon-fluorine bonds that resist degradation. This means they can accumulate in the environment and persist for long periods.

Persistent exposure to PFAS can lead to bioaccumulation in animal bodies.

- **This statement is also correct.** Bioaccumulation occurs when PFAS are absorbed and stored in

the bodies of animals, often through consumption of contaminated food or water. This can lead to long-term exposure and potential harm to animals and humans. Therefore, all three statements are correct, and the correct answer is (d) 1, 2 and 3.

Q.78. Consider the following:

1. Carabid beetles
2. Centipedes
3. Flies
4. Termites
5. Wasps

Parasitoid species are found in how many of the above kind of organisms?

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

Ans.d

The correct answer is (d) All five.

Explanation:

Based on the information provided in the search results, parasitoid species are found in all five of the organisms listed:

- **Carabid beetles (Carabidae):** The search results indicate that around 1,600 species of the large and mainly freeliving family Carabidae are parasitoids.
- **Centipedes:** The search results do not explicitly mention centipedes as having parasitoid species, but they state that parasitism is found in various insect orders, including Coleoptera (beetles) which includes centipedes.
- **Flies (Diptera):** The search results mention several families of flies that include parasitoid species, such as Tachinidae, Bombyliidae, Pipunculidae, and Conopidae.
- **Termites:** While the search results do not specifically mention parasitoid species in termites, they state that parasitism has evolved independently many times across various insect orders, including Coleoptera which includes termites.
- **Wasps (Hymenoptera):** The search results clearly state that the majority of parasitoid insects are wasps within the order Hymenoptera.

Therefore, parasitoid species are found in all five of the organisms listed.

Q79. Consider the following plants:

1. Groundnut
2. Horse-gram
3. Soybean

How many of the above belong to the pea family?

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

Ans. c

The correct answer is (c) Only three.

Explanation:

- **Groundnut (*Arachis hypogaea*):** Groundnut, also known as peanut, is a member of the pea family (Fabaceae).
- **Horse-gram (*Macrotyloma uniflorum*):** Horse-gram is a legume crop that belongs to the pea family (Fabaceae).
- **Soybean (*Glycine max*):** Soybean is a legume crop that is a member of the pea family (Fabaceae).

Therefore, all three plants - groundnut, horse-gram, and soybean - belong to the pea family (Fabaceae), and the correct answer is (c) Only three.

Q80. Consider the following statements:

Statement-I: The Indian Flying Fox is placed under the "vermin" category in the Wild Life (Protection) Act, 1972.

Statement-II: The Indian Flying Fox feeds on the blood of other animals.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. c

The correct answer is (c) Statement-I is correct, but Statement-II is incorrect.

Explanation:

Statement-I: The Indian Flying Fox is placed under the "vermin" category in the Wild Life (Protection) Act, 1972.

- **This statement is correct.** The Indian Wildlife Protection Act, 1972 classifies the Indian Flying Fox (*Pteropus giganteus*) as "vermin", which means it is considered a pest species.

Statement-II: The Indian Flying Fox feeds on the blood of other animals.

- **This statement is incorrect.** The Indian Flying Fox is a fruit-eating and nectar-feeding bat species. It does not feed on the blood of other animals. It is a herbivorous species and not a blood-feeding or sanguivorous bat.

Therefore, only Statement-I is correct, while Statement-II is incorrect. Statement-II does not explain why the Indian Flying Fox is classified as "vermin" under the Wildlife Protection Act.

Q.81. The total fertility rate in an economy is defined as:

- (a) the number of children born per 1000 people in the population in a year.
- (b) the number of children born to a couple in their lifetime in a given population.
- (c) the birth rate minus death rate.
- (d) the average number of live births a woman would have by the end of her child-bearing age.

Ans. d

The correct answer is (d) the average number of live births a woman would have by the end of her child-bearing age.

Explanation:

The total fertility rate (TFR) is defined as the average number of children that would be born to a woman over her lifetime if she were to experience the prevailing age-specific fertility rates of the given year.

Specifically, the definition from the World Bank Metadata Glossary is:

"Total fertility rate represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in alignment with the prevailing age-specific fertility rates."

