

CSE 2024 Prelims Full Analysis

Coverage from Absolute Blueprint 2024 :80 Marks(40 Qs)

Timeframe : Nov 2022-Jun 2024

<p>1 Recently the term “pumped-storage hydropower” is actually and appropriately discussed in the context of which one of the following?</p> <p>(a) Irrigation of terraced crop fields (b) Lift irrigation of cereal crops (c) Long duration energy storage (d) Rainwater harvesting</p>	<p>A key component of world’s clean energy transition</p> <ul style="list-style-type: none"> Green hydrogen, a crucial pillar for decarbonising industry and long-distance transport sectors, is produced using water and electricity sourced from renewables. Pumped storage hydropower, acting as a natural battery and is essential to balance power grid load is an important component of a clean but reliable power system. <p>STATE OF RIVER POLLUTION</p> <p>30% sites have polluted water</p> <p>Of the 222 sites monitored by the Central Water Commission for water quality between 2012-13 and 2016-17, water quality at 67 locations was</p> <p>Source : Apr 2024 LB Monthly Mag & Daily Issues</p>																												
<p>2 Consider the following :</p> <p>1. Finland 2. Germany 3. Norway 4. Russia</p> <p>How many of the above countries have a border with the North Sea?</p> <p>(a) Only one (b) Only two (c) Only three (d) All four</p>	<p>Drilling in North Sea</p> <ul style="list-style-type: none"> North Sea lies between England and Scotland on its west, Netherlands, Belgium, and France on its south, and Norway, Denmark, and Germany on its east. The 1958 Geneva Convention on the Continental Shelf was the first international legislation gave rights of countries over the continental shelves along coastline. The treaty came into force in 1964 and provides for exploration and exploitation of the continental shelf based on the 1958 convention. It delineated the jurisdiction the U.K. had over oil <p>Source :Aug 2023</p>																												
<p>3 Consider the following aircraft:</p> <p>1. Rafale 2. MiG-29 3. Tejas MK-1</p> <p>How many of the above are considered fifth generation fighter aircraft?</p> <p>(a) Only one (b) Only two (c) All three (d) None</p>	<p>Indigenous product</p> <ul style="list-style-type: none"> The AMCA is envisaged as a 25-tonne twin-engine stealth aircraft with an internal weapons bay and diverterless supersonic intake. It has been developed in India for the first time. It is intended to have an internal carriage of 1,500 kg of payload and 5,500 kg of external payload with 6,500 kg of internal fuel. Cabinet Committee on Security sanctioned the development of the LCA-Mk2, a new light combat aircraft. The first prototype is expected to roll out in 2025-26 with the first flight planned for 2026-27 ADA officials said at the Def Expo 2022, held in Gandhinagar. <p>FIFTH-GENERATION STEALTH FIGHTERS</p> <table border="1"> <thead> <tr> <th>Sukhoi Su-57 Russia</th> <th>Lockheed Martin F-22 U.S.</th> <th>Lockheed Martin F-35B U.S.</th> <th>Chengdu J-20 China</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Length: 22m</td> <td>18.9m</td> <td>15.6m</td> <td>20.4m</td> </tr> <tr> <td>Empty weight: 18,000kg</td> <td>19,700kg</td> <td>14,650kg</td> <td>19,400kg</td> </tr> <tr> <td>Internal fuel: 10,300kg</td> <td>8,200kg</td> <td>6,125kg</td> <td>11,340kg</td> </tr> <tr> <td>Maximum speed: Mach 2</td> <td>Mach 2</td> <td>Mach 1.6</td> <td>Mach 1.7</td> </tr> <tr> <td>Service entry: 2019</td> <td>2005</td> <td>2015</td> <td>2018</td> </tr> </tbody> </table> <p>Sources: Aviation Week, Business Insider, Global Security, Lockheed Martin © GRAPHIC NEWS</p> <p>Source : Feb 2023</p>	Sukhoi Su-57 Russia	Lockheed Martin F-22 U.S.	Lockheed Martin F-35B U.S.	Chengdu J-20 China					Length: 22m	18.9m	15.6m	20.4m	Empty weight: 18,000kg	19,700kg	14,650kg	19,400kg	Internal fuel: 10,300kg	8,200kg	6,125kg	11,340kg	Maximum speed: Mach 2	Mach 2	Mach 1.6	Mach 1.7	Service entry: 2019	2005	2015	2018
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4 **What is this type of climate?**
 1. Annual and daily range of temperatures is low.
 2. Ppt throughout the year.
 3. Ppt varies between 50cm – 250cm.
 (a) Equatorial climate
 (b) China type climate
 (c) Humid subtropical
 (d) Marine West coast climate

