



General Studies

Paper-I



UPSC Civil Services (Preliminary) Exam : 16 June, 2024

Answer Key

Set-A				Set-B				Set-C				Set-D			
1.(d)	26.(a)	51.(d)	76.(d)	1.(d)	26.(b)	51.(a)	76.(d)	1.(a)	26.(d)	51.(d)	76.(a)	1.(d)	26.(d)	51.(d)	76.(b)
2.(a)	27.(d)	52.(c)	77.(d)	2.(d)	27.(d)	52.(d)	77.(a)	2.(d)	27.(d)	52.(d)	77.(d)	2.(a)	27.(b)	52.(a)	77.(d)
3.(d)	28.(a)	53.(d)	78.(c)	3.(d)	28.(b)	53.(a)	78.(c)	3.(a)	28.(c)	53.(d)	78.(a)	3.(b)	28.(a)	53.(d)	78.(b)
4.(a)	29.(c)	54.(b)	79.(a)	4.(d)	29.(c)	54.(b)	79.(d)	4.(b)	29.(a)	54.(d)	79.(c)	4.(d)	29.(c)	54.(a)	79.(c)
5.(c)	30.(a)	55.(b)	80.(c)	5.(b)	30.(c)	55.(c)	80.(a)	5.(c)	30.(c)	55.(b)	80.(a)	5.(c)	30.(d)	55.(c)	80.(c)
6.(b)	31.(b)	56.(a)	81.(c)	6.(c)	31.(d)	56.(c)	81.(d)	6.(c)	31.(d)	56.(c)	81.(a)	6.(d)	31.(d)	56.(b)	81.(d)
7.(a)	32.(d)	57.(b)	82.(d)	7.(b)	32.(a)	57.(d)	82.(c)	7.(d)	32.(c)	57.(b)	82.(a)	7.(d)	32.(c)	57.(a)	82.(d)
8.(b)	33.(a)	58.(b)	83.(c)	8.(c)	33.(d)	58.(d)	83.(d)	8.(d)	33.(c)	58.(c)	83.(d)	8.(c)	33.(d)	58.(b)	83.(d)
9.(a)	34.(c)	59.(a)	84.(b)	9.(b)	34.(a)	59.(b)	84.(b)	9.(b)	34.(c)	59.(b)	84.(c)	9.(a)	34.(b)	59.(a)	84.(d)
10.(b)	35.(d)	60.(c)	85.(b)	10.(a)	35.(c)	60.(b)	85.(b)	10.(b)	35.(b)	60.(a)	85.(d)	10.(c)	35.(b)	60.(b)	85.(b)
11.(a)	36.(b/d)	61.(d)	86.(d)	11.(b)	36.(b)	61.(c)	86.(a)	11.(c)	36.(d)	61.(b)	86.(b)	11.(d)	36.(a)	61.(c)	86.(c)
12.(a)	37.(d)	62.(e)	87.(b)	12.(d)	37.(a)	62.(d)	87.(b)	12.(d)	37.(a)	62.(d)	87.(d)	12.(e)	37.(b)	62.(a)	87.(b)
13.(d)	38.(c)	63.(c)	88.(a)	13.(a)	38.(b)	63.(c)	88.(b)	13.(c)	38.(c)	63.(a)	88.(b)	13.(c)	38.(b)	63.(d)	88.(c)
14.(c)	39.(d)	64.(c)	89.(c)	14.(c)	39.(a)	64.(b)	89.(a)	14.(b)	39.(d)	64.(c)	89.(c)	14.(c)	39.(a)	64.(a)	89.(b)
15.(d)	40.(c)	65.(b)	90.(d)	15.(d)	40.(b)	65.(b)	90.(c)	15.(b)	40.(a)	65.(d)	90.(c)	15.(b)	40.(c)	65.(a)	90.(a)
16.(b)	41.(d)	66.(d)	91.(a)	16.(b/d)	41.(c)	66.(d)	91.(d)	16.(d)	41.(d)	66.(b/d)	91.(d)	16.(d)	41.(a)	66.(a)	91.(b)
17.(d)	42.(d)	67.(a)	92.(d)	17.(d)	42.(a)	67.(b)	92.(a)	17.(b)	42.(c)	67.(d)	92.(a)	17.(a)	42.(d)	67.(d)	92.(d)
18.(b)	43.(d)	68.(c)	93.(a)	18.(c)	43.(d)	68.(a)	93.(b)	18.(a)	43.(d)	68.(c)	93.(d)	18.(c)	43.(a)	68.(a)	93.(a)
19.(c)	44.(d)	69.(d)	94.(b)	19.(d)	44.(a)	69.(c)	94.(d)	19.(c)	44.(b)	69.(d)	94.(a)	19.(d)	44.(b)	69.(c)	94.(c)
20.(c)	45.(b)	70.(a)	95.(c)	20.(c)	45.(a)	70.(d)	95.(c)	20.(d)	45.(b)	70.(c)	95.(c)	20.(a)	45.(c)	70.(a)	95.(d)
21.(c)	46.(c)	71.(d)	96.(c)	21.(a)	46.(a)	71.(d)	96.(d)	21.(d)	46.(a)	71.(c)	96.(b)	21.(c)	46.(c)	71.(a)	96.(b/d)
22.(a)	47.(b)	72.(a)	97.(d)	22.(a)	47.(d)	72.(c)	97.(d)	22.(a)	47.(b)	72.(a)	97.(a)	22.(d)	47.(d)	72.(a)	97.(d)
23.(d)	48.(c)	73.(b)	98.(d)	23.(d)	48.(a)	73.(c)	98.(c)	23.(b)	48.(b)	73.(d)	98.(b)	23.(c)	48.(d)	73.(d)	98.(c)
24.(a)	49.(b)	74.(d)	99.(b)	24.(c)	49.(c)	74.(c)	99.(a)	24.(d)	49.(a)	74.(a)	99.(a)	24.(b)	49.(b)	74.(c)	99.(d)
25.(a)	50.(a)	75.(c)	100.(b)	25.(d)	50.(a)	75.(b)	100.(c)	25.(c)	50.(c)	75.(a)	100.(b)	25.(b)	50.(b)	75.(d)	100.(c)

UPSC Civil Services (Preliminary) Exam GS-I

Set-D (Explanations)

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

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

Ans: (d)

Exp:

- Delimitation means the act or process of **fixing limits or boundaries** of territorial constituencies in a country to represent population changes. Under **Article 82**, the Parliament enacts a Delimitation Act after every Census.
- The Delimitation Commission in India is a high-power body whose orders have the force of law and **cannot be questioned before any court**.
- In India, **Delimitation Commissions** have been **constituted 4 times** – in **1952** under the Delimitation Commission Act, 1952, in **1963** under the Delimitation Commission Act, 1962, in **1973** under the Delimitation Act, 1972 and in **2002** under the Delimitation Act, 2002.

Hence, option (d) is correct.

Sources:

- Drishti IAS:** <https://www.drishtias.com/daily-updates/daily-news-analysis/delimitation-8>
- Other Sources:** <https://www.eci.gov.in/delimitation>

2. The Constitution (71st Amendment) Act, 1992 amends the Eighth 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)

Exp:

Eighth Schedule:

- It lists the official languages of the republic of India. Part XVII of the Indian constitution deals with the official languages in Articles 343 to 351.

The Eighth Schedule of the **Constitution specifies 22 languages** (originally 14 languages). These are Assamese, Bengali, Bodo, Dogri (Dongri), Gujarati, Hindi, Kannada, Kashmiri, Konkani, Mathili (Maithili), Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Santhali, Sindhi, Tamil, Telugu and Urdu.

- Sindhi was added by the 21st Amendment Act of 1967.
- Konkani, Manipuri and Nepali were added by the 71st Amendment Act of 1992.**
- Bodo, Dongri, **Maithili** and Santhali were added by the 92nd Amendment Act of 2003.

Hence, option (a) is correct.

Sources:

- Drishti IAS: Eighth Schedule of the Indian Constitution**
- Other Sources: Constitutional provisions relating to the Eighth Schedule**

3. Consider the following pairs:

Party	Its Leader
1. Bharatiya Jana Sangh	Dr. Shyama Prasad Mukherjee
2. Socialist Party	C. Rajagopalachari
3. Congress for Democracy	Jagjivan Ram
4. 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)

Exp:

- Bharatiya Jana Sangh** was founded in **1951** by **Syama Prasad Mukherjee**. Hence, pair 1 is correctly matched.
- Jai Prakash Narayan, Ram Manohar Lohia, and Acharya Narendra Dev** were prominent leaders of the **Socialist Party**. Hence, pair 2 is not correctly matched.
- The **Congress for Democracy (CFD)** was an Indian political party **founded in 1977** by **Jagjivan Ram**. Hence, pair 3 is correctly matched.

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- Swatantra Party was founded in the year 1959 by leaders opposing the socialistic policies of the Congress government. Some of the prominent leaders of the time including **C Rajagopalachari, Minoo Masani and N G Ranga** collaborated to form a liberal-conservative party. The party stood for market-based economy and the dismantling of the license raj. **Hence, pair 4 is not correctly matched**

Hence, option (b) is correct.

Sources:

- **Drishti IAS:**
 - **The Socialist Party: Jayaprakash Narayan and Nanaji Deshmukh Jayanti**
 - **Swatantra Party: C Rajagopalachari**
- **Other Sources:**
 - **Bharatiya Jana Sangh: HISTORY AND DEVELOPMENT OF BHARATIYA JANATA PARTY**
 - **The Socialist Party: History**
 - **The Congress for Democracy (CFD): NATIONAL POLITICAL PARTIES**
 - **Swatantra Part: Swatantra party's history reiterates the importance of strong Opposition in society, says author Aditya Balasubramanian - The Hindu**
 - <https://indianliberals.in/periodicals/swatantra-party/>

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

Ans: (d)

Exp:

- **Part IXA of the Constitution** was inserted by the Constitution (Seventy-fourth Amendment) Act, 1992. It contains provisions for **local self-government at the urban level or for the municipalities. Hence, statement 1 is correct.**

- **Part XVIII** of the Constitution contains provisions for **emergencies, including national, state and financial emergencies. Hence, statement 2 is correct.**

- **Article 368 in Part XX** of the Constitution deals with the power of parliament **to amend the Constitution and its procedures.** It states that the Parliament may amend the Constitution by way of addition, variation or repeal of any provision in accordance with the procedure laid down for the purpose. **Hence, statement 3 is correct.**

Hence, option (d) is correct.

Sources:

- **Drishti IAS:**
 - **Part IXA of the Constitution: Municipal Corporation (Amendment) Bill 2022.**
 - **Part XVIII of the Constitution: Emergency Provisions**
 - **Part XX of the Constitution: Procedure of Amendment**
- **Other Sources:**
 - **Part IXA of the Constitution: Part IXA Archives - Constitution of India**
 - **Part XVIII of the Constitution: Part XVIII Archives - Constitution of India.**
 - **Part XX of the Constitution: Article 368: Power of Parliament to amend the Constitution and procedure therefor**

5. 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)

Exp:

The **Seventh Schedule** of the Constitution contains **three lists** that distribute power between the **Centre and states** (Article 246).

- There are 98 subjects (originally 97) in the Union List, on which Parliament has exclusive power to legislate.
- The State List has 59 subjects (originally 66) on which states alone can legislate.

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General Studies Paper-I

- The Concurrent List has 52 subjects (originally 47) on which both the Centre and states can legislate,

Categorization of Subjects under Union List:

- **Interstate trade and commerce is under the Union list. Hence statement A is not correct.**
- **Inter-state migration is under the Union list. Hence statement B is not correct.**
- **Inter-state quarantine is under the Union list. Hence statement C is correct.**
- **Corporation tax is under the Union list. Hence statement D is not correct.**

Entry Number	List	Subject
42	Union	Interstate Trade and Commerce
81	Union	Inter-state migration
81	Union	Inter-state quarantine
85	Union	Corporation Tax

Sources:

- **M Laxmikant (Edition 6: page no 1355)**
- <https://www.constitutionofindia.net/schedules/list-i-union-list>
- <https://www.mea.gov.in/Images/pdf1/S7.pdf>

6. 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)

Exp:

- The **Supreme Court** described privacy and its importance in the landmark decision of **K.S. Puttaswamy vs Union of India in 2017** that the right to Privacy is **fundamental and inalienable** and attaches to the person covering all information about that person and the choices that he/she makes. The right to privacy is protected as an intrinsic part of the right to life and **personal liberty under Article 21**.

Hence, option (d) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtiias.com/daily-updates/daily-news-analysis/right-to-privacy-3>
- **Other Sources:** Right to Privacy as a fundamental Right

7. 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)

Exp:

■ Chief of Defence Staff (CDS):

- Its creation was recommended in 2001 by a Group of Ministers (GoM) that was tasked with studying the Kargil Review Committee (1999) report.
- The post of CDS was also established on the recommendation of Shekatkar committee headed by the Lt. General D.B. Shekatkar (retd.).

■ The duties and functions of the Chief of Defence Staff (CDS) include the following:

- To function as the Permanent Chairman of the Chiefs of Staff Committee. **Hence, statement 1 is correct.**
- However, **CDS will not exercise any military command over the three service chiefs**, CDS will ensure coordination in joint operations. **Hence, statement 2 is not correct.**
- To act as the Principal Military Advisor to Hon'ble Raksha Mantri on all Tri-Service matters. **Hence, statement 3 is correct.**
- To administer the Tri-Service organizations/agencies/commands.
- To be a member of the Defence Acquisition Council chaired by Hon'ble Raksha Mantri.

Hence, option (d) is correct.

Sources:

- **Drishti IAS:** Role of the Chief of Defence Staff
- **Other Sources:**
 - Chief of Defence Staff Page no. 6
 - Functions of Chief of Defence Staff (CDS)

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

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

Ans: (c)

Exp:

- **“Operation Sadbhavana” is a humanitarian initiative of the Indian Army aimed at** improving the social and economic conditions of the people of remote areas.
- Through various welfare activities, including running schools, developing infrastructure, and promoting national integration tours, the Indian Army aims to empower the local population, provide employment opportunities, and support education, thus contributing to nation-building efforts.

Hence, option (c) is correct.

Source:

- **Drishti IAS:** Rapid Fire Current Affairs
- **Other Sources:** operation sadbhavana in ladakh

9. 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)

Exp:

- **Canada and the United States share the longest international border in the world, spanning a massive 8,890 kilometres.** Hence, option (a) is correct.
 - In comparison, the Russia-Kazakhstan border measures 6,846 kilometres, and the Chile-Argentina border measures 5,308 kilometres.
- **India shares 3488 Km of border with China** that runs along the States of Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh.

Sources:

- **International perspective**
- **MANAGEMENT OF INDO-CHINA BORDER** India shares 3488 Km of border with China that runs along the States of Jammu & Kashmir, Hi

10. 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: (c)

Exp:

■ **About Ethics Committee:**

- This committee was constituted in Rajya Sabha in 1997 and in Lok Sabha in 2000. It enforces the code of conduct of members of Parliament. It examines the cases of misconduct and recommends appropriate action. Thus, it is engaged in maintaining discipline and decorum in Parliament.
- It is the only committee that probes lay citizen's complaints against lawmakers of the Lok Sabha.