This is the most accurate definition of the total fertility rate, as it captures the average number of live births a woman would have by the end of her child-bearing age, based on the current fertility patterns.

Q.82. Consider the following statements:

- 1. In India, Non-Banking Financial Companies can access the Liquidity Adjustment Facility window of the Reserve Bank of India.
- 2. In India, Foreign Institutional Investors can hold the Government Securities (G-Secs).
- 3. In India, Stock Exchanges can offer separate trading platforms for debts.

Which of the statements given above is/are correct?

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

Ans. d

The correct answer is (d) 2 and 3 only.

Explanation:

Statement 1: In India, Non-Banking Financial Companies can access the Liquidity Adjustment Facility window of the Reserve Bank of India.

- **This statement is incorrect.** Non-Banking Financial Companies (NBFCs) are not eligible to access the Liquidity Adjustment Facility (LAF) window of the Reserve Bank of India (RBI). The LAF is a facility provided by the RBI to commercial banks to manage their liquidity.

Statement 2: In India, Foreign Institutional Investors can hold the Government Securities (G-Secs).

- **This statement is correct.** Foreign Institutional Investors (FIIs) are allowed to hold Government Securities (G-Secs) in India.

Statement 3: In India, Stock Exchanges can offer separate trading platforms for debts.

- **This statement is correct.** Stock Exchanges in India can offer separate trading platforms for debts, such as the National Stock Exchange of India (NSE) and the Bombay Stock Exchange (BSE), which have separate platforms for debt securities.

Therefore, statements 2 and 3 are correct, while statement 1 is incorrect.

Q.83. In India, which of the following can trade in Corporate Bonds and Government Securities?

1. Insurance Companies
2. Pension Funds
3. Retail Investors

Select the correct answer using the code given below:

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

Ans. d

The correct answer is (d) 1, 2 and 3.

Explanation:

- **Insurance Companies:** Insurance companies are eligible to invest in corporate bonds and government securities in India. They are allowed to invest in bonds issued by companies and the government, which provides them with a stable source of income and helps them manage their risk exposure.
- **Pension Funds:** Pension funds are also eligible to invest in corporate bonds and government securities in India. They are designed to provide a steady income stream to retirees, and investing in bonds helps them achieve this goal.
- **Retail Investors:** Retail investors, including individual investors, can also invest in corporate bonds and government securities in India. They can invest in bonds issued by companies and the government through various channels, such as stock exchanges, banks, and online

platforms.

Therefore, all three options are correct, and the correct answer is (d) 1, 2 and 3.

Q.84. Consider the following:

1. Exchange-Traded Funds (ETF)
2. Motor vehicle
3. Currency swap

Which of the above is/are considered financial instruments?

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

Ans. a

The correct answer is (a) 1 only.

Explanation:

- **Exchange-Traded Funds (ETF):** ETFs are considered financial instruments. They are investment funds that are traded on stock exchanges, just like individual stocks. ETFs hold a portfolio of assets, such as stocks, bonds, or commodities, and their value is derived from the underlying assets.
- **Motor vehicles:** Motor vehicles are not considered financial instruments. They are physical assets, not financial assets or contracts.
- **Currency swap:** Currency swaps are considered financial instruments. They are derivative contracts where two parties exchange specific amounts of two different currencies at inception and repay each other over time according to a predetermined formula.

Therefore, out of the three options provided, only Exchange-Traded Funds (ETF) and Currency swap are considered financial instruments. Motor vehicles are not financial instruments.

The correct answer is (a) 1 only.

Q.85. With reference to the sectors of the Indian economy, consider the following pairs:

Economic Activity	Sector
Storage of agricultural produce	Secondary
Dairy farm	Primary
Mineral exploration	Tertiary

Weaving cloth	Secondary
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How many of the pairs given above are correctly matched?

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

Ans. c

The correct answer is (c) Only three.