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
Source :Pre Test Series 2024 : Geography II

5 **Consider the following pairs:**

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

How many of the pairs given above are correctly matched?

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

An overview of Sudan's civil war

Background

- The current civil war in Sudan goes beyond a simple power struggle between two generals.
- It reflects a deep-rooted crisis within the country's governing structure that's been present since it gained independence from the British in 1956.
- Since independence, the Sudanese have experienced 35 coups and attempted coups, more than any other African country.
- In the country's southern region, a 56-year rebellion eventually led to the creation of South Sudan in 2011.

Sudan :May 2024 , many news

Can dollarisation save an economy?

Javier Milei's Unconventional Victory

- Javier Milei won Argentina's presidential election, is known for his unconventional and concerning views.
- Milei opposes abortion and holds ambivalent views on torture and undemocratic excesses of Argentina's military government.

Controversial Economic Proposals

- Milei proposed replacing Argentina's peso with the dollar, eliminating the Central Bank, and cutting government spending.
- Argentina, facing over 100% inflation and widespread poverty, supported Milei's unique policy proposals in the elections.

Argentina: Nov 2023

NATO Plus Five Status:



Turkey : June 2023, many other

6 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

SOL: A

Name: The Red Sea gets its name from a type of algae called *Trichodesmium erythraeum*, which can bloom and color the water red.

- **Salinity:** Because of high evaporation rates and little freshwater entering the sea, the Red Sea is one of the saltiest bodies of water in the world, with salinity levels reaching up to 41 parts per thousand.
- **Climate:** The Red Sea has a hot, dry climate with very little rainfall. Temperatures average in the high 80s to low 90s Fahrenheit year-round.
- **Geology:** The Red Sea is located in a valley created by the separation of the Arabian tectonic plate from the African tectonic plate. This rifting process is still ongoing, and the sea floor is slowly spreading apart at a rate of about 1 centimeter per year.
- **Marine Life:** The Red Sea is known for its rich marine life. Coral reefs flourish in the clear, warm waters, providing a habitat for a variety of fish, invertebrates, and marine mammals.
- **Shipping:** The Red Sea is a vital shipping lane, connecting the Mediterranean Sea to the Indian Ocean via the Suez Canal.



Daily Quiz : 07 Apr 2024

7 The organisms “Cicada, Froghopper and Pond skater” are:

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

Commonly found cicada species sheds foreign tag to embrace Indian identity
Mistaken Identity and Taxonomic Correction

- A foreign cicada species commonly found in South India previously mistaken for *Purana tigrina* from Malaysia.
- Correct species name identified as *Purana cheeveeda* after its Malayalam name **Cheeveedu**.
- Malaysian species excluded from South Indian cicada fauna due to differences in morphological characteristics.
- Observation of differences in male genitalia and operculum led to the discovery of mistaken identity.



Importance and Concerns

- Previous species misidentification corrected to establish the true identity of the South Indian cicada.
- Gradual disappearance of cicadas in homesteads may indicate deteriorating soil and vegetation quality.
- Importance of preserving cicada populations is highlighted.

July 2023

Periodical cicada emergence disrupts food webs
Cicada Emergence in Eastern North American Forests


- In eastern North American forests, cicadas periodically emerge in large numbers.
- A recent study has investigated the effects of the 2021 Brood X cicada emergence on forest ecosystems.

Impact on Food Webs

- The study reveals that this mass emergence of cicadas can cause significant changes in forest food webs.
- When insect-eating birds have cicadas as their prey, they shift their focus away from their usual food source, which is leaf-eating caterpillars.
- With the reduced threat from insect-eating birds due to their preference for cicadas, caterpillars begin to feed more heavily on oak sapling leaves.
 - This results in a doubling of insect-induced leaf damage to oak trees.