■ **History of Ethics Committee in Lok Sabha:**

- In the case of Lok Sabha, a study group of the House Committee of Privileges, after visiting Australia, the UK, and the US in 1997 to look into practices pertaining to the conduct and ethics of legislators, recommended the constitution of an Ethics Committee, but it could not be taken up by Lok Sabha.
- The Committee of Privileges finally recommended the constitution of an Ethics Committee during the 13th Lok Sabha. The late Speaker, **G M C Balayogi, constituted an ad hoc Ethics Committee in 2000, which became a permanent part of the House only in 2015. Hence, statement 1 is correct.**

■ **Procedure for Complaints:**

- Initially, there was a provision under the rules of the Ethics Committee that allowed any Indian citizen to file a complaint against a lawmaker.

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- But, in 2014, a sub-committee suggested that such a provision would allow any political rival to lodge complaints against a lawmaker on flimsy grounds. The rule was then modified to the extent that a complaint had to be submitted to the panel through a lawmaker.
- Till then, any person can complain against a Member through another Lok Sabha MP, along with evidence of the alleged misconduct, and an affidavit stating that the complaint is not “false, frivolous, or vexatious”. If the Member himself complains, the affidavit is not needed. **Hence, statement 2 is not correct.**
- **However, the committee does not entertain complaints solely based on media reports or matters currently under judicial review. Hence, statement 3 is correct**

Hence, option (c) is correct.

Sources:

- **Drishti IAS: Lok Sabha’s Ethics Committee**
- **Other Sources: ETHICS COMMITTEE – AN INTRODUCTION**
 - <https://indianexpress.com/article/political-pulse/mahua-moitra-nishikant-dubey-parliament-ethics-committee-8987781/>
 - <https://indianexpress.com/article/explained/ls-ethics-committee-its-constitution-members-8999613/>
 - https://www.business-standard.com/india-news/ethics-committee-in-parliament-history-constitution-role-explained-123110300483_1.html

11. Who was the Provisional President of the Constituent Assembly before Dr. Rajendra Prasad took over?
- C. Rajagopalachari
 - Dr. B.R. Ambedkar
 - T.T. Krishnamachari
 - Dr. Sachchidananda Sinha

Ans: (d)

Exp:

- The Constituent Assembly first convened on 9th December 1946, with the Muslim League boycotting the session, demanding a separate state of Pakistan.
- As a result, only 211 members attended, **Dr. Sachchidananda Sinha, the oldest member, was chosen as the temporary President, following the French custom. Hence, option (d) is correct.**

- **Subsequently, Dr. Rajendra Prasad was elected as the President of the Assembly**, while H.C. Mukherjee and V.T. Krishnamachari were elected as Vice-Presidents, giving the Assembly two Vice-Presidents.

Sources:

- **Drishti IAS: Prelims Practice Series Indian Polity & Governance** Page no. 1
- **Other Sources: M Laxmikanth, 6th edition, Page no. 68**

12. 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?
- 1 only
 - 2 only
 - Both 1 and 2
 - Neither 1 nor 2

Ans: (c)

Exp:

Government of India Act (1935):

- **It provided for the establishment of an All-India Federation consisting of provinces and princely states as units. Hence, statement 1 is correct.**
 - It introduced bicameralism in six out of eleven provinces.
- The Government of India Act (1935) categorised subjects into three lists: the central list, the state list, and the concurrent list.
 - **The federal (central) list, comprising 59 items of national significance, includes defence, foreign affairs, finance, railways, currency, and the press. Hence, statement 2 is correct.**
 - The state list, with 54 items of regional importance, covers education, medicine, agriculture, law and order, and local government.
 - The concurrent list includes 36 items such as electricity, marriage, divorce, labour, and criminal law.
 - The remaining subjects were assigned to the Governor-General under residual powers.

Hence, option (c) is correct.

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SEVENTH SCHEDULE.

LEGISLATIVE LISTS.

LIST I.

FEDERAL LEGISLATIVE LIST.

1. His Majesty's naval, military and air forces borne on the Indian establishment and any other armed force raised in India by the Crown, not being forces raised for employment in Indian States or military or armed police maintained by Provincial Governments; any armed forces which are not forces of His Majesty, but are attached to or operating with any of His Majesty's naval, military or air forces borne on the Indian establishment; central intelligence bureau; preventive detention in British India for reasons of State connected with defence, external affairs, or the discharge of the functions of the Crown in its relations with Indian States.

2. Naval, military and air force works; local self-government in cantonment areas (not being cantonment areas of Indian State troops), the regulation of house accommodation in such areas, and, within British India, the delimitation of such areas.

3. External affairs; the implementing of treaties and agreements with other countries; extradition, including the surrender of criminals and accused persons to parts of His Majesty's dominions outside India.

Sources:

- **Drishti IAS: Important Sources of the Indian Constitution**
- **Other Sources: GOVERNMENT OF INDIA ACT 1935, Government of India Act, 1935.**

13. Which one of the following is a work attributed to playwright Bhasa?
- (a) Kavyalankara (b) Natyashastra
(c) Madhyama-vyayoga (d) Mahabhashya

Ans: (c)

Exp:

- **Bhasa** was the first known Sanskrit dramatist, and many of his complete plays have been discovered. He wrote 5 plays based on Mahabharata episodes like **Madhyamavyayoga, Pancharatra, Duta Vakyam, Duta Ghatotkacham, Karnabharam, Urubhangam, Hence, Option (c) is correct.**
- **Bhamaha** was a scholar presumably of the 7th Century who dealt with Sanskrit poetics. He is believed to have composed the Sanskrit **Kavyalankara** and was a contemporary of Dandin.
- The rules regarding performance, acting, gestures, stage direction and acting have been illustrated in the **Natyashastra by Bharata.**

- **Mahabhashya** was written by **Patanjali (2nd Century BCE)**. It is a commentary on selected rules of Sanskrit grammar from Pains's treatise, the **Ashtadhyayi** and **Katyayana's Varttika.**

Bhasa, another important playwright, was author of works such as the *Madhyamavyayoga, Duta-Ghatotkacha, Dutavalya, Balacharita* and *Charudatta*. Shudraka's *Mrichhakatika* and Bharavi's *Kiratarjuniya* are among the other prominent literary works of the period. Bhatti's *Ravanavadhya* (7th century) illustrates the rules of grammar while telling the story of Rama's life. Other great dramatists of the time such as Menha, author of a work called *Hayagrivavadhya*, are known through references and quotations in the writings of later writers and literary critics.

Source: A History of Ancient and Early Medieval India (From Stone Age to the 12th Century) Chapter 9 (Aesthetics and Empire, c. 300-600CE) **Page no. 537**

14. 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 Sain
(d) Lalitavistara

Ans: (c)

Exp:

Sarvastivāda Vinaya

- **The complete Sarvastivāda Vinaya** is extant in the Chinese Buddhist canon.
- In its early history, the Sarvastivāda Vinaya was the most common vinaya tradition in China.

Sanghabhuti is the author of a commentary on the Sarvastivada Vinaya. Hence, option (c) is correct.

Prajnaparamita Sutras

- **The Prajnaparamita Sutras** are among the oldest of the **Mahayana Sutras** and are the foundation of Mahayana Buddhist philosophy.
- These venerable texts are found in both the **Chinese Canon and Tibetan Canon** of Buddhist scriptures.
- Nagarjuna, who is the founder of a school of philosophy called Madhyamika is clearly developed from the Prajnaparamita Sutras.

Visuddhimagga

- **Visuddhimagga**, an encyclopedic and masterful summary and exposition of the **teaching of the Mahavihara school of Theravada Buddhism.**

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General Studies Paper-I

- It was written during the reign of the Sri Lankan king Mahanama in the 5th century CE by the great Buddhist commentator Buddhaghosa.

Lalitavistara

- Lalitavistara is a Sanskrit Buddhist text of great importance.
- Apart from being a **biography of Buddha**, originally of the Sarvastivada School of the **Hinayana sect**, it throws considerable light also on the **social and cultural history of India** during the early centuries of the Christian era.
- The *Lalitavistara* is not a unified text nor it is a composition of one author.

Source:- मध्य एशिया तथा चीन में भारतीय संस्कृति (सत्यकेतु विद्यालंकार) Page no- 176 and 177

<https://www.learnreligions.com/the-prajnaparamita-sutras-450029>

<https://www.ibiblio.org/radha/rpub007.htm>

15. 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: (b)

Exp:

Santiniketan, West Bengal

- Santiniketan established by **Rabindranath Tagore** was a **residential school and center for art based on ancient Indian traditions** and a vision of the unity of humanity transcending religious and cultural boundaries.
- Santiniketan has been recognized by UNESCO as **India's 41st World Heritage Site in the year 2023. Hence, statement (1) is correct.**

Rani-ki-Vav, Gujarat

- Rani-ki-Vav, on the banks of the Saraswati River, was initially built as a memorial to a king in the **11th century AD.**

- Rani-ki-Vav has been recognized by UNESCO as **India's 32nd World Heritage Site in the year 2014. Hence, statement (2) is NOT correct.**

Hoysala-style temple complexes, Karnataka

- The Sacred Ensembles of the Hoysala, the famed Hoysala temples of Belur, Halebid and Somanathapur in Karnataka have been added to the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage list in the year 2023. This inclusion marks the 42nd UNESCO World Heritage Site in India. **Hence, statement (3) is correct.**

Mahabodhi Temple Complex, Bodhgaya

- The Mahabodhi Temple Complex is one of the four holy sites related to the **life of the Lord Buddha**, and particularly to the attainment of Enlightenment.
- The Mahabodhi Temple Complex has been recognized by UNESCO as **India's 23rd World Heritage Site in the year 2002. Hence, statement (4) is NOT correct.**

Hence, option (b) is correct.

■ Drishti IAS: Santiniketan Becomes India's 41st World Heritage Site

- Hoysala Temples Now India's 42nd World Heritage Site

- Source: India - UNESCO World Heritage Convention,
 - Rani ki Vav, Patan | Patan, Gujarat, India

16. 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)

Exp:

- Article 368 in Part XX of the Constitution deals with the power of parliament to amend the Constitution and its procedures. It states that the Parliament **may amend the Constitution by way of addition, variation or repeal** of any provision in accordance with the procedure laid down for the purpose.
- The Parliament **can amend the provisions of the Constitution but cannot destroy its 'Basic Structure'**. This was ruled by the Supreme Court in the **Kesavananda Bharati case (1973).**

Hence, option (d) is correct.

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Sources:

- Drishtil IAS:- Procedure of Amendment
- Other Source: PART XX AMENDMENT OF THE CONSTITUTION

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)

Exp:

- Recently **Italy, Japan and South Korea** are frequently mentioned in the media for their low birth rates, aging population or declining population.
- South Korea's fertility rate is the **lowest in the world**, with the UN warning in 2021 that South Korea was on track to **halve its population by 2100. Hence, point 4 is correct.**
- **Japan** is facing a significant demographic challenge with record-low birth rates for the eighth consecutive year. The current fertility rate for Japan in 2024 is 1.374 births per woman.
 - The most recent data reveals a troubling decline, **with only 758,631 babies born in 2023, marking a 5.1 percent decrease from the previous year** and reaching the lowest point since statistical records commenced in 1899. **Hence, point 2 is correct.**
- **Italy's birth rate dropped to a record low in 2023, marking the 15th consecutive annual decline.** The fertility rate fell to 1.20 children per woman, far below the rate of 2.1 needed for a steady population. **Hence, point 1 is correct.**
 - Last year, Italy recorded 379,000 births, a 3.6% decline from 2022 and a 34.2% drop from 2008. There were 282,000 more deaths than births in 2023.
- **In South Africa, women give birth, on average, to 2.33 children** in their lifetimes. Although this rate is coming down it means the **population is continuing to grow.**

- **South Africa faces no fears of a substantially diminished working-age population, unlike a number of high-income countries.** Nonetheless, population structure estimates suggest that it will be home to a rising number of seniors.
- **In 2022, seniors made up 5.9% of South Africa's population. So, it is not yet home to an ageing population. Hence, point 5 is not correct.**
- **Nigeria is the largest and most populous country in Africa,** and the seventh largest in the world, and it currently has a population of 215 million.
 - The population growth rate of the country has been consistently high, always exceeding 2% since the 1960s. Currently, the population growth rate stands at 2.41%, according to the World Bank. **Hence, point 3 is not correct.**

Top 10 Countries with the Lowest Fertility Rates (by births per woman) - World Bank

Country	Fertility Rate
Taiwan	1.09
South Korea	1.11
Singapore	1.17
Ukraine	1.22
Hong Kong	1.23
Macau	1.23
Italy	1.24
Moldova	1.25
Puerto Rico	1.25
Spain	1.29

Hence, option (a) is correct.

Sources:

- With life expectancy increasing, here's how 4 countries are addressing their ageing populations.
- **South Korea:** <https://time.com/6835865/south-korea-fertility-rate-2023-record-low/>
- **Japan: Why is Japan grappling with record-low birth rates? Here's what the govt said - The Economic Times**
- **Italy: Births fall in Italy for 15th year running to record low | Reuters**
- **South Africa: South Africa's ageing population comes with new challenges. How best to adapt to them**

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- South African households are changing as birth rates come down
- Declining fertility rates will transform global economy, report says

■ **Nigeria: Unsustainable Demographics In Nigeria**

- <https://worldpopulationreview.com/country-rankings/total-fertility-rate>

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)

Exp:

- **Article 109** of the Constitution mentions a special procedure in respect of Money Bill. **Hence, statement 1 is correct.**
- Money Bills **must be introduced in the Lok Sabha** and cannot be introduced in the Rajya Sabha (Council of States). **Hence, statement 2 is correct.**
- The Rajya Sabha can **only make recommendations** on a Money Bill but does not have the power to amend or reject it. **Hence, statement 3 is correct.**
- Amendments to a Money Bill suggested by Rajya Sabha, which Lok Sabha may reject if it chooses to. **Hence, statement 4 is not correct.**

Hence, option (c) is correct.

Sources:

■ **Drishti IAS:**

- SC to Hear Challenge on Designation of Bills as Money Bills
- Misuse of Money Bills in India

■ **Other Sources:**

- <https://indiankanoon.org/doc/729393/>
- <https://www.constitutionofindia.net/articles/article-109-special-procedure-in-respect-of-money-bills/>

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

	Army	Airforce	Navy
1.	Brigadier	Air Commodore	Commander
2.	Major General	Air Vice Marshal	Vice Admiral
3.	Major	Squadron Leader	Lieutenant Commander
4.	Lieutenant Colonel	Group Captain	Captain

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: (d)

Exp:

The Army, Navy, and Air Force constitute **India's primary defence services**. They are recognised for their exceptional organization, structure, equipment, and discipline, capable of responding to threats and natural or man-made disasters efficiently. **Commissioned officers and non-commissioned personnel** across these armed forces hold equivalent ranks, with additional honorary ranks also established.