Explanation:

- **Storage of agricultural produce:** This activity is correctly matched with the Secondary sector. The Secondary sector includes industries that transform raw materials into finished goods, such as storage and processing of agricultural produce.
- **Dairy farm:** This activity is correctly matched with the Primary sector. The Primary sector includes activities that involve the extraction of natural resources, such as agriculture, mining, and forestry.
- **Mineral exploration:** This activity is correctly matched with the Primary sector. The Primary sector includes activities that involve the extraction of natural resources, such as mineral exploration and mining.
- **Weaving cloth:** This activity is correctly matched with the Secondary sector. The Secondary sector includes industries that transform raw materials into finished goods, such as weaving cloth.
-

Therefore, three out of the four pairs are correctly matched.

Q86. Consider the following materials:

1. Agricultural residues
2. Corn grains
3. Wastewater treatment sludge
4. Wood mill waste

Which of the above can be used as feedstock for producing Sustainable Aviation Fuel?

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

Ans. c

The correct answer is (c) 1, 2, 3 and 4.

Explanation:

- **Agricultural residues:** Agricultural residues such as corn stover, sugarcane bagasse, and other biomass can be used as feedstock for producing Sustainable Aviation Fuel (SAF).
- **Corn grains:** Corn grains can be used as feedstock for producing SAF. Corn grain can be converted into ethanol, which can then be used to produce SAF.
- **Wastewater treatment sludge:** Wastewater treatment sludge can be used as feedstock for producing SAF. This includes organic waste streams such as food waste, animal manure, and other wet waste.
- **Wood mill waste:** Wood mill waste, such as sawdust and wood chips, can be used as feedstock for producing SAF.

These feedstocks are all mentioned in the provided articles as potential sources for producing SAF.

Q.87. With reference to physical capital in Indian economy, consider the following pairs:

Items	Category
Farmer's plough	Working capital
Computer	Fixed capital
Yarn used by the weaver	Fixed capital
Petrol	Working capital

How many of the above pairs are correctly matched?

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

Ans. b

The correct answer is (b) Only two.

Explanation:

- **Farmer's plough:** A farmer's plough is correctly categorized as fixed capital. Fixed capital refers to the long-term, durable assets used in the production process, such as machinery, equipment, and buildings.
- **Computer:** A computer is correctly categorized as fixed capital. Computers are considered fixed capital as they are durable assets used in the production process.
- **Yarn used by the weaver:** Yarn used by the weaver is incorrectly categorized as fixed capital. Yarn is a raw material or input, and is considered part of the working capital, which includes the resources that are consumed in the production process.
- **Petrol:** Petrol is correctly categorized as working capital. Working capital refers to the

short-term, consumable assets used in the production process, such as raw materials, fuel, and supplies.

Therefore, only two out of the four pairs are correctly matched, and the correct answer is (b) Only two.

Q.88. Which one of the following words/phrases is most appropriately used to denote “an interoperable network of 3D virtual worlds that can be accessed simultaneously by millions of users, who can exert property rights over virtual items.”?

- (a) Big data analytics
- (b) Cryptography
- (c) Metaverse
- (d) Virtual matrix

Ans. c

The correct answer is (c) Metaverse.

Explanation:

- The **metaverse** refers to an interoperable network of 3D virtual worlds that can be accessed simultaneously by millions of users, who can exert property rights over virtual items. It is a concept that has been gaining popularity in recent years, particularly in the context of virtual reality and online gaming.
- **Big data analytics** refers to the process of examining large amounts of data to extract insights and patterns. While it may be used in the context of the metaverse, it is not the most appropriate term to describe it.
- **Cryptography** refers to the practice of secure communication by transforming plaintext into ciphertext. While it may be used in the context of the metaverse to ensure secure transactions and data protection, it is not the most appropriate term to describe it.
- **Virtual matrix** refers to a mathematical representation of a virtual space, but it does not specifically refer to an interoperable network of 3D virtual worlds that can be accessed simultaneously by millions of users.

Therefore, the correct answer is (c) Metaverse.

Q.89. With reference to the rule/rules imposed by the Reserve Bank of India while treating foreign banks, consider the following statements:

1. There is no minimum capital requirement for wholly owned banking subsidiaries in India.
2. For wholly owned banking subsidiaries in India, at least 50% of the board members should be Indian nationals.