Oct 2023

<p>8. Consider the following properties included in the World Heritage List released by UNESCO:</p> <ol style="list-style-type: none"> 1. Shantiniketan 2. Rani-ki-Vav 3. Sacred Ensembles of the Hoysalas 4. Mahabodhi Temple Complex at Bodhgaya <p>How many of the above properties were included in 2023?</p> <p>(a) Only one (b) Only two (c) Only three (d) All four</p>	<p><u>Santiniketan finds its place on UNESCO's World Heritage List</u> <u>Santiniketan Joins UNESCO World Heritage List</u></p> <ul style="list-style-type: none"> • Santiniketan, a town founded by Nobel laureate Rabindranath Tagore, has been added to UNESCO's World Heritage List. • Located in West Bengal's Birbhum district, Santiniketan, which means "abode of peace." <p><u>Three Hoysala temples declared World Heritage Sites</u></p> <ul style="list-style-type: none"> • The Hoysala temples at Belur, Halebid, and Somanathapur in Karnataka were declared UNESCO World Heritage Sites. • This recognition is expected to attract more tourists from around the world to these places. <p><u>Long-standing Nominations</u></p> <ul style="list-style-type: none"> • The Chennakeshava temple at Belur and the Hoysaleswara temple at Halebid, both located in Hassan district, have been on UNESCO's tentative list since 2014. <p style="text-align: right;">Sept 2023</p> 				
<p>9. Consider the following statements regarding 'Nari Shakti Vandan Adhiniyam':</p> <ol style="list-style-type: none"> 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. <p>Which of the statements given above are correct?</p> <p>(a) 1, 2 and 3 (b) 1 and 2 only (c) 2 and 3 only (d) 1 and 3</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">5.8% (131)</td> <td style="text-align: center;">20.7% (66)</td> <td style="text-align: center;">GRM</td> <td style="text-align: center;">1 (17%)</td> </tr> </table> <ul style="list-style-type: none"> • The 128th Constitution Amendment Bill, also known as the Nari Shakti Vandan Adhiniyam, <ul style="list-style-type: none"> – aims to address this by reserving one-third of seats in the Lok Sabha and legislative Assemblies for women. – It includes a 15-year provision for this quota, which can be extended as needed. <p><u>Challenges in Implementation</u></p> <ul style="list-style-type: none"> • Despite the historic passage of the Bill in the Lok Sabha, its implementation is delayed due to its association with two factors: delimitation and the Census. • This linkage to delimitation is seen as unfortunate, as the principle of reserving seats for women is unrelated to the territorial boundaries of constituencies <ul style="list-style-type: none"> – or the number of Assembly and Lok Sabha constituencies in each State. • Consequently, women will not have access to the 33% reservation in the upcoming 2024 general election. <p><u>Reservation for Scheduled Castes and Scheduled Tribes</u></p> <ul style="list-style-type: none"> • The Bill also stipulates that approximately one-third of the seats reserved for Scheduled Castes and Scheduled Tribes should be allocated to women. <p style="text-align: right;">Sep 2023</p>	5.8% (131)	20.7% (66)	GRM	1 (17%)
5.8% (131)	20.7% (66)	GRM	1 (17%)		
<p>10. Which one of the following was the latest inclusion in the Intangible Cultural Heritage List of UNESCO?</p> <p>(a) Chhau dance (b) Durga puja (c) Garba dance (d) Kumbh mela</p>	<p><u>Garba dance of Gujarat makes it to UNESCO list</u> <u>Garba dance</u></p> <ul style="list-style-type: none"> • Gujarat's traditional dance form 'Garba' was included in the list of Intangible Cultural Heritage. • The popular dance form is the 15th cultural item from India to make it to the UNESCO list. Kolkata's Durga Puja was the last one added two years ago. • The inclusion has been made under the provisions of the 2003 Convention for the Safeguarding of Intangible Cultural Heritage. <p style="text-align: right;">Dec 2023</p>				

11 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

o Which was **renamed** in 2006 as “Particularly Vulnerable Tribal Groups (PVTGs)”.

How are STs notified?