	Army	Airforce	Navy
1.	Brigadier	Air Commodore	Commodore (Not Commander)
2.	Major General	Air Vice Marshal	Rear Admiral (Not Vice Admiral)
3.	Major	Squadron Leader	Lieutenant Commander
4.	Lieutenant Colonel	Wing Commander (Not Group Captain)	Commander (Not Captain)

Hence, option (d) is correct.

Source: <https://vishwabharatigurukul.com/equivalent-ranks-indian-armed-forces/>

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20. 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)

Exp:

■ According to the THE NORTH EASTERN COUNCIL (AMENDMENT) ACT, 2002, following shall be the composition of the council:

- the person or persons for the time being holding the office of the Governor of the States
- 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
- The President shall nominate the Chairman of the Council

Hence, option (a) is correct

Amendment of section 3

3. In section 3 of the principal Act, -

(a) for sub-section (1), the following sub-section shall be substituted, namely :

“(1) There shall be a Council to be called the North Eastern Council which shall consist of the following members, namely :-

(i) the person or persons for the time being holding the office of the Governor of the States;

(ii) the Chief Ministers of the States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland Sikkim and Tripura ;

Provided that, if there is no Council of Ministers in any state referred to in clause (b), the President may nominate not more than one person to represent such State in the Council for so long as there is no Council of Ministers in such State;

(iii) three members to be nominated by the President”;

(b) for sub-section(3), the following sub-section shall be substituted namely :- “(3)the President shall nominate the Chairman of the Council”;

Hence, option (a) is correct.

Sources:

- <https://necouncil.gov.in/about-us/nec-amendment-act-2002-0>
- <https://necouncil.gov.in/sites/default/files/about-us/Amendment%20Act%202002.pdf>

21. 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 only

Ans: (c)

Exp:

Nari Shakti Vandan Adhiniyam, 2023

The Constitution (106th Amendment) Act, 2023, reserves **one-third** of all seats for women in Lok Sabha, State legislative assemblies, and the Legislative Assembly of the National Capital Territory of Delhi, including **those reserved for SCs and STs**.

- This Act shall come into effect after an exercise of **delimitation is undertaken which can be done only after a census is carried out**.
- After the **18th Lok Sabha election**, Census and delimitation will be done immediately and the Act will be implemented **only after that. Hence, statement 1 is NOT correct**.
- The reservation will be effective after the publication of the census conducted following the Act’s commencement and **endures for a 15-year period**, with potential extension determined by parliamentary action. **Hence, statement 2 is correct**.
- The Act will also apply to the seats reserved for SCs and STs in Lok Sabha and state legislatures within the reserved quota. **Hence, statement 3 is correct**.

Hence, option (c) is correct.

Sources:

- **Drishti IAS: Women Reservation Act, 2023 - Women in Politics**
- **Other Sources:**
 - Women’s Reservation Bill 2023 [The Constitution (One Hundred Twenty-Eighth Amendment) Bill, 2023],
 - Women’s reservation Bill will be implemented only after 2029: Amit Shah - The Hindu.

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22. 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: (d)

Exp:

Exercise MITRA SHAKTI-2023

- The ninth edition of the Joint Military exercise "Exercise MITRA SHAKTI-2023" was conducted between **India and Sri Lanka**. Hence, **statement 1 is NOT correct**.
- It commenced in **Aundh (Pune)**. Hence, **statement 2 is correct**.
- The Scope of the exercise includes synergising joint responses during **counter-terrorist operations**. Hence, **statement 3 is correct**.
- 15 personnel from the **Indian Air Force** and five personnel from Sri Lanka Air Force participated in the exercise. Hence, **statement 4 is correct**.

Hence, option (d) is correct.

Sources:

- **Drishti IAS:** Rapid Fire Current Affairs
- **Other Source:** india - sri lanka joint exercise mitra shakti – 2023 commenced today

23. 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)

Exp:

WRITS: The Supreme Court (under Article 32) and the high courts (under Article 226) can issue the writs of **habeas corpus, mandamus, prohibition, certiorari and quo warranto**. Further, the Parliament (under Article 32) can empower any other court to issue these writs.

- **Prohibition:** Prohibition Literally, it means 'to forbid'. It is issued by a **higher court to a lower court or tribunal to prevent** the latter from exceeding its jurisdiction or usurping a jurisdiction that it does not possess. Thus, **unlike the mandamus that directs activity, the prohibition directs inactivity**.
- The writ of prohibition **can be issued only against judicial and quasi-judicial authorities**. It is not available against administrative authorities, legislative bodies, and private individuals or bodies. Hence, **option (c) is correct**.
- The Writ of Prohibition is a legal term that implies 'to prohibit, prevent, forbid, or restrain' and is also known as 'Stay Order'.

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/daily-updates/daily-news-analysis/writs>
- **Sources:** The Writ of Prohibition - Legal Articles - Free Law

24. 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: (b)

Exp:

■ **Definition of Scheduled Tribes:**

- The Constitution of India in Article 366 (25) prescribe that the Scheduled Tribes means such tribes or tribal communities as are deemed under Article 342 of the Constitution to be Scheduled Tribes.

- **Article 342(1):** The **President with respect to any State/UT** (after consultation with the Governor in case of state) **may specify the tribes/tribal communities/part of or groups within tribes/ tribal communities** as a Scheduled Tribe in that State/UT. Hence, **statement 1 is NOT correct**.

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General Studies Paper-I

of economic collapse. The deep-rooted cause of Argentina's economic distress and chronic inflation is persistent public overspending financed by money creation. **Hence, pair 1 is correctly matched.**

- **Sudan:** At least 185 people killed and 1,800 wounded in Khartoum since fighting began between the Sudanese army and paramilitary forces. The conflict traces back to April 2019, when Sudan's long-serving President Omar al-Bashir was overthrown by military generals following a nationwide uprising. **Hence, pair 2 is correctly matched.**
- **Turkey:** Turkey has been a member of NATO since 1952 and plays a significant role within the alliance due to its strategic location and military capabilities. There have been tensions and disagreements between Turkey and other NATO members on various issues, but Turkey has not withdrawn from the alliance. **Hence, pair 3 is not correctly matched.**

Sources:

- <https://www.economicsobservatory.com/what-economic-challenges-does-argentina-face-today#:~:text=With%20one%20of%20the%20world's,the%20brink%20of%20economic%20collapse.>
- <https://indianexpress.com/article/explained/explained-global/why-are-sudans-army-and-paramilitary-forces-fighting-each-other-8559862/>
- <https://www.nato.int/nato-welcome/index.html>
- <https://foreignpolicy.com/2023/12/06/turkey-nato-membership-alliance-russia-erdogan-sweden-syria/>

28. Consider the following statement:

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.

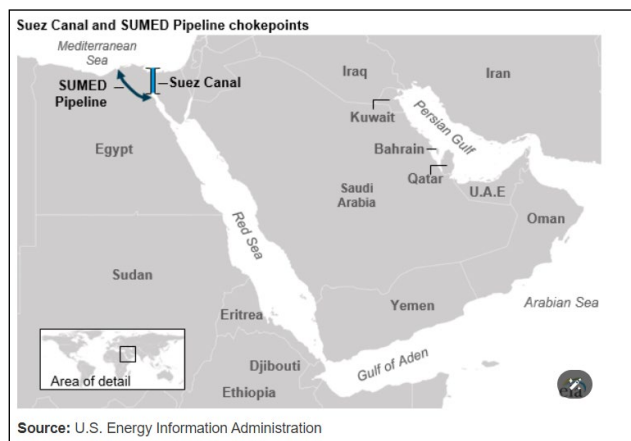
Which one of the following is correct in respect of the above statements?

- (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: (a)

Exp:

- The Suez Canal and the SUMED Pipeline are strategic routes for Persian Gulf crude oil, petroleum products, and liquefied natural gas (LNG) shipments to Europe and North America. **Hence, statement I is correct.**
- The Suez Canal and SUMED pipeline are located in Egypt and connect the Red Sea with the Mediterranean Sea. **Hence, statement II is correct.**
- **Therefore, Both statement I and statement II are correct and statement II explains statement I. Hence, option (a) is correct.**



Sources:

<https://www.eia.gov/todayinenergy/detail.php?id=40152>

29. 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)

Exp:

- **Red Sea**, narrow strip of water extending southeastward from Suez, Egypt, for about 1,200 miles (1,930 km) to the Bab el-Mandeb Strait, which connects with the Gulf of Aden and thence with the Arabian Sea.

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- The Red Sea region receives very little precipitation in any form, although prehistoric artifacts indicate that there were periods with greater amounts of rainfall. **Hence, statement 1 is correct.**
- **No water enters the Red Sea from rivers**, and rainfall is scant; but the evaporation loss—in excess of 80 inches per year—is made up by an inflow through the eastern channel of the Bab el-Mandeb Strait from the Gulf of Aden. **Hence, statement 2 is correct.**

Sources:

- **Drishiti IAS:** <https://www.drishitias.com/daily-updates/daily-news-analysis/red-sea-1>
- **Other Sources:** <https://www.britannica.com/place/Red-Sea>

30. According to the Environmental Protection Agency (EPA), which one of the following is the largest source of sulphur dioxide emissions?
- Locomotives using fossil fuels
 - Ships using fossil fuels
 - Extraction of metals from ores
 - Power plants using fossil fuels

Ans: (d)

Exp:

The largest source of SO₂ in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities. Smaller sources of SO₂ emissions include:

- Industrial processes such as extracting metal from ore
- Natural sources such as volcanoes
- Locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content.

Hence, option (d) is correct.

Sources: <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics>

31. 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?

- Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

- Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- Statement-I is correct, but Statement-II is incorrect
- Statement-I is incorrect, but Statement-II is correct

Ans: (d)

Exp:

- If the United States of America were to default on its debt, holders of US Treasury bonds would still have the legal right to exercise their claims to receive payment. **Hence, statement I is not correct.**
- The U.S. Government debt, including Treasury bonds, bills, and notes, is not backed by any specific hard assets. Instead, it is backed by the “full faith and credit” of the U.S. government. **Hence, statement II is correct.**

Hence, option (d) is correct.

Sources:

- <https://www.reuters.com/article/idUS1727210731/#:~:text=If%20the%20U.S.%20government%20misses,federal%20government%20and%20U.S.%20contractors.>
- <https://www.pgpf.org/blog/2023/05/the-federal-government-has-borrowed-trillions-but-who-owns-all-that-debt>
- <https://www.gao.gov/americas-fiscal-future/federal-debt#:~:text=The%20federal%20government%20borrows%20money%20from%20the%20public%20by%20issuing,a%20wide%20range%20of%20maturities>
- <https://www.investopedia.com/terms/f/full-faith-credit.asp>

32. 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?

- Both Statement-I and Statement-II are correct and Statement-I Statement-II explains
- Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- Statement-I is correct, but Statement-II is incorrect
- Statement-I is incorrect, but Statement-II is correct

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Ans: (c)

Exp:

- A syndicated loan is granted to a borrower by two or more banks, known as participants, controlled by a single loan agreement. The loan is usually administered by one bank, the agency bank, on behalf of the syndicate member.
- Syndicated loans are issued by a collection of lenders that combine to credit a major borrower, such as a firm, an individual initiative, or a government.
- Syndicated lending primarily aims to distribute the risk of a borrower default across numerous lenders, banks, or institutional investors, such as pension funds and hedge fund. **Hence, statement I is correct.**
- The loan can involve a fixed amount of funds, a credit line, or a combination of the two. **Hence, statement II is not correct.**

Hence, option (c) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtias.com/daily-updates/daily-news-analysis/syndicated-loan>
- **Other Sources:**
 - <https://imarticus.org/blog/debt-capital-markets-and-syndicated-lending/#:~:text=Syndicated%20lending%20primarily%20aims%20to,to%20support%20significant%20business%20deals.>
 - <https://www.investopedia.com/terms/s/syndicatedloan.asp>

33. 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?

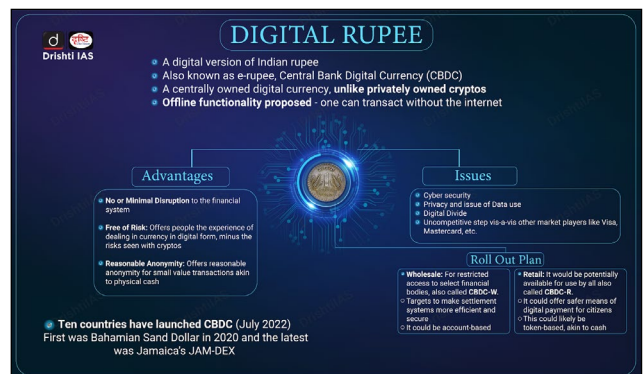
- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 4 only
- (d) 1, 2 and 4

Ans: (d)

Exp:

Digital Rupee:

- Digital currency refers to any currency that is available in electronic form. The Digital Rupee is virtual money, serving the same purpose as physical money.
- The Digital Rupee is a centralized digital currency directly regulated by the RBI, maintaining the stability and trust associated with traditional currencies.
- The Digital Currency (e₹-R) in the form of a digital token represents legal tender.
- Thus, digital currency is a sovereign currency issued by the Reserve Bank of India in alignment with its monetary policy. **Hence, statement 1 is correct.**
- It appears as a liability on the RBI Balance sheet. It is issued in the same denominations that paper currency and coins are currently issued. **Hence, statement 2 is correct.**
- It is **not** insured against inflation by its very design. **Hence, statement 3 is not correct.**
 - The Reserve Bank of India (RBI) has stated that the digital rupee is essentially the same as the physical rupee, only in digital form, and exchangeable at a 1:1 ratio. Physical currency, including rupees, is also susceptible to inflation. As the price of goods and services rises, the purchasing power of a rupee (physical or digital) decreases.
- It is freely convertible against commercial bank money and cash. As in the case of cash, it will not earn any interest and can be converted to other forms of money, like deposits with banks. **Hence, statement 4 is correct.**



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Sources:

- **Drishiti IAS:** <https://www.drishitiias.com/daily-updates/daily-news-analysis/central-bank-digital-currency-2>
- **Other Sources:**
 - [https://www.pib.gov.in/PressReleasePage.aspx?PRID=1896721#:~:text=Central%20Bank%20Digital%20Currency%20\(CBDC,token%20that%20represents%20legal%20tender&text=The%20Reserve%20Bank%20of%20India,\) %20on%20December%2001%2C%202022.](https://www.pib.gov.in/PressReleasePage.aspx?PRID=1896721#:~:text=Central%20Bank%20Digital%20Currency%20(CBDC,token%20that%20represents%20legal%20tender&text=The%20Reserve%20Bank%20of%20India,) %20on%20December%2001%2C%202022.)
 - <https://rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=1218>

34. 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)

Exp:

- The ancient texts refer to **Mahavira as Nayaputta** (son of Nayas). This referred to his clan of origin, which is translated in sanskrit as jnatra. **Hence, point 1 is not correct.**
- Buddha (born c. 6th–4th century BCE, Lumbini, near Kapilavastu, Shakra republic, Kosala kingdom [now in Nepal]—died, Kusinara, Malla republic, Magadha kingdom [now Kasia, India]) was the founder of Buddhism, one of the major religions and philosophical systems of southern and eastern Asia and of the world.
- The clan name of the historical figure referred to as the Buddha (whose life is known largely through legend) was **Gautama** (in Sanskrit) or Gotama (in Pali), and his given name was **Siddhartha** (Sanskrit: “he who achieves his aim”) or Siddhattha (in Pali). He is frequently called **Shakyamuni**, “the sage of the Shakra clan.” In Buddhist texts, he is most commonly addressed as **Bhagavat** (often translated as “Lord”), and as the **Tathagata**, which can mean either “one who has thus come” or “one who has thus gone.