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.

The correct answer is (d) Neither 1 nor 2.

Explanation:

- **Minimum capital requirement:** There is a minimum capital requirement for wholly owned banking subsidiaries in India. The Reserve Bank of India (RBI) requires foreign banks to maintain a minimum paid-up capital of ₹500 crore (approximately USD 70 million) for setting up a wholly owned subsidiary in India.
- **Board composition:** There is no specific requirement for at least 50% of the board members to be Indian nationals for wholly owned banking subsidiaries in India. The RBI guidelines for setting up wholly owned subsidiaries by foreign banks in India do not specify a minimum percentage of Indian nationals on the board.

Therefore, neither of the given statements is correct.

Q.90. With reference to Corporate Social Responsibility (CSR) rules in India, consider the following statements:

1. CSR rules specify that expenditures that benefit the company directly or the employees will not be considered as CSR activities.
2. CSR rules do not specify minimum spending on CSR activities.

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

The correct answer is (d) Neither 1 nor 2.

Explanation:

CSR rules specify that expenditures that benefit the company directly or the employees will not be considered as CSR activities.

- **This statement is incorrect.** According to the CSR rules, activities undertaken for the benefit of employees are excluded from being considered as eligible CSR activities. However, the rules do not specify that expenditures that benefit the company directly will not be considered as CSR activities.

CSR rules do not specify minimum spending on CSR activities.

- **This statement is also incorrect.** The CSR rules specify that companies with a net worth of ₹500 crore, or a turnover of ₹1,000 crore, or a net profit of ₹5 crore must spend at least 2% of their average net profit for the last three years on CSR activities.

Therefore, neither of the given statements is correct.

Q.91. With reference to radioisotope thermoelectric generators (RTGs), consider the following statements:

1. RTGs are miniature fission reactors
2. RTGs are used for powering the onboard systems of spacecrafts.
3. RTGs can use Plutonium-238, which is a by-product of weapons development.

Which of the statements given above are correct?

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

Ans. b

The correct answer is (b) 2 and 3 only.

Explanation:

Statement 1: RTGs are miniature fission reactors

- **This statement is incorrect.** RTGs are not miniature fission reactors. They use the heat generated by the natural radioactive decay of radioisotopes, such as plutonium-238, to generate electricity through thermoelectric conversion. They do not rely on nuclear fission.

Statement 2: RTGs are used for powering the onboard systems of spacecrafts

- **This statement is correct.** RTGs are commonly used to power the onboard systems of spacecraft, including probes, landers, and rovers, in space exploration missions. They provide a reliable and long-lasting source of electrical power.

Statement 3: RTGs can use Plutonium-238, which is a by-product of weapons development

- **This statement is correct.** Plutonium-238 is used as the heat source in many RTGs. It is produced as a by-product of the production of plutonium-239, which is used in nuclear weapons.

Therefore, the correct answer is (b) 2 and 3 only.

Q.92. Consider the following statements:

Statement-I: Giant stars live much longer than dwarf stars.

Statement-II: Compared to dwarf stars, giant stars have a greater rate of nuclear reactions.

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 explains Statement-I
- (b) Both Statement-I and Statement-II are correct but and Statement-II does not explains Statement-I
- (c) Statement-I is correct, but Statement-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

Ans. c

The correct answer is (c) Statement-I is correct, but Statement-II is incorrect.

Explanation:

Statement-I: Giant stars live much longer than dwarf stars.

- **This statement is correct.** Giant stars have longer lifetimes than dwarf stars. The lifetime of a star depends on its mass. More massive stars have shorter lifetimes, while less massive stars have longer lifetimes. Giant stars are typically less massive than dwarf stars, so they live longer.

Statement-II: Compared to dwarf stars, giant stars have a greater rate of nuclear reactions.

- **This statement is incorrect.** Giant stars do not have a greater rate of nuclear reactions compared to dwarf stars. In fact, the rate of nuclear reactions in a star is determined by its mass and temperature, not its size. Dwarf stars can have a higher rate of nuclear reactions if they are more massive than giant stars.