Hence, option (b) is correct

Sources:

- <https://www.speakingtree.in/blog/mahavira>
- <https://www.britannica.com/biography/Buddha-founder-of-Buddhism>

35. Consider the following information:

Archaeological Site	State	Description
1. Chandraketugarh	Odisha	Trading Port town
2. Inamgaon	Maharashtra	Chalcolithic site
3. Mangadu	Kerala	Megalithic site
4. Salihundam	Andhra Pradesh	Rock-cut 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)

Exp:

- Chandraketugarh is an archaeological site located in the North 24 Parganas district of West Bengal, India. Chandraketugarh’s location near the riverine routes suggests it was a significant trade hub, connecting the region with other parts of India and possibly Southeast Asia. **Hence, pair 1 is not correctly matched.**
- Inamgaon is a significant archaeological site located in the Pune district of Maharashtra, India. It is one of the most important sites for understanding the Deccan Chalcolithic (Copper Age) culture. **Hence, pair 2 is correctly matched.**
- Mangadu, in Kerala is a newly discovered prehistoric site where megaliths are found in large numbers. The date of the Mangadu megaliths is approximately from 1000 B.C. to 100 B.C. **Hence, pair 3 is correctly matched.**
 - The megalithic monuments at Mangadu consisted of 28 hard compact and unhewn laterite blocks within an area of 5 cents of land. The stone blocks roughly form three circles of 3.5 metres, 4.15 metres and 5 metres in diameter respectively.
- The village of Salihundam of Srikakulam district in Andhra Pradesh, located on the banks of the Vamsadhara River, shot into fame when archaeological excavations here revealed an ancient Buddhist settlement. This site is now protected by the ASI, contains several votive stupas, a mahastupa, chaityas and viharas. However, the site is not known for rock cut shrines. **Hence, pair 4 is not correctly matched.**

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Sources:

- <https://timesofindia.indiatimes.com/travel/destinations/chandraketugarh-a-lesser-known-archaeological-site-in-west-bengal/articleshow/70645871.cms>
- <https://www.archaeology.kerala.gov.in/monuments/madankavurnburial-site/44#:~:text=The%20megalithic%20monuments%20at%20Mangadu,5%20metres%20in%20diameter%20respectively.>
- <https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/cd697339-1a2b-471a-ac4b-96e6ad38a1c5/content>
- <https://aptourism.gov.in/destinations/37/salihundam>
https://asc.iitgn.ac.in/assets/publications/research_papers/Iron_Age_in_Kerala_Vinod_V_AR_Pillai_2016.pdf

36. 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)

Exp:

- **Bhatkal** is the southernmost point of the Uttara Kannada district in Karnataka. It is located on the south bank of the river Sharabi.
- The name Bhatkal is said to be derived from the Jain saint Bhatta Akalanka who lived here in the ninth century CE.
- Bhatkal came into limelight with the advent of the Portuguese in India. Since the time of Vasco de Gama, Bhatkal chiefs were paying tributes to the Portuguese rulers.
- Emperor **Krishnadevaraya** allowed the Portuguese to build a fort here in 1510.

Hence, option (a) is correct.

Sources:

- <https://www.deccanherald.com/lifestyle/travel/confluence-faiths-677840.html>
- <https://puratattva.in/bhatkal-a-port-of-contention-2/>

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

1. Under the Ryotwari Settlement of revenue collection, the peasants were exempted from revenue payment in case of bad 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/are correct?

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

Ans: (b)

Exp:

- Under the Ryotwari Settlement of revenue collection, **peasants were not exempted from revenue payment** in case of bad harvests or natural calamities. **Hence, statement 1 is not correct.**
- In 1790, a ten-year settlement of tax to be paid was made with the zamindars, and in 1793, the settlement was made permanent.
 - The zamindar, as the owner of the land, could sell, mortgage, or transfer it; his heirs could inherit the land along with rights and liabilities.
 - But, under the **'sunset clause'** introduced in 1794, if the **tax due was not paid** by sunset of a **certain date**, the zamindari would be taken over by the government and auctioned, and the **rights would be transferred to the new owner. Hence, statement 2 is correct.**

Hence, option (b) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/to-the-points/paper1/land-revenue-systems-in-british-india>
- **Other Sources:**
 - Spectrum: a-brief-history-of-modern-India (Page-558-562,2020 edition),
 - History of modern India: Bipin Chandra(Page -100-104)

38. Consider the following statements:

1. There are no 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 1 nor 2

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Ans: (b)

Exp:

- The **Parable of the Two Birds** finds a mention in the Upanishads. Hence, **statement 1 is not correct.**
- The beginnings of **philosophy and mysticism** in **Indian religious history** occurred during the period of the compilation of the Upanishads, roughly between **the 7th and 5th BCE.**
- However, the first versions of the Puranas were likely composed between the **3rd and 10th centuries CE.** Hence, **statement 2 is correct.**

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/blog/vedism>
- **Other Sources:**
 - <https://www.thehindu.com/features/friday-review/religion/Analogy-of-two-birds/article14633384.ece#~:text=The%20analogy%20of%20the%20two%20birds%20mentioned%20in%20the%20Katopanishad>
 - <https://www.britannica.com/topic/Hinduism/Sutras-shastras-and-smritis>

39. 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)

Exp:

- The **International Grains Council (IGC)** is an intergovernmental organisation that seeks to:
 - Further international cooperation in grains trade;
 - Promote expansion, openness and fairness in the grains sector;
 - Contribute to grain market stability and enhance world food security.
- India is a **member of the International Grain Council.** Hence, **statement 1 is correct.**
 - Each member is designated as an importer or exporter on the **basis of its average trade in grains, rice and oilseeds.**

- A country **need not be a member** of the **International Grains Council** for exporting or importing rice and wheat. Hence, **statement 2 is not correct.**

■ **Source:** <https://www.igc.int/en/about/aboutus.aspx>

40. 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)

Exp:

- **Garba** is a **ritualistic and devotional dance** that is performed on the occasion of the Hindu festival of Navaratri, which is dedicated to the worship of **feminine energy or 'Shakti'.**
- The latest inclusion in the **Intangible Cultural Heritage List of UNESCO** is the **Garba Dance of Gujarat in December 2023.**
 - **Chhau dance- 2010**
 - **Durga puja- 2021**
 - **Kumbh mela- 2017**

Hence, **option (c) is correct.**

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/daily-updates/daily-news-analysis/unesco-recognition-to-gujarat-garba-dance>
- **Other Sources:** <https://ich.unesco.org/en/lists>

41. 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

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Ans: (a)

Exp:

- The Sahel region, home to **Niger, Burkina Faso, Chad, Mali, Mauritania, and Senegal**, has witnessed political instability and ethnic tensions. Hence, **statement 1 is correct**.
- **Niger** has been in the midst of a political upheaval as a **military coup** has taken control, ousting the democratically elected President in 2023. Hence, **statement 2 is correct**.
- Hence, **option (a) is correct** because both **Statement-I and Statement-II are correct** and **Statement-II explains Statement-I**.

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/daily-updates/daily-news-analysis/coup-in-niger>
- **Other Sources:**
 - <https://press.un.org/en/2024/sc15562.doc.htm>
- <https://www.orfonline.org/expert-speak/military-takeover-in-gabon-a-coup-d-tat-or-palace-revolution>

42. 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?

- Both Statement-I and Statement-II are correct and Statement-II explains Statement-I
- Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- Statement-I is correct, but Statement-II is incorrect
- Statement-I is incorrect, but Statement-II is correct

Ans: (d)

Exp:

- Imports of American apples have surged **40 times** in **three months** after India removed the “**retaliatory import duty**” on **US apples** in September 2023. Hence, **statement 1 is not correct**.
- In India, the Food Safety and Standards Act, of 2006, prohibits import, manufacture, use or sale of GM food without FSSAI’s approval. Hence, **statement 2 is correct**.

Hence, **option D is correct** because **statement-I is incorrect** and **statement-II is correct**.

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/daily-updates/daily-news-analysis/fssai-lacks-data-on-genetically-modified-organisms#:~:text=In%20India%2C%20the%20Food%20Safety,%2C%20a%20non%2Dfood%20crop.>
- **Other Sources:**
 - [https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1935460,](https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1935460)
 - <https://www.downtoearth.org.in/news/food/known-unknowns-india-s-apex-food-regulator-has-no-data-on-presence-of-gmos-in-fresh-produce-imported-over-past-5-years-92757#:~:text=In%20India%2C%20the%20Food%20Safety,GM%20food%20without%20FSSAI's%20approval.>
 - [https://www.thehindubusinessline.com/economy/agri-business/imports-of-us-apples-rise-40-times-in-3-months-as-india-scrap-retaliatory-duty/article67631576.ece#:~:text=In%20entire%202022%2D23%20\(Sep%20million%20boxes%2C%20he%20added.](https://www.thehindubusinessline.com/economy/agri-business/imports-of-us-apples-rise-40-times-in-3-months-as-india-scrap-retaliatory-duty/article67631576.ece#:~:text=In%20entire%202022%2D23%20(Sep%20million%20boxes%2C%20he%20added.)

43. 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

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

Which of the statements given above is/are correct?

- 1 only
- 1 and 2 only
- 2 and 3 only
- 1, 2 and 3

Ans: (a)

Exp:

- As per **Article 96** - At any sitting of the House of the People, while any resolution for the removal of the Speaker from his office is under consideration, the Speaker, or while any resolution for the removal of the Deputy Speaker from his office is under consideration, the Deputy Speaker, shall not, though he is present, preside, and the provisions of clause (2) of article 95

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was not prorogued on its adjournment sine die. (141st Session of Rajya Sabha which commenced on 23 February 1987 was adjourned sine die on 20 March 1987 and was prorogued on 24 March 1987. **Hence, statement 2 is correct.**

- In India, the Lok Sabha has a five-year term, but **can be dissolved earlier**. According to Article 83(2) of the Constitution, completion of five years from the first day of its meeting amounts to dissolution of the Lower House. The **Lower House can also be dissolved earlier by the President on the advice of the Prime Minister**. It can also be dissolved if the President feels that no viable government can be formed after the resignation or fall of a regime. **Hence, statement 2 is correct.**

¹[85. Sessions of Parliament, prorogation and dissolution.—(1) The President shall from time to time summon each House of Parliament to meet at such time and place as he thinks fit, but six months shall not intervene between its last sitting in one session and the date appointed for its first sitting in the next session.

- (2) The President may from time to time—
- (a) prorogue the Houses or either House;
 - (b) dissolve the House of the People.]

Sources:

- **Drishti IAS:**
 - <https://www.drishtiiias.com/to-the-points/Paper2/parliament-part-ii>
- **Other Sources:**
 - Constitution of India
 - <https://www.mpa.gov.in/sites/default/files/parlia3.pdf>
 - <https://www.india.gov.in/my-government/indian-parliament>

46. 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 explains Statement-II
- (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)

Exp:

- Recently, the European Parliament approved the **Net-Zero industry Act** to bolster EU production in technologies needed for decarbonisation. **Hence, statement I is correct.**
- The European Union has said, “it is aiming to become the first major economy to go “climate neutral” by **2050.**” **Hence, statement II is not correct.**

Hence, option (c) is correct.

Sources:

- <https://www.europarl.europa.eu/topics/en/article/20190926STO62270/what-is-carbon-neutrality-and-how-can-it-be-achieved-by-2050>
- <https://www.bbc.com/news/science-environment-46360212>
- <https://www.europarl.europa.eu/news/en/press-room/20240419IPR20568/meps-adopt-plans-to-boost-europe-s-net-zero-technology-production>

47. 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)

Exp:

- With an exodus of more than 7.72 million people since 2014, the refugee crisis in Venezuela is the largest displacement crisis in Latin America and one of the largest in the world.
 - Of the 7.72 million people, almost 84% settled in Latin America and the Caribbean and faced significant challenges accessing food, housing and livelihood. **Hence, statement I is not correct.**

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- In 2021, crude oil reserves in Venezuela reached close to 304 billion barrels, more than triple the figure reported at the beginning of the previous decade. In turn, **Venezuela boasted the largest crude oil reserves worldwide. Hence, statement 2 is correct.**

Sources:

- <https://disasterphilanthropy.org/disasters/venezuelan-refugee-crisis/>
- <https://disasterphilanthropy.org/disasters/venezuelan-refugee-crisis/#:~:text=The%20country%20has%20the%20world%20%E2%80%99s%20largest%20oil%20reserves%2C%20which%20financed%20almost%2058%25%20of%20the%20government%E2%80%99s%20budget.>
- <https://oilprice.com/Energy/Crude-Oil/Top-10-Countries-With-Largest-Oil-Reserves.html#:~:text=Oil%20Reserves%20FAQ&text=Venezuela%20is%20currently%20the%20country,300%20billion%20barrels%20of%20oil.>

48. 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)

Exp:

- The Digital India Land Records Modernization Programme -DILRMP (erstwhile National Land Record Modernization Programme-) was revamped and converted as a **Central Sector Scheme** with effect from 1st April, 2016 with **100% funding by the Centre. Hence, statement 1 is correct.**
- Digitization of cadastral maps is one of the major components and activities of DILRMP. **Hence, statement 2 is correct.**

S.N.	Component	Activities
1.	Computerization of Land Records	(i) Computerization of Record of Rights; (ii) Digitization of cadastral maps (iii) Integration of Record of Rights (textual) and cadastral maps (spatial); (iv) Data centres at state level.
2.	Computerization of Registration	(i) Computerization of Sub Registrar Offices (SROs); (ii) Connectivity between Sub-registrar offices and Tehsils; and (iii) Integration of registration and land records.
	Survey I Resurvey	Survey I resurvey and updating of survey & settlement records.
4.	Modern Record Rooms	Modern Record rooms I Land records management Centres at tehsil level.
5.	Training & Capacity building	Creation of DILRMP Cells at Administrative Training Institutes and I or the Survey I Revenue I Patwari Training Institutes of States
6.	Project Management Unit	To provide human resources and other infrastructure to provide support for the effective implementation of various components of DILRMP.
7.	Computerization of Revenue Court Management System	Computerization of all Revenue Courts in the country and their integration with Land records.
8.	Integration of Aadhaar number with the land record database on voluntary basis	To link Aadhaar number with Records of Rights (RoR).

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- On attaining the age of 60 years, the subscriber will get the assured monthly pension of **Rs.3000/-** as the case may be. **Hence, statement 3 is correct.**
- If the beneficiary dies, the spouse of the beneficiary shall be entitled to receive **50% of the pension as family pension.** Family pension is **applicable only to spouses** (and not unmarried daughters). **Hence, statement 4 is not correct.**

Hence, option (b) is correct

Sources:

- **Drishti IAS: Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM)**
- **Other Sources:**
 - PM-SYM
 - **SALIENT FEATURES OF PRADHAN MANTRI SHRAM YOGI MAAN-DHAN (PM-SYM)**
 - **PM-SYM|Ministry of Labour & Employment|Government of India**

- Longwave radiation is absorbed by atmospheric gases, particularly **carbon dioxide and other greenhouse gases.** **Hence, statement 2 is correct.**

Hence, option (d) is correct.

Sources:

- **Drishti IAS: Main Answer Writing Practice**
- **Other Sources: INSOLATION AND TEMPERATURE**

52. 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)

Exp:

- The **troposphere** is the lowermost layer of the atmosphere. Its average height is **13 km** and extends roughly to a height of **8 km** near the poles and about **18 km** at the equator. Troposphere is thickest at the equator, and much thinner at the **North and South Poles** **Hence, statement 1 is correct.**
- Thickness of the troposphere is greatest at the equator because heat is transported to great heights by strong **convection currents.** **Hence, statement 2 is correct and it is the correct explanation of statement 1.**

Hence, option (a) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/sambhav-daily-answer-writing-practice/papers/2023/the-atmosphere-divided-layers-based-temperature-significance-layer-human-life-earth-temperature-inversion-factors-controlling-temperature-distribution-gspaper1-geography/print#:~:text=Its%20average%20height%20is%2013,dust%20particles%20and%20water%20vapour.>

51. 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 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: (d)

Exp:

- The earth radiates heat energy like all other hot objects. This is known as terrestrial radiation. Incoming solar radiation through short waves is termed as **insolation.**
 - Radiation is the process by which solar energy reaches the earth and the earth loses energy to outer space.
- Atmosphere is transparent to short waves and opaque to long waves. Hence energy leaving the earth's surface i.e. **terrestrial radiation heats up the atmosphere more than the incoming solar radiation i.e. insolation.** **Hence, statement 1 is not correct.**

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Other Sources:

- NCERT-Class-11-Geography-Part-1.pdf
- Why is troposphere higher at equator but lower at poles and reasons for lowest layer of atmosphere being deeper at equator than at the poles? | ResearchGate

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: (d)

Exp:

■ A **Volcanic Hazard** refers to any potentially dangerous volcanic process that puts human lives, livelihoods or infrastructure at risk of harm.

- Several hazards may affect the area around the volcano, such as lava flows, **pyroclastic flows**, lahars, landslides or debris avalanches.
- Volcanic activity also produces hazards that can affect areas far from the volcano, such as **ash falls or tephra and releases of gas**.

■ Ninety-nine percent of the gas molecules emitted during a volcanic eruption are **water vapor (H₂O)**, carbon dioxide (CO₂), and **sulfur dioxide (SO₂)**.

- The **remaining one percent is composed of small amounts** of hydrogen sulfide, carbon monoxide, hydrogen chloride, hydrogen fluoride, and other minor gas species.

■ Volcanoes **do not directly release usable forms of nitrogen**. The intense activity during eruptions can trigger lightning strikes.

- These lightning strikes break apart **nitrogen molecules (N₂) in the air**, allowing nitrogen atoms to combine with other elements to form usable **nitrogen compounds**.

Hence, option (d) is correct.

Sources:

- What gases are emitted by Kilauea and other active volcanoes? | U.S. Geological Survey Volcanic hazards - British Geological Survey
- Volcanic Lightning May Have Retooled the Nitrogen Needed for Life - Eos

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)

Exp:

■ **Isotherms** are imaginary lines that connect points having the **same temperature** at a given time or on average over a given period.

- These lines are used in **meteorology and climatology** to represent temperature distributions across geographical areas.

■ In January the isotherms **deviate to the north over the ocean** and to the **south over the continent**. This can be seen on the North Atlantic Ocean. **Hence, statement 1 is correct.**

■ The presence of **warm ocean currents, Gulf Stream and North Atlantic drift**, make the Northern Atlantic Ocean warmer and the isotherms bend towards the north. **Hence, statement 2 is not correct.**

■ Over the land the temperature decreases sharply and the isotherms bend towards south in Europe.

Hence, option (a) is correct.

Source:

■ **SOLAR RADIATION, HEAT BALANCE AND TEMPERATURE**

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) Code d'Ivoire and Ghana
- (d) Madagascar and Mozambique

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Ans: (c)

Exp:

- Côte d'Ivoire and Ghana are the two largest cocoa-growing countries, accounting for nearly 60% of global cocoa production, followed by Ecuador with 9%.
 - With 2.2 million tonnes of cocoa in 2022, Côte d'Ivoire is the world's largest producer, accounting for a third (30 %) of the global total.
 - ❖ Familiar brands like Cadbury and Nestle mostly source their cocoa from this country.
 - Ghana is another top producer of cocoa. The production of cocoa contributes significantly to the nation's GDP.
 - In Asia, Indonesia is the largest producer.
- West Africa hosts the world's leading cocoa-producing countries, generating 3.9 million tonnes in 2022.
 - The following graphic highlights the top cocoa producers according to data from the UN FAO:

Country	2022 Production, Tonnes
Côte d'Ivoire	2.2M
Ghana	1.1M
Indonesia	667K
Ecuador	337K
Cameroon	300K
Nigeria	280K
Brazil	274K
Peru	171K
Dominican Republic	76K
Other	386K

Hence, option (c) is correct.

Sources:

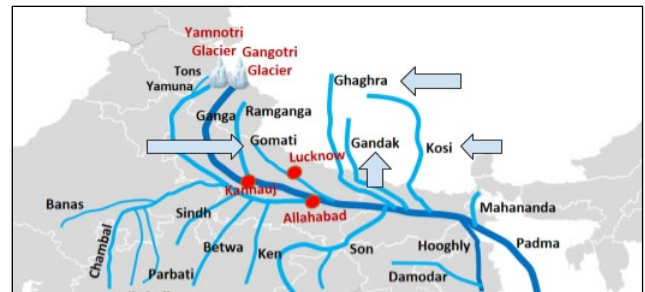
- Drishti IAS: Chocolate Industry Meltdown
- Other Sources:
 - The World's Top Cocoa Producing Countries - The New Diplomat
 - Cocoa Producing Countries 2024

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)

Exp:

- The Ganga river system is the largest in India having a number of perennial and non-perennial rivers originating in the Himalayas in the north and the Peninsula in the south, respectively.
- The important left bank tributaries are the Ramganga, the Gomati, the Ghaghara, the Gandak, the Kosi and the Mahananda.
 - The river finally discharges itself into the Bay of Bengal near Sagar Island.
- Gomati is a tributary of Ganga river and an alluvial river of the Ganga Plain.
 - It originates near Mainkot, from Gomat Taala lake also known as Fulhar Jheel in Madhotanda. This is located around 30 kilometres from Pilibhit town in UP.
- The Ghaghara originates in the glaciers of Mapchachungo, gathering waters from its tributaries Tila, Seti, and Beri, and exits the mountains through a deep gorge at Shishapani.
- The Gandak consists of the Kaligandak and Trishulganga streams. It rises in the Nepal Himalayas between Dhaulagiri and Mount Everest, drains central Nepal, enters the Ganga plain in Bihar's Champaran district, and joins the Ganga at Sonpur near Patna.
- The Kosi, an antecedent river, originates north of Mount Everest in Tibet with its main stream Arun.
 - It crosses the Central Himalayas in Nepal, where it is joined by the Son Kosi from the west and the Tamur Kosi from the east, forming the Sapt Kosi after merging with the Arun.
- The correct order from West to East is: Gomati, Ghaghara, Gandak, Kosi.



Hence, option (b) is correct

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Sources:

- Drishti IAS: <https://www.drishtiias.com/pdf/1589811013-e-flows-in-river-ganga.pdf>
- Other Sources:
 - <https://ncert.nic.in/textbook/pdf/kegy103.pdf>
 - <https://www.downtoearth.org.in/news/urbanisation/dte-exclusive-2020-order-on-floodplain-zoning-declaring-gomti-non-perennial-river-draws-flak-90655>
 - <https://ncert.nic.in/textbook/pdf/kegy103.pdf>

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)

Exp:

- **Weathering** is a term which describes the **general process by which rocks are broken down at the Earth's surface** into such things as sediments, clays, soils and substances that are dissolved in water.
 - Weathering can be **biological, chemical or physical**.
- **Rainfall and temperature** can affect the rate in which rocks weather. Greater rainfall increases the rate of chemical weathering.
 - Rocks in tropical regions exposed to **abundant rainfall and hot temperatures** weather much faster than similar rocks residing in cold, dry regions. **Hence, statement I is correct.**
- **Carbon dioxide from the air is dissolved in rainwater, making it slightly acidic.** Normal rain has a pH of about 5.6, it is slightly acidic because **carbon dioxide (CO₂)** dissolves into it forming weak carbonic acid. **Hence, statement II is correct.**

- A reaction can occur when the rainwater comes into contact with minerals in the rock, causing weathering.
- Acid rain usually has a pH between **4.2 and 4.4**.
- **Oxygen** is one of the most **important elements collected from falling rainwater**.
 - This dissolved oxygen is not the same as the oxygen in the water molecule.
 - Dissolved oxygen is present in all rainwater and surface supplies due to contact with the atmosphere. **Hence, statement III is correct.**
 - Rainwater is typically devoid of all dissolved solids but **contains dissolved gases (oxides of carbon, nitrogen and sulphur)** which result in pH values of about 5.5 or lower.
- From the above, we can conclude that **both statement II and statement III are correct and explain statement I.**

Hence, option (a) is correct.

Sources:

- <https://ncert.nic.in/textbook/pdf/kegy206.pdf>
- <https://www.bgs.ac.uk/discovering-geology/geological-processes/weathering/>
- <https://www.freedrinkingwater.com/blogs/water-health/710-oxygen-water>
- <https://www.freedrinkingwater.com/blogs/water-health/710-oxygen-water#:~:text=Oxygen%20gas%20is%20one%20of,to%20contact%20with%20the%20atmosphere.>

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: (b)

Exp:

- The **North Sea** is one of the numerous seas in the **Atlantic Ocean**. It is part of the North-East Atlantic Region and opens into the Atlantic Ocean via the English Channel.

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59. Consider the following information :

Waterfall	Region	River
1. Dhuandhar	Malwa	Narmada
2. Hundru	Chota Nagpur	Subarnarekha
3. Gersoppa	Western Ghats	Netravati

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

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

Ans: (a)

Exp:

- At the heart of India, dissected by mighty **Narmada**, are the marble cliffs of **Bhedaghat** and the roaring falls of **Dhuandhar** in the **Jabalpur District of Madhya Pradesh**.
 - **Malwa**, a region in west-central northern India, occupies a plateau of volcanic origin in the western part of Madhya Pradesh state.
 - The region includes the Madhya Pradesh districts of **Dewas, Dhar, Indore, Jhabua, Mandsaur, Neemuch, Rajgarh, Ratlam, Shajapur, Ujjain**, and parts of Guna and Sehore, and the Rajasthan districts of Jhalawar and parts of Banswara and Chittorgarh.
 - ❖ It does not cover Jabalpur. Thus the Dhuandhar falls, though situated at the Narmada river, are **not a part of the Malwa Plateau**. Hence, pair 1 is not correctly matched.
- The **Hundru Falls, Ranchi** is created on the course of the **Subarnarekha River**, where it falls from a height of 320 feet creating the highest waterfalls of the state.
 - It is situated at a distance of 45 kilometres from the main city of Ranchi.
 - The Falls is a surprise package for the visitors who love the panoramic view of the **Chota Nagpur Plateau**. Hence, pair 2 is correctly matched.
- **Gersoppa Falls (Jog Falls)**, a major attraction in Karnataka, is located in the Shimoga district of Karnataka. Also known by alternative names of **Gerusoppe Falls and Jogada Gundi**.
 - Four cascades, known as Raja, Rani, Rover and Rocket merge to form the huge waterfall on the **Sharavathi River** (and not Netravati River). Hence, pair 3 is not correctly matched.

- It is the Atlantic's 13th largest sea, covering approximately 570,000 square kilometres or about 0.5% of the ocean.
 - It is about 970 km long and 580 km wide and lies within Europe's north-west continental shelf.
- The North Sea region borders some of the strongest economies in Europe.
 - To the west of the sea is Great Britain (Scotland and England).
 - The Northern and Central European countries such as **Germany**, Belgium, Denmark, the Netherlands, and **Norway** bound the sea to the east and west.
- **Finland and Russia do not share a border with the North Sea.**

Hence, option (b) is correct

Sources:

- Drishti IAS: <https://www.drishtiias.com/daily-updates/daily-news-analysis/uk-s-north-sea-drilling>
- Other Sources:
- <https://www.worldatlas.com/seas/north-sea.html>

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- ❖ The **Sharavathi River** basin is situated in the central part of the Western Ghats.
 - The river in the central Western Ghats is recognized as a hot speck in the biodiversity hotspot.
- Only one pair is correctly matched: **Hundru-Chota Nagpur-Subernarekha**

Hence, option (a) is correct.

Sources:

- **Hundru Waterfall | DISTRICT RANCHI, GOVERNMENT OF JHARKHAND | India.**
- **Dhuandhar Falls, Jabalpur | District Administration Jabalpur, Government of Madhya Pradesh | India**
- https://kbb.karnataka.gov.in/storage/pdf-files/Completed%20Projects/SCR22_ETR52_Ecological%20Profile%20of%20Sharavathi%20River%20Basin.pdf

60. Consider the following information :

Region	Name of the mountain range	Type of mountain
1. Central Asia	Vosges	Fold mountain
2. Europe	Alps	Block mountain
3. North America	Appalachians	Fold mountain
4. 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: (b)

Exp:

- **Block Mountains** are created when large areas are broken and displaced vertically.
 - The uplifted blocks are termed as **horsts** and the lowered blocks are called **graben**.
 - The Rhine valley and the **Vosges mountain in Europe (not Central Asia)** are examples of such mountain systems. Hence, pair 1 is not correctly matched.
- The Himalayan Mountains and the **Alps in Europe** are **young fold mountains** with rugged relief and high conical peaks. Hence, pair 2 is not correctly matched.
- The **Appalachians in North America** and the Ural mountains in Russia have rounded features and low elevation. They are very **old fold mountains**. Hence, pair 3 is correctly matched.

- **The Andes** are the world's longest mountain chain.
 - They stretch along the west coast of **South America**.
 - Here, the Nazca plate is moving down below the South American plate. The **Andes are mostly being folded up** from the rocks of the South American plate. Hence, pair 4 is correctly matched.
- Hence, only two pairs are correctly matched: **North America-Appalachians-Fold Mountain** and **South America-Andes-Fold Mountain**.