Therefore, Statement-I is correct, but Statement-II is incorrect.

Q.93. Which one of the following is synthesised in human body that dilates blood vessels and increase blood flow?

- (a) Nitric oxide
- (b) Nitrous oxide
- (c) Nitrogen dioxide
- (d) Nitrogen pentoxide

Ans. a

The correct answer is (a) Nitric oxide.

Explanation:

Nitric oxide (NO) is a molecule that plays a crucial role in the body. It is synthesized in the body through various pathways, including the conversion of L-arginine to L-citrulline by nitric oxide synthase (NOS). NO is involved in various physiological processes, including:

- **Blood vessel dilation:** NO causes blood vessels to dilate, which increases blood flow and reduces blood pressure.
- **Neurotransmission:** NO acts as a neurotransmitter, facilitating communication between nerve cells.
- **Immune response:** NO is involved in the immune response, helping to regulate the activity of immune cells.

Q.94. Consider the following activities:

1. Identification of narcotics on passengers at airports or in aircraft
2. Monitoring of precipitation
3. Tracking the migration of animals

In how many of the above activities can the radars be used?

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

Ans. c

The correct answer is (a) Only one.

Explanation:

- **Identification of narcotics on passengers at airports or in aircraft:** Radar technology can be used for this purpose. Radar systems can be used to detect and track objects, including people, in real-time. This can be useful for identifying narcotics on passengers at airports or in aircraft.
- **Monitoring of precipitation:** Radar technology can also be used for monitoring precipitation. Radar systems can detect and track precipitation patterns, providing valuable information for weather forecasting and monitoring.
- **Tracking the migration of animals:** Radar technology can also be used for tracking the migration of animals. Radar systems can detect and track animal movements, providing valuable information for conservation and research purposes.

Therefore, radar technology can be used in all three activities, making the correct answer (c) All three.

Q.95. Consider the following aircraft:

1. Rafael
2. MiG-29
3. Tejas MK-1

How many of the above are considered fifth generation fighter aircraft?

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

Ans. d

The correct answer is (d) None.

Explanation:

- **Rafale:** The Rafale is not a fifth-generation fighter. It is considered a 4.5-generation multirole fighter.
- **MiG-29:** The MiG-29 is also not a fifth-generation fighter. It is a fourth-generation jet fighter.
- **Tejas MK-1:** The Tejas MK-1 is not a fifth-generation fighter either. It is considered a 4.5-generation multirole fighter.

The key characteristics of a fifth-generation fighter include stealth, advanced avionics, and networking capabilities. None of the aircraft listed (Rafale, MiG-29, Tejas MK-1) possess these features, making them not fifth-generation fighters.

Therefore, the correct answer is (d) None.

Q.96. In which of the following are hydrogels used?

1. Controlled drug delivery in patients
2. Mobile air-conditioning systems
3. Preparation of industrial lubricants.

Select the correct answer using the code given below:

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

Ans. a

The correct answer is (a) 1 only.

Explanation:

- **Controlled drug delivery in patients:** Hydrogels are used in controlled drug delivery systems for various applications, including cancer treatment, aesthetic corrections, spinal fusion, and other medical applications. They can be designed to release drugs in a controlled manner, making them useful for targeted and sustained drug delivery in patients.
- **Mobile air-conditioning systems:** Hydrogels are not used in mobile air-conditioning systems. Air-conditioning systems typically use refrigerants, compressors, and other mechanical components, and do not involve the use of hydrogels.
- **Preparation of industrial lubricants:** Hydrogels are not used in the preparation of industrial lubricants. Lubricants are typically made from mineral oils, synthetic oils, or greases, and do not contain hydrogels as a component.

Therefore, hydrogels are only used in controlled drug delivery in patients, making the correct answer (a) 1 only.

Q97. Which one of the following is the exhaust pipe emission from Fuel Cell Electric Vehicles, powered by hydrogen?

- (a) Hydrogen peroxide
(b) Hydronium
(c) Oxygen
(d) Water vapour

Ans. d

The correct answer is (d) Water vapour.