Hence, option (b) is correct

Sources:

- <https://ncert.nic.in/ncerts/l/fess206.pdf>
- <https://education.nationalgeographic.org/resource/fold-mountain/4th-grade/>

61. The Organisms “Cicada, Froghopper and Pond Skater” are :
- (a) Birds
 - (b) Fish
 - (c) Insects
 - (d) Reptiles

Ans: (c)

Exp:

- **Cicadas** are **insects** that spend most of their lives underground as nymphs, feeding off the sap of tree roots. The males “sing” by vibrating a membrane on the sides of their bodies.
- **Froghopper** is an **insect** belonging to the superfamily **Cercopoidea**. They have pointed heads and tapered bodies that are raised at the head end, looking not unlike a frog that is about to jump.
- A **pond skater**, also known as a **water strider**, is a family of long-legged **insects** that live on the surface of the water. They belong to the order of **Hemiptera**, which also includes aphids, bed bugs, and cicadas.

Hence, option (c) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtiiias.com/daily-updates/daily-news-analysis/cicadas#:~:text=Cicadas%20are%20insects%20that%20belong,have%20two%20pairs%20of%20wings.>
- **Other Sources:**
 - <https://naturalhistory.si.edu/education/teaching-resources/life-science/periodical-cicadas>
 - <https://www.wlgf.org/froghoppers.html>
 - <https://a-z-animals.com/animals/pond-skater/>

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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)

Exp:

- Many chewing gums found in the market are **non-biodegradable**. Gum is considered a source of **environmental pollution** due to its **stickiness** and **non-biodegradable** nature. **Hence, statement-I is correct.**
- Many chewing gums contain **plastic in their gum base**, which is usually **polyvinyl acetate (PVA)**. Each year, chewing gum generates more than 105 tonnes of **“plastic” garbage**.
 - Accordingly, chewing gum residue can be considered a dangerous **environmental pollutant**. **Hence, statement-II is correct.**
- **Both Statement I and Statement-II are correct and Statement-II is the correct explanation for Statement I.**

Hence, option (a) is correct

Sources:

Other Sources:

- <https://ecofreek.com/biodegradable/is-gum-biodegradable/>
- https://www.researchgate.net/figure/Percent-of-biodegradability-of-bio-A-and-synthetic-B-chewing-gums-over-a-20-weeks_fig1_325792519#:~:text=Commercially%2C%20chewing%20gum%20is%20produced,as%20a%20dangerous%20environmental%20pollutant.
- <https://gudgum.in/products/raspberry-gum-15-pieces-per-pack-21g#:~:text=Yes%2C%20you%20read%20that%20right,surroundings%20for%20years%20on%20end!>

63. Consider the following pairs :

Country	Animal found in its natural habitat
---------	-------------------------------------

- | | |
|---------------|--------|
| 1. Brazil | Indri |
| 2. Indonesia | Elk |
| 3. Madagascar | Bonobo |

How many of the pairs given above are correctly matched?

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

Ans: (d)

Exp:

- **Indri** is endemic to **Madagascar**. They are found in the **northeastern** part of **Madagascar**. It is an **endangered** species. **Hence, pair one is not correctly matched.**
- **Elk (red deer)** is found in **North America** and in the high mountains of **Central Asia**.
 - Their traditional range extended from **65 degrees North** in Norway to **33 degrees North** in Africa.
 - Elk have been **introduced** to **Ireland, Argentina, Chile, Australia** and **New Zealand**. **Hence, pair two is not correctly matched.**
- **Bonobos** can only be found in forests south of the **Congo River** in the **Democratic Republic of Congo (DRC)**. **Hence, pair three is not correctly matched.**

Hence, option D is correct

Sources:

■ **Drishti IAS:**

- <https://www.drishtiiias.com/daily-news-analysis/madagascars-indigenous-species>
- <https://www.drishtiiias.com/daily-updates/daily-news-analysis/mining-threatens-african-great-apes>

■ **Other Sources:**

- <https://www.britannica.com/animal/indri-lemur-species>
- <https://www.worldwildlife.org/species/bonobo>
- <https://www.britannica.com/animal/elk-mammal>
- https://animaldiversity.org/accounts/Indri_indri/
- https://animaldiversity.org/accounts/Cervus_elaphus/

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- (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)

Exp:

- **100 Million Farmers** is a platform supporting **private and public leaders** to position **food and farmers** as central pillars on the **global climate and nature agenda**, and accelerate 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**.
- Targeting a **fifth** of the **world's farmer population**, the initiative aims to reach one hundred million farmers in order to reach a **tipping point** that could shape the **future of food and water systems**.

Hence, option (a) is correct.

Sources:

- <https://initiatives.weforum.org/100-million-farmers/home>

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)

Exp:

- **Distributed energy resources (DER)** refers to often **smaller generation units** that are located on the consumer's side of the meter.
- **Examples** of distributed energy resources that can be installed include:
 - **Battery storage**
 - **Biomass generators**, which are fuelled with waste gas or industrial and agricultural by-products.
 - **Fuel cells**
 - **Rooftop solar photovoltaic units.**
- Other examples of DER include **wind generating units, open and closed cycle gas turbines, hydro and mini-hydro schemes** etc.

Hence, option (d) is correct.

Sources:

- **Drishti IAS:**

- <https://www.drishtias.com/daily-news-analysis/draft-policy-framework-for-distributed-renewable-energy>

- **Other Sources:**

- [https://www.aemc.gov.au/energy-system/electricity/electricity-system/distributed-energy-resources#:~:text=Distributed%20energy%20resources%20\(DER\)%20refers,battery%20storage](https://www.aemc.gov.au/energy-system/electricity/electricity-system/distributed-energy-resources#:~:text=Distributed%20energy%20resources%20(DER)%20refers,battery%20storage)
- [https://www.iea.org/reports/unlocking-the-potential-of-distributed-energy-resources#:~:text=Distributed%20energy%20resources%20\(DERs\)%20are,solar%20panels%20and%20battery%20storage](https://www.iea.org/reports/unlocking-the-potential-of-distributed-energy-resources#:~:text=Distributed%20energy%20resources%20(DERs)%20are,solar%20panels%20and%20battery%20storage).
- <https://www.nrel.gov/docs/fy02osti/31570.pdf>

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)

Exp:

- The **fig tree** (*Ficus Microcarpa*) is famous for its **aerial roots**, which **sprout** from **branches** and eventually **reach** the **soil**.
- The tree also has a **unique relationship** with a **wasp** that has **coevolved** with it and is the **only** insect that can **pollinate** it.

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- The body **shapes** and **sizes** of the **wasps** correspond exactly to those of the **fig fruits**, and each species of fig **produces** a unique **perfume** to attract its specific **wasp pollinator**.

Hence, option (a) is correct.

Source:

- <https://news.illinois.edu/view/6367/1023624754#:~:text=%E2%80%94%20The%20banyan%20fig%20tree%20Ficus,insect%20that%20can%20pollinate%20it>.

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)

Exp:

- Many **butterflies** are armed with **poisonous chemicals**. The bright colors warn predators of the danger.
 - **Red Lacewing** gets both its long life and its **toxin** from the **pollen** it eats and the poison it **stores** as a **caterpillar** as it eats the **passion flower**.
 - **Pollen** is converted in its body to toxins called **cyanogenic glycosides**.
- Various species of **fish** contain **poisonous biotoxins**.
 - Certain fish like groupers, barracudas, moray eel, sturgeon, sea bass, red snapper, amberjack, mackerel, parrot fish, surgeonfish, and triggerfish can cause **fish poisoning**.
- **Some frogs** can be **poisonous**.
 - Poisonous frogs **produce** and **store alkaloid** poisons or toxins in their **skin**, which makes them harmful to touch.
 - They are commonly called **poison arrow frogs** or **poison dart frogs**.

Hence, option (c) is correct.

Sources:

- <https://www.discoverwildlife.com/animal-facts/insects-invertebrates/poisonous-butterflies>
- <https://www.hopkinsmedicine.org/health/conditions-and-diseases/fish-poisoning#:~:text=Certain%20>

[fish%E2%80%94groupers%2C%20barracudas%2C,eating%20moray%20eel%20or%20barracuda.](https://www.webmd.com/a-to-z-guides/what-to-know-about-poisonous-frogs)

- <https://www.webmd.com/a-to-z-guides/what-to-know-about-poisonous-frogs>
- <https://www.discoverwildlife.com/animal-facts/insects-invertebrates/poisonous-butterflies#:~:text=Yet%20they%20seem%20untroubled%20by,warn%20predators%20of%20the%20danger>.

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)

Exp:

- **Cashew** (*Anacardium occidentale*) is native to tropical regions of **Brazil**.
 - The cashew was first discovered by **Europeans** in **Brazil** around **1558**.
 - The **Portuguese** brought cashews to **Goa** in about **1560**.
Hence, it is not native to India.
- **Papaya** cultivation had its origin in **South Mexico** and **Costa Rica**. The papaya first appeared in the **Dominican Republic** and **Panama** in the early 16th century. **Hence, it is not native to India.**
- **Red sanders** is a **native and endemic to India** and can only be found in the Southern parts of the Eastern Ghats. **Hence, it is native to India.**

Hence, option (a) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtiias.com/daily-news-analysis/red-sanders>
- **Other Sources:**
 - <https://wholesalenutsanddriedfruit.com/history-of-the-cashew/>
 - <https://nhb.gov.in/Horticulture%20Crops/Papaya/Papaya1.htm>

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- <https://www.traffic.org/publications/reports/factsheet-on-indias-red-sanders-in-illegal-wildlife-trade/#:~:text=As%20a%20native%20species%20to,are%20regulated%20by%20the%20State.>

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) 1 and 3 only (d) 1, 2 and 3

Ans: (a)

Exp:

- The **Donyi Polo Airport** is a **Greenfield Airport** which is located in the capital Itanagar. It reflects the people's reverence of the **Sun (Donyi)** and the **Moon (Polo)**, and symbolizes the rich cultural heritage of the State.
- **Kushinagar Airport** in Kushinagar district of Uttar Pradesh is a **Greenfield Airport**.
- **Airports Authority of India** has undertaken development/expansion **Vijayawada Airport** in Andhra Pradesh. **It is not a greenfield project.**

Hence, option (a) is correct.

Source:

- **Drishti IAS:** <https://www.drishtiias.com/daily-news-analysis/kushinagar-international-airport>
- **Other Sources:**
 - <https://www.aai.aero/en/airports/itanagar>
 - <https://sansad.in/getFile/annex/259/AU2087.pdf?source=pqars>
 - <https://pib.gov.in/PressReleasePage.aspx?PRID=1947374>

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)

Exp:

- **Water vapor** is water in **gaseous form**. It is Earth's most abundant **greenhouse gas**.
 - The **troposphere** contains **99%** of the water vapor in the atmosphere. Water vapor content **decreases rapidly** with **altitude**. Hence, **statement 1 is correct**.
- Water vapor **concentrations** vary with **latitudinal** position (north to south). They are **greatest** above the **tropics**, where they might be as high as **3%** and **decrease** toward the **polar regions**. Hence, **statement 2 is not correct**.

Hence, option (a) is correct.

Sources:

- https://earthobservatory.nasa.gov/global-maps/MYDAL2_M_SKY_WV
- <https://www.albany.edu/faculty/rgk/atm101/structur.htm>
- <https://web.physics.ucsb.edu/~lgrace/chem123/troposphere.htm>

73. Consider the following description :

1. Annual and daily range of temperatures is low.
2. Precipitation occurs throughout the year.
3. Precipitation varies between 50 cm - 250 cm.

What is this type of climate?

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

Ans: (d)

Exp:

- **Marine west coast climate** is located poleward from the Mediterranean climate on the west coast of the continents.
 - The main areas are: Northwestern Europe, west coast of North America, north of California, southern Chile, southeastern Australia and New Zealand. Due to marine influence, the temperature is moderate and in winter, it is warmer than for its latitude.
 - The mean temperature in summer months ranges from 15°-20°C and in winter 4°-10°C. **The annual and daily ranges of temperature are small. Precipitation occurs throughout the year. Precipitation varies greatly from 50-250cm.**

Hence, option (d) is correct.

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Marine West Coast Climate (Cfb)

Marine west coast climate is located poleward from the Mediterranean climate on the west coast of the continents. The main areas are: Northwestern Europe, west coast of North America, north of California, southern Chile, southeastern Australia and New Zealand. Due to marine influence, the temperature is moderate and in winter, it is warmer than for its latitude. The mean temperature in summer months ranges from 15 -20 C and in winter 4 -10 C. The annual and daily ranges of temperature are small. Precipitation occurs throughout the year. Precipitation varies greatly from 50-250cm.

Sources:

■ NCERT CLASS XI (PHYSICAL GEOGRAPHY) | Chapter 11: World Climate and Climate Change | Page No. 94

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)

Exp:

- The Coriolis force is an apparent force that **acts on objects moving within a rotating reference frame**, such as the surface of the Earth. It is named after the French mathematician and engineer Gaspard-Gustave de Coriolis, who first described it mathematically in the early 19th century. It deflects the wind to the right direction in the northern hemisphere and to the left in the southern hemisphere.
 - **The deflection is more when the wind velocity is high. Hence, statement 1 is correct.**
- The Coriolis force is directly proportional to the angle of latitude. **It is maximum at the poles and is absent at the equator.**

- **At the equator, the Coriolis force is zero** and the wind blows perpendicular to the isobars. The low pressure gets filled instead of getting intensified. That is the reason why tropical cyclones are not formed near the equator. **Hence, statement 2 is correct.**

Hence, option (c) is correct.

Coriolis Force

The rotation of the earth about its axis affects the direction of the wind. This force is called the Coriolis force after the French physicist who described it in 1844. It deflects the wind to the right direction in the northern hemisphere and to the left in the southern hemisphere. The deflection is more when the wind velocity is high. The Coriolis force is directly proportional to the angle of latitude. It is maximum at the poles and is absent at the equator.

Sources:

■ **Drishti IAS:**

- <https://www.drishtiiias.com/sambhav-daily-answer-writing-practice/papers/2023/tri-cellular-model-atmospheric-circulation-emphasis-forces-responsible-model-understand-term-precipitation-world-distribution-rainfall-gspaper1-geography/print#:~:text=Coriolis%20Force%3A%20The%20Coriolis%20force,polar%20cells%20to%20blow%20eastward.>

■ **Other Sources:**

- NCERT CLASS XI (PHYSICAL GEOGRAPHY) | Chapter 9: Atmospheric Circulation and Weather Systems | Page No. 79

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)

Exp:

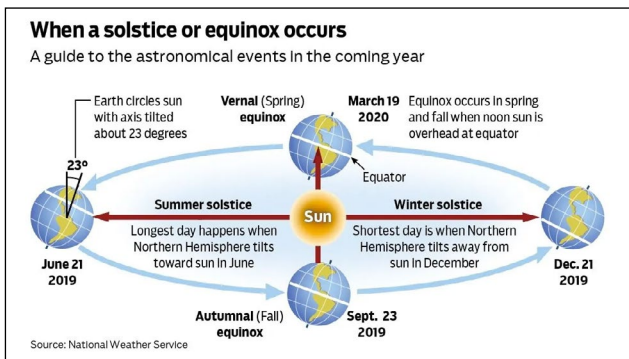
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- On 21st June, the Northern Hemisphere is tilted towards the sun. **The rays of the sun fall directly on the Tropic of Cancer. As a result, these areas receive more heat.** The areas near the poles receive less heat as the rays of the sun are slanting. **The North Pole is inclined towards the sun and the places beyond the Arctic Circle experience continuous daylight for about six months.**
 - The further north one moves from the equator, the more light one receives during the summer solstice. At the Arctic Circle, the sun never sets during the solstice.
- Since a large portion of the Northern Hemisphere is getting light from the sun, it is summer in the regions north of the equator. The longest day and the shortest night at these places occur on 21st June.
 - At this time in the Southern Hemisphere all these conditions are reversed. It is winter there. The nights are longer than the days. This position of the earth is called the Summer Solstice.

Hence, option (d) is correct.

Look at the Figure 3.3. You will see that on 21st June, the Northern Hemisphere is tilted towards the sun. The rays of the sun fall directly on the Tropic of Cancer. As a result, these areas receive more heat. The areas near the poles receive less heat as the rays of the sun are slanting. The North Pole is inclined towards the sun and the places beyond the Arctic Circle experience continuous daylight for about six months. Since a large portion of the Northern Hemisphere is getting light from the sun, it is summer in the regions north of the equator. The longest day and the shortest night at these places occur on 21st June. At this time in the Southern Hemisphere all these conditions are reversed. It is winter season there. The nights are longer than the days. This position of the earth is called the **Summer Solstice.**



Sources:

- **Drishti IAS:** https://www.drishtiiias.com/daily-news-analysis/summer-solstice-21st-june
- **Other sources:**
 - NCERT CLASS VI | Chapter 3: Motions of the Earth | Page No. 20
 - <https://statesman.com/gcdn/authoring/2019/06/20/NAAS/ghows-TX-8bc81caf-102f-3403-e053-0100007fc66d-751b5106.jpeg>

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 follow denotes that region?
- (a) Amazon Basin (b) Congo Basin
(c) Kikori Basin (d) Rio de la Plata Basin

Ans: (b)

Exp:

- The Congo Basin is home to the **world's largest tropical peatlands**, along with Brazil and Indonesia. **The peat swamp forest of the Congo Basin stores around 29 billion tons of carbon – approximately equivalent to three years' worth of global greenhouse gas emissions** – while the Basin as a whole absorbs nearly 1.5 billion tons of carbon dioxide a year.
 - The Basin **stretches across six countries-** Cameroon, Central African Republic, Democratic Republic of the Congo, Congo, Equatorial Guinea and Gabon.
- Hence, option (b) is correct

Source:

- <https://www.unep.org/news-and-stories/story/critical-ecosystems-congo-basin-peatlands#:~:text=Many%20of%20the%20discussions%20will,along%20with%20Brazil%20and%20Indonesia>

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 material.
 2. PFAS are not easily degraded in the environment.
 3. Persistent exposure to PFAS can lead to bioaccumulation in animal bodies.

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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)

Exp:

- **Per- and polyfluoroalkyl substances (PFAS)** are chemicals that resist grease, oil, water, and heat. They were first used in the 1940's and are now in hundreds of products including stain- and water-resistant fabrics and carpeting, cleaning products, paints, and fire-fighting foams. Certain PFAS are also authorised by the FDA for limited use in cookware, food packaging, and food processing equipment.
 - PFAS are found widespread in drinking water, foods, food packaging materials and other consumer products. **Hence, statement 1 is correct.**
- Chemically, individual PFAS can be very different. However, all have a carbon-fluorine bond, which is very strong and therefore, **they do not degrade easily. Hence, statement 2 is correct.**
- People may encounter different PFAS chemicals in various ways. Over time, people may take in more of the chemicals than they excrete, a process that leads to bioaccumulation in bodies. **Hence, statement 3 is correct.**

Hence, option (d) is correct.

Sources:

- **Drishti IAS:**

<https://www.drishtiias.com/daily-updates/daily-news-analysis/forever-chemicals>

- **Other Sources:**

- <https://www.niehs.nih.gov/health/topics/agents/pfc>
- <https://pubmed.ncbi.nlm.nih.gov/32476019/>
- National Institute of Environmental Health Sciences

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: (b)

Exp:

- Parasitoids are invariably insects and their larvae that feed at the expense of a host. The host is typically another insect though a few attack other types of arthropods, such as spiders, or mollusks. A parasitoid has a life-history intermediate between that of a predator and a parasite.
- **Parasitoids include species of wasps, flies** (e.g. tachinid flies), **beetles (carabid beetles) and worms** (e.g. gordian worms).
- **Centipedes are exclusively predatory.** They eat most anything that is small enough and soft bodied, which includes insects and other small animals. **Hence, they cannot be considered parasitoids.**
- The food of termites is mainly cellulose, which is obtained from wood, grass, leaves, humus, manure of herbivorous animals, and materials of vegetative origin (e.g., paper, cardboard, cotton). **Hence, termites cannot be categorised as parasitoids.**
- **Only three of the given options are parasitoids. Hence, option (b) is correct**

Sources:

- <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/parasitoid>
- <https://www.britannica.com/science/parasitoid>
- <https://australian.museum/learn/animals/insects/predators-parasites-and-parasitoids/>
- <https://www.britannica.com/animal/termite/Nutrition>
- <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/carabidae>
- <https://extension.usu.edu/planthealth/research/centipede>

79. 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) All three (d) None

Ans: (c)

Exp:

- **Peanut or groundnut (*Arachis hypogaea*) is a species in the legume or “bean” - Fabaceae family (commonly known as the pea family).** India is the second-largest producer of groundnuts in the world.

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- Horse gram (*Macrotyloma uniflorum*) belongs to the **family Fabaceae and is one of the minor or lesser-known neglected legumes** mainly cultivated in Asian and African countries.
- Soybean belongs to the pea family and is an edible seed. It is economically the most important bean in the world, providing vegetable protein for millions of people and ingredients for hundreds of chemical products.

Hence, option (c) is correct.

Sources:

- https://apeda.gov.in/apedawebsite/SubHead_Products/Ground_Nut.htm
- https://agriexchange.apeda.gov.in/product_profile/prd_profile.aspx?categorycode=0501#:~:text=The%20groundnut%20belongs%20to%20the,in%20height.
- <https://www.britannica.com/plant/soybean>
- https://www.researchgate.net/figure/Nutritional-composition-of-horsegram-Macrotyloma-uniflorum-Lam-Verdec-tbl1_283023597

80. 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?

- Both Statement-I and Statement-II are correct and Statement-II explains Statement-I
- Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
- Statement-I is correct, but Statement-II is incorrect
- Statement-I is incorrect, but Statement-II is correct

Ans: (c)

Exp:

- *Pteropus giganteus*, commonly known as the Indian flying fox, is a remarkable bat species native to the Indian subcontinent.
- *Pteropus giganteus*, is listed as a ‘vermin’ in the Indian Wildlife (Protection) Act, 1972, due to its destructive tendencies towards fruit farms. **Hence, statement I is correct.**

- The Indian Flying fox is one of the largest species of bats in the world. It has a wing-length of 1.2-1.5m. These bats are endemic to South Central Asia.
- Indian flying foxes maintain a frugivorous diet, supplementing it with insects as well as flowers, containing juice and nectar. Although their favorite fruits are figs, the animals also consume mango, guava, bananas, and various cultivated fruits. **Hence, statement II is not correct.**

Hence, option (c) is correct.

Sources:

- <https://timesofindia.indiatimes.com/city/gurgaon/they-may-be-called-vermins-but-fruit-bats-are-vital-for-ecosystem/articleshow/81263203.cms>
- <https://www.downtoearth.org.in/coverage/bat-tracks-14620>
- https://animalia.bio/indian-flying-fox#google_vignette

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

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

Ans: (d)

Exp:

- **Total Fertility Rate (TFR):** The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman.

Hence, option (d) is correct.

Source:

- **Drishti IAS:**
 - [https://www.drishtiiias.com/daily-updates/daily-news-analysis/replacement-level-fertility#:~:text=India's%20total%20fertility%20rate%20\(TFR,Survey%20\(NFHS%2D5\).](https://www.drishtiiias.com/daily-updates/daily-news-analysis/replacement-level-fertility#:~:text=India's%20total%20fertility%20rate%20(TFR,Survey%20(NFHS%2D5).)
- **Other Sources:**
 - <https://www.who.int/data/gho/indicator-metadata-registry/imr-details/123>

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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)

Exp:

- A **Liquidity Adjustment Facility (LAF)** is a monetary policy tool used in India by the RBI through which it injects or absorbs liquidity into or from the banking system.
 - LAF is used to aid banks in resolving any short-term cash shortages during periods of economic instability or from any other form of stress caused by forces beyond their control. **Since NBFCs are not banking entities, they cannot access the LAF window of the RBI. Hence, statement 1 is not correct.**
- The Reserve Bank of India in 2018 permitted foreign portfolio investors or FPIs to invest in treasury bills issued by the Central government. However, the investors will have to ensure that their exposure in government securities as well as corporate bonds of less than one year maturity shall not exceed 20% of total investment.
 - **Foreign investors, whether registered as Foreign Institutional Investors (FIIs) or not, may also invest in Indian securities outside the FII route. Hence, statement 2 is correct.**
 - FIIs, Non-Resident Indians (NRIs), and Persons of Indian Origin (PIOs) are allowed to invest in the primary and secondary capital markets in India through the portfolio investment scheme (PIS).
- In 2018, the National Stock Exchange (NSE) **launched the country's first dedicated debt trading platform.**
 - The separate debt trading platform provides an opportunity to retail investors to invest in corporate bonds on a liquid and transparent exchange platform. **Hence, statement 3 is correct.**

Hence, option (d) is correct.

Sources:

■ **Drishti IAS:**

- <https://www.drishtiiias.com/daily-updates/daily-news-analysis/liquidity-adjustment-facility>

■ **Other Sources:**

- <https://www.businesstoday.in/latest/economy-politics/story/rbi-foreign-investors-treasury-bills-gsec-corporate-bonds-fpi-107906-2018-05-02>
- https://www.rbi.org.in/scripts/FS_FAQs.aspx?Id=79&fn=2757#6
- https://www.business-standard.com/article/markets/nse-launches-separate-debt-trading-platform-113051300554_1.html
- https://www.sebi.gov.in/sebi_data/commndocs/pt1b5_h.html

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)

Exp:

- As per 2022 data, Insurance companies are loading up on government securities (G-Secs) due to increase in premium collections even as banks relatively seem to be going slow on this front due to excess investment in these securities. **Insurance companies' ownership of government bonds** has increased to 26.14% in the quarter ended December 2022 from 24.9% in the quarter ended December 2019, the latest RBI data showed.
 - In 2021, the **Insurance Regulatory and Development Authority of India (IRDAI) allowed insurers to invest in debt securities** issued by infrastructure investment trusts (InvITs) and real estate investment trusts (REITs). The move is envisaged to improve the overall yield of portfolios held by insurance companies while providing more long-term funding to the real estate sector.
 - ❖ Both InvITs and REITs are regulated by SEBI.
 - **Hence, insurance companies can invest in both G-Secs and Corporate Bonds.**

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- The **Pension Funds are allowed to invest in corporate bonds/ securities** which have a minimum of 'A' rating or equivalent in the applicable rating scale.
 - With the various measures for development, the market has also witnessed the entry of smaller entities such as co-operative banks, small pension, provident and other funds etc. **These entities are mandated to invest in G-Secs through respective regulations.**
 - Hence, pension funds can trade in both G-Secs and Corporate Bonds.
- **Retail investors can invest directly in G-Sec** by opening gilt accounts with the banks and RBL. The Retail Direct Scheme allows retail investors to buy G-Secs in the primary auctions as well as buy and sell G-Secs in the secondary market.
 - Recently, the SEBI slashed the minimum ticket size of **privately placed corporate bonds** from Rs.1 lakh to Rs.10,000. This move **opens up a new investment opportunity for retail investors** who were previously priced out of the market.
 - Hence, retail investors can trade in both G-Secs and Corporate Bonds.

Hence, option (d) is correct.

Sources:

- **Drishti IAS:** <https://www.drishtiias.com/daily-updates/daily-news-analysis/government-securities-2>
- **Other Sources:**
 - <https://www.pfrda.org.in/myauth/admin/showimg.cshtml?ID=1972#:~:text=The%20Pension%20Funds%20are%20allowed,of%20the%20Pension%20Fund%20at>
 - <https://www.livemint.com/insurance/news/insurers-allowed-to-invest-in-debt-instruments-of-invits-reits-11619175038894.html>
 - <https://economictimes.indiatimes.com/wealth/invest/now-investors-can-buy-corporate-bonds-for-just-rs-10000-should-you-go-for-it/articleshow/110027300.cms?from=mdr>
 - <https://www.rbi.org.in/commonperson/English/Scripts/FAQs.aspx?Id=711#:~:text=With%20the%20various%20measures%20for,G%20D%20Secs%20through%20respective%20regulations.>
 - <https://www.livemint.com/money/personal-finance/increasing-retail-investor-participation-in-corporate-bonds-the-case-for-a-smaller-ticket-size-11696785149518.html>

- https://nsdl.co.in/downloadables/ppt/Presentation_on_Investment_in_Government_Securities_-_Why_and_How_for_Retail_Investors.pdf
- https://economictimes.indiatimes.com/markets/bonds/g-sec-strips-trade-leaps-600-since-fy19-as-insurers-flock-to-bond-street/articleshow/100059770.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst

84. Consider the following :

1. Exchange-Traded Funds (ETF)
2. Motor vehicles
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: (d)

Exp:

- Financial instruments are intangible assets, which are expected to provide future benefits in the form of a claim to future cash.
- These instruments can be divided into two types: cash instruments and derivative instruments or can be divided based on asset class like debt instrument or equity instrument. The third unique category is of foreign exchange instruments.
- **Examples of financial instruments include** stocks, **exchange-traded funds (ETFs)**, bonds, certificates of deposit (CDs), mutual funds, loans, and derivatives contracts, among others. **Hence, 1 is correct.**
 - According to the e-IMF library, **in the past two decades, an increasing number of central banks in industrial countries have included foreign exchange swaps among the instruments** with which they fine-tune domestic liquidity, even though actual use has remained limited in most countries. **Hence, 3 is correct.**
 - ❖ **Foreign exchange instruments include currency swaps**, foreign exchange options, foreign exchange swaps and are mainly related to currencies.
- Since a motor vehicle is a tangible asset, it does not constitute a financial instrument. **Hence, 2 is not correct.**

Hence, option (d) is correct.

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Sources:

- <https://egyankosh.ac.in/bitstream/123456789/90561/3/Unit-3.pdf>
- <https://www.elibrary.imf.org/display/book/9781557755988/ch005.xml>

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

Economic activity	Sector
1. Storage of agricultural produce	Secondary
2. Dairy farm	Primary
3. Mineral exploration	Tertiary
4. Weaving cloth	Secondary

How many of the Pairs given above are correctly matched?