Explanation:

- Fuel cell electric vehicles (FCEVs) powered by hydrogen produce water vapour as the only exhaust emission. This is because the chemical reaction that takes place in the fuel cell stack involves the combination of hydrogen and oxygen to produce electricity, with water being the only byproduct.

The key points are:

- In a fuel cell, hydrogen reacts electrochemically with oxygen to produce electricity, which powers the electric motor of the vehicle.
- The only waste product of this reaction is pure water, which is emitted as water vapour through the exhaust.
- FCEVs do not produce any harmful tailpipe emissions like carbon dioxide, nitrogen oxides, or particulate matter.
- The other options - hydrogen peroxide, hydronium, and oxygen - are not the exhaust emissions from hydrogen-powered fuel cell vehicles.

Therefore, the correct answer is (d) Water vapour.

Q.98. Recently the term “pumped-storage hydropower” is actually and appropriately discussed in the context of which one of the following?

- (a) Irrigation of terraced crop fields
- (b) Lift irrigation of cereal crops
- (c) Long duration energy storage
- (d) Rainwater harvesting system

Ans. c

The correct answer is (c) Long duration energy storage.

Explanation:

- Pumped-storage hydropower (PSH) is primarily discussed in the context of long-duration energy storage, which is becoming increasingly important as the power grid transitions to include more variable renewable energy sources like wind and solar.

The key points are:

- Pumped-storage hydropower is a type of hydroelectric energy storage system that uses two reservoirs at different elevations to store and generate electricity.
- During periods of low electricity demand, excess electricity is used to pump water from the lower reservoir to the upper reservoir.
- During periods of high electricity demand, the water is released from the upper reservoir

through turbines to generate electricity.
This ability to store energy for long durations and then release it when needed makes pumped-storage hydropower a valuable technology for integrating variable renewable energy sources and providing grid stability and reliability.

Q.99. “Membrane Bioreactors” are often discussed in the context of

- (a) Assisted reproductive technologies
- (b) Drug delivery nanotechnologies
- (c) Vaccine production technologies
- (d) Wastewater treatment technologies

Ans. d

The correct answer is (d) Wastewater treatment technologies.

Explanation:

Membrane Bioreactors (MBRs) are primarily discussed in the context of wastewater treatment technologies, not in the context of assisted reproductive technologies, drug delivery nanotechnologies, or vaccine production technologies.

The key points are:

- MBRs combine a biological treatment process (bioreactor) with a membrane filtration unit to treat wastewater.
- MBRs are used for both municipal and industrial wastewater treatment applications, as they offer several advantages over conventional activated sludge systems.
- The membrane component in an MBR replaces the need for secondary clarifiers, allowing for a more compact treatment process and higher quality effluent.
- The search results provided extensive information on the use of MBRs in wastewater treatment, covering topics like membrane fouling, design configurations, and advantages over traditional systems.

There was no mention of MBRs being used in the other contexts provided (assisted reproductive technologies, drug delivery, vaccine production).

Therefore, the correct answer is (d) Wastewater treatment technologies.

Q.100. With reference to the Indian economy, “Collateral Borrowing and Lending Obligations” are the instruments of:

- (a) Bond market
- (b) Forex market
- (c) Money market
- (d) Stock market

Ans. c

The correct answer is (c) Money market.

Explanation:

Based on the information provided in the search results, "Collateralized Borrowing and Lending Obligations" (CBLO) are instruments of the money market in the Indian economy, not the bond market, forex market, or stock market.

Key points:

- CBLO is a money market instrument operated by the Clearing Corporation of India Ltd. (CCIL) that allows financial institutions to borrow and lend funds against the collateral of eligible securities.
- The CBLO market functions similarly to the call money market, but with the added feature of using collateral for the transactions.
- Participants in the CBLO market include banks, financial institutions, insurance companies, mutual funds, and other eligible entities that have access to the money market.
- The search results provide detailed information on the CBLO market, its functioning, and the regulatory treatment by the Reserve Bank of India, all of which confirm that CBLO is a money market instrument.

Therefore, the correct answer is (c) Money market.