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

Ans: (b)

Exp:

- **Storage of agricultural produce is placed in the Tertiary or service sector** in the Indian economy. The tertiary or service sector provides support to the process of production. It includes transportation, storage, marketing and sale of products. **Hence, statement 1 is not correct.**
- **Dairy comes under the primary sector.** Primary activities are directly dependent on the environment as these refer to the utilization of the earth's resources. **Hence, statement 2 is correct.**
- **Mineral exploration is a primary sector** in the Indian economy. Primary sector includes the extraction of raw materials and agricultural and allied activities. **Hence, statement 3 is not correct.**
- Weaving of clothes comes under **secondary activity**. The sector involves production of finished goods. **Hence, statement 4 is correct.**

Hence, option (b) is correct

Sources: NCERT

86. Consider the following materials :

1. Agricultural residues
2. Corn grain
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) 3 and 4 only
- (c) 1, 2, 3 and 4
- (d) 1, 3 and 4 only

Ans: (c)

Exp:

Sustainable Feedstocks for Producing Sustainable Aviation Fuel:

- **Corn grain (2)**
- Oil seeds
- Algae
- Other fats, oils, and greases
- **Agricultural residues (1)**
- Forestry residues
- **Wood mill waste (4)**
- **Municipal solid waste streams (3)**
- Wet wastes (manures, wastewater treatment sludge)
- Dedicated energy crops.

Hence, option (c) is correct.

Source: Department of energy

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

Items	Category
1. Farmer's plough	Working capital
2. Computer	Fixed capital
3. Yarn used by the weaver	Fixed capital
4. Petrol	Working capital

How many of the above pairs are correctly matched?

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

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Ans: (b)

Exp:

Physical capital refers to assets, such as building, machinery, and vehicles, which are owned and employed by an organization.

■ Tools, machines, buildings, **ploughs**, generators, turbines, computers, etc can be used in production over many years, and so are called fixed capital. **The farming plough is an example of fixed physical capital.** A plough is a farm implement used to loosen and till the soil in preparation for planting crops.

Hence, pair 1 is not correct.

■ A **computer is regarded as a fixed asset** for the business as it serves the business for the long term. Fixed capital are assets of a business that are permanent in nature and are not intended to be disposed of by a business. These assets include land, buildings, plant, machinery, fixed equipment, furniture, fixtures, vehicles, livestock, etc. **Hence, pair 2 is correct.**

■ Production requires a variety of raw materials such as the yarn used by the weaver, Petrol used in machines and transportation or the clay used by the potter. Also, some money is always required during production to make payments and buy other necessary items. Raw materials and money in hand are called working capital. **Hence, pair 3 is not correct while pair 4 is correct.**

Source: NCERT

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”?

- Big data analytics
- Cryptography
- Metaverse
- Virtual matrix

Ans: (c)

Exp:

■ The metaverse is the **emerging 3-D-enabled digital space** that uses virtual reality, augmented reality, and other advanced internet and semiconductor technology to allow people to have life-like personal and business experiences online.

■ The metaverse implies a shared environment that spans a multitude of 3D virtual worlds.

■ Participants in the metaverse will be able to move freely through these virtual worlds, taking their identities, entitlements and goods with them.

■ At least that’s one vision of how a universe of 3D virtual worlds will work.

Hence, option (c) is correct.

Source:

<https://www.techtarget.com/searchcio/tip/Metaverse-interoperability-challenges-and-impact#:~:text=The%20metaverse%20implies%20a%20shared,multitude%20of%203D%20virtual%20worlds.>

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

- There is no minimum capital requirement for wholly owned banking subsidiaries in India.
- 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?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Ans: (b)

Exp:

Rules for Wholly Owned Subsidiaries (WOS) by foreign banks in India

■ The initial minimum paid-up voting equity capital for a WOS shall be 5 billion. **Hence, statement 1 is not correct.**

■ In order to ensure that the board of directors of the wholly owned subsidiary of foreign bank set up in India acts in the best interest of the local institution, RBI may, in line with the best practices in other countries, mandate that not less than 50 percent of the directors should be Indian nationals resident in India. **Hence, statement 2 is correct.**

Hence, option (b) is correct

Sources:

■ [https://m.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=2313#:~:text=9.4%20In%20order%20to%20ensure,in%20India%2C%20\(ii\)%20not](https://m.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=2313#:~:text=9.4%20In%20order%20to%20ensure,in%20India%2C%20(ii)%20not)

■ [https://m.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=2758#:~:text=a\)%20The%20initial%20minimum%20paid,exchange%20remittance%20from%20its%20parent.](https://m.rbi.org.in/Scripts/bs_viewcontent.aspx?Id=2758#:~:text=a)%20The%20initial%20minimum%20paid,exchange%20remittance%20from%20its%20parent.)

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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 its 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: (a)

Exp:

- Rule 2(1)(d)(iv) of the Companies (CSR Policy) Rules, 2014 states that any activity benefiting employees of the company shall not be considered as eligible CSR activity. As per the rule, any activity designed exclusively for the benefit of employees shall be considered as an “activity benefiting employees” and will not qualify as permissible CSR expenditure. **Hence, statement 1 is correct.**
- The Board of Directors of every company for which the CSR provisions apply must ensure that the company spends in every financial year at least 2% of its average net profits made during the immediately preceding three financial years as per its CSR policy. **Hence, statement 2 is not correct.**

Hence, option (a) is correct.

Sources:

- https://www.mca.gov.in/Ministry/pdf/FAQ_CSR.pdf
- <https://cleartax.in/s/corporate-social-responsibility>

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)

Exp:

Explanation

- **Radioisotope Thermoelectric Generators (RTGs)** are lightweight, compact spacecraft power systems that are extraordinarily reliable. Sometimes referred to as “nuclear batteries”. **Hence, statement 1 is not correct.**
- RTGs have been successfully employed by US spacecraft such as the Voyage Cassini and Curiosity, to power missions with exceptional achievements. **Hence, statement 2 is correct.**
- RTGs provide electrical power using heat from the natural radioactive decay of plutonium-238, in the form of plutonium oxide. **Hence, statement 3 is correct.**

Hence, option (b) is correct

Sources:

- **Drishti IAS:** <https://www.drishtiias.com/daily-updates/daily-news-analysis/radio-thermoelectric-generators>

■ **Other Sources:**

<https://science.nasa.gov/mission/cassini/radioisotope-thermoelectric-generator/>

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 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)

Exp:

- Massive stars also use up the hydrogen fuel in their core faster, despite starting out with much more of it, meaning they live much shorter lives than dwarf stars. **Hence, statement 1 is not correct.**

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- Giant stars have masses from eight times to as much as 100 times that of the mass of our sun. These massive stars have hotter and denser cores than dwarf stars. Therefore, giant stars have a greater rate of nuclear reactions that light up stars. **Hence, statement 2 is correct.**

Hence, option (d) is correct.

Sources: <https://solarsystem.nasa.gov/genesismission/gm2/mission/pdf/Giantstars.pdf>

93. Which one of the following is synthesised in human body that dilate blood vessels and increases blood flow?

- Nitric oxide
- Nitrous oxide
- Nitrogen dioxide
- Nitrogen Pentoxide

Ans: (a)

Exp:

- Nitric oxide is an essential molecule required for overall health. As a vasodilator, nitric oxide signals the blood vessels to relax, allowing them to expand.
- This effect allows blood, nutrients, and oxygen to flow freely to every part of the body. But when nitric oxide production is decreased, your health can become compromised.
- Therefore, it's important to achieve and maintain optimal levels of nitric oxide in the body. Nitric oxide dilates blood vessels, raising blood supply and lowering blood pressure.

Hence, option (a) is correct.

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?

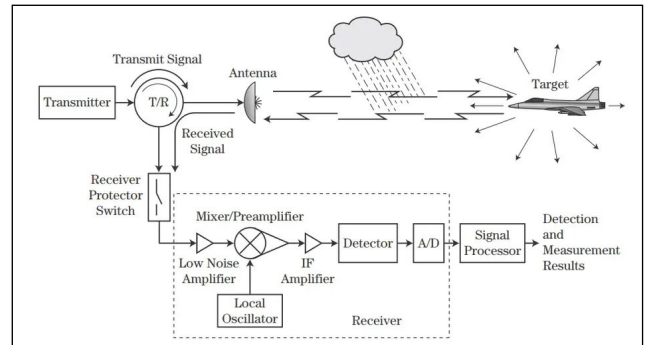
- Only one
- Only two
- All three
- None

Ans: (c)

Exp:

- Radar (Radio Detection and Ranging) systems use radio waves to detect and identify objects. They work by emitting radio waves and analyzing the reflected signals to determine the position, speed, and characteristics of objects.
- Traditionally, radar is used for air traffic control, weather monitoring, and navigation. **Hence, point 2 is correct.**
- Extending its use to passenger identification involves innovative applications of existing technology.
- Millimeter-wave radar scanners may be used in airports for body scans, detecting concealed objects without physical contact. **Hence, point 1 is correct.**
- Since the 1960s, radar has become a widely-used technique for studying migrating animals. **Hence, point 3 is correct.**

Hence, option (c) is correct.



Sources:

- Nature
- <https://www.sciencedirect.com/topics/engineering/millimeter-wave-radar>
- <https://oxeltech.de/en/a-beginners-guide-to-millimeter-wave-mmwave-radar-technology-applications-and-advantages/>

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

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Ans: (d)

Exp:

- Fifth generation fighter jets have stealth capabilities and can cruise at supersonic speeds without engaging afterburners.
- At Present, Fifth generation jets are possessed by **Russia (Sukhoi Su 57), China (Chengdu J-20), and the US (F-35 & F-22)**. Therefore, none of the above aircraft are 5th generation fighter aircraft.

Hence, option (d) is correct.

Sources:

- **Drishhti IAS:** [https://www.drishhtias.com/daily-updates/daily-news-analysis/india-s-5-g-fighter-aircraft-and-lea-tejas#:~:text=Fifth%2Dgeneration%20\(5G\)%20fighters,supersonic%20speeds%20without%20engaging%20afterburners.](https://www.drishhtias.com/daily-updates/daily-news-analysis/india-s-5-g-fighter-aircraft-and-lea-tejas#:~:text=Fifth%2Dgeneration%20(5G)%20fighters,supersonic%20speeds%20without%20engaging%20afterburners.)

■ **Other Sources:**

<https://indianexpress.com/article/explained/india-indigenous-fifth-gen-fighter-jet-amca-9204814/>

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:

- 1 only
- 1 and 2 only
- 2 and 3 only
- 1, 2 and 3

Ans: (b/d)

Exp:

- Due to Hydrogels tunable properties, controlled degradation, and ability to protect **labile drugs** (Drugs that are destroyed in acidic environments), hydrogels are increasingly investigated as local drug delivery systems. **Hence, statement 1 is correct.**

- Source: National Institute of Health

- Current air conditioning and refrigeration systems utilise active cooling technology, which consumes a lot of energy from fossil fuels. On the other hand, passive cooling is considered as an alternative because it is effective and less expensive. Hydrogels are flexible and soft 3 dimensional networks with high water

content with radiative cooling properties that make them suitable for use in passive cooling technology. **Hence statement 2 is correct.**

- Source: AIMS Press

- Hydrogels have received extensive attention as functional lubricants because of their excellent anti friction and anti-wear properties, tunable tribological performances, and effectiveness in alleviating lubrication failures caused by the creeping or leakage of conventional liquid lubricants owing to their semi solid nature. However due to inconclusive research, it is difficult to ascertain its actual application as industrial lubricant. **Hence, statement 3 is Inconclusive.**

- Source: Research Gate

Hence, option (b/d) is correct

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

- Hydrogen peroxide
- Hydronium
- Oxygen
- Water vapour

Ans: (d)

Exp:

- **Fuel-cell electric vehicles emit only water vapour and warm air**, producing no harmful tailpipe emissions. Similar to electricity, hydrogen is an energy carrier that can be produced from various feedstocks. These feedstocks and production methods should be considered when evaluating hydrogen emissions.
- Fuel Cell Electric Vehicle (FCEV) engines are similar to conventional internal combustion engines because they also rely on a constant supply of fuel (hydrogen) and oxygen.
 - However, there are no moving parts in the fuel cell, so they are more efficient and reliable.

Hence, option (d) is correct.

Sources:

■ **Drishhti IAS:**

- Hydrogen Fuel Cell
- First Green Hydrogen Fuel Cell Bus

■ **Other Source:**

- <https://afdc.energy.gov/vehicles/fuel-cell>

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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)

Exp:

- **Pumped storage hydropower** is a type of **hydroelectric energy storage** that uses water stored in **two reservoirs at different elevations to generate electricity**.
- When there is **excess electricity available**, such as **during off-peak hours** or from renewable sources **like solar and wind**, it is used to pump water from the lower reservoir to the upper reservoir.
- When there is a demand for electricity, the water is released from the upper reservoir back down to the lower reservoir, passing through turbines that generate electricity.

Hence, option (c) is correct.

Source:

- **Drishti IAS: India’s Leap Towards Green Energy**
- **Other Sources:**
 - <https://www.energy.gov/eere/water/pumped-storage-hydropower>
 - https://www.business-standard.com/industry/news/centre-approves-nearly-12-gw-pumped-storage-hydropower-projects-124011800894_1.html

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)

Exp:

- **Membrane bioreactor (MBR) technology is an efficient hybrid of traditional biological wastewater treatment and modern membrane processes that is used in both municipal and industrial wastewater treatment.**

- **Similar to traditional activated sludge processes** that utilize microorganisms to degrade organic pollutants, **this method employs advanced membranes to reject suspended solids, eliminating the need for a bulky clarifier.**

Hence, option (d) is correct.

Source:

- **Drishti IAS: Membrane to Clean Toxic Effluents - Drishti IAS**
- **Other Sources:**
 - **Membrane Bioreactor (MBR) Wastewater Treatment | Seven Seas**
 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4931528/>

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)

Exp:

- A collateralized borrowing and lending obligation (**CBLO**) is a **money market instrument that represents an obligation between a borrower and a lender concerning the terms and conditions of a loan**. CBLOs allow those restricted from using the interbank call money market in any given specific country to participate in the short-term money markets.
- The Clearing Corporation of India Ltd. (CCIL) has developed and introduced with effect from January 20, 2003 a **money market instrument called Collateralised Borrowing and Lending Obligation (CBLO)**. (RBI)

Hence, option (c) is correct.

Sources:

- **Drishti IAS: [https://www.drishtiiias.com/summary-of-important-reports/niti-aayog-digital-payments-trends-issues-and-opportunities#:~:text=Collateralized%20Borrowing%20and%20Lending%20Obligation%20\(CBLO\)%20is%20a%20money%20market%20instrument](https://www.drishtiiias.com/summary-of-important-reports/niti-aayog-digital-payments-trends-issues-and-opportunities#:~:text=Collateralized%20Borrowing%20and%20Lending%20Obligation%20(CBLO)%20is%20a%20money%20market%20instrument)**
- **Other Sources:**
 - https://rbi.org.in/Scripts/BS_CircularIndexDisplay.aspx?Id=2388
 - <https://www.investopedia.com/terms/c/cblo.asp>,

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