- First specification of STs in relation to a particular State/ UT is by **a notified order of the President**, after consultation with the State govts concerned.
- These orders can be modified subsequently **only through an Act of Parliament**.

Nov 2022

High Court does not have power to direct changes to Scheduled Tribes List: CJI Chief Justice of India D.Y. Chandrachud questioned Manipur HC order:

- Cited the State of Maharashtra versus Milind (2000) which held that **no court or State had the power to “add, subtract or modify”** the ST List was not shown.
- High Court does not have the power to direct changes to the **Scheduled Tribes List**.
- It is a Presidential power to designate a Scheduled Caste or **Scheduled Tribe**.

May 2023

Bill to amend ST list of Chhattisgarh passed in LS

In News

- LS passed the **Constitutional (Scheduled Tribes) Order (Fifth Amendment), Bill 2022**
 - o To include the **Binjhia community** and synonyms for several other tribes in ST list of Chhattisgarh.
- Discussion was also made for the inclusion of the **Kurmi community** in the ST list.

Dec 2022

12 Consider the following statements:

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


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

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

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

Concerns and India's Stand

- PM Modi highlighted shared concerns on the safety of maritime trade ongoing Israel-Hamas conflict.
- Shipping companies express concern about the **Bab el-Mandeb Strait** due to attacks by **Houthi rebels** on container ships.
- The Houthis are carrying out drone attacks on the southern entrance to the **Red Sea** in response to Israel’s aerial strikes and offensives in the Gaza Strip.




Dec 2023, Feb 2024

Q4) Bab-el-Mandeb Strait connects which of the following two water bodies?

A. Persian Gulf and Gulf of Oman
 B. Red sea and Gulf of Aden
 C. Red sea and Gulf of Oman
 D. Persian Gulf and Gulf of Aden

SOL: B

Map of Yemen and the Bab el-Mandeb Strait



Daily Quiz :18 Dec 2023

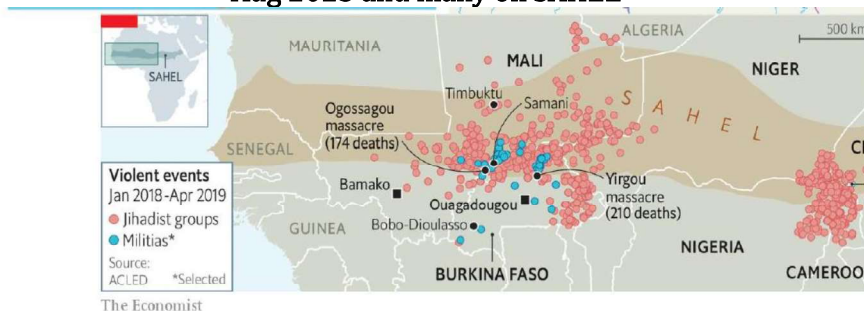
13 Consider the following statements:
Statement-I: There is instability and worsening security situation in the Sahel region.
Statement-II: There have been military takeovers/coups d'etat in several countries of the Sahel region in the recent past.
 Which one of the following is correct in respect of 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 in correct

France is plotting to 'intervene militarily' to reinstate President Bazoum, says Niger junta

Background

- Niger became the third Sahel country in less than three years, following neighbours Mali and Burkina Faso, to be shaken by a military coup.
- In all three nations, jihadist insurgency strained fragile governments, stoked anger in the military and rained economic blows on the world's poorest countries.
- The overthrow of elected Presidents has been accompanied by anti-French, pro-Russian demonstrations.

Aug 2023 and many on SAHEL



- One of the poorest countries in the world
- Has large gold deposits
- West African country has become the epicentre of a violent rebellion.
- Thousands have been killed across the Sahel region being displaced and forced into makeshift camps

Jan 2023, Jul 2023

14 Consider the following materials:
 1. Agricultural residues
 2. Corn grains
 3. Wastewater treatment sludge
 4. Wood mill waste
 Which of the above can be used as feedstock for producing Sustainable Aviation Fuel?
 (a) 1 and 2 only
 (b) 2 and 4 only
 (c) 1, 2, 3 and 4
 (d) 1, 3 and 4 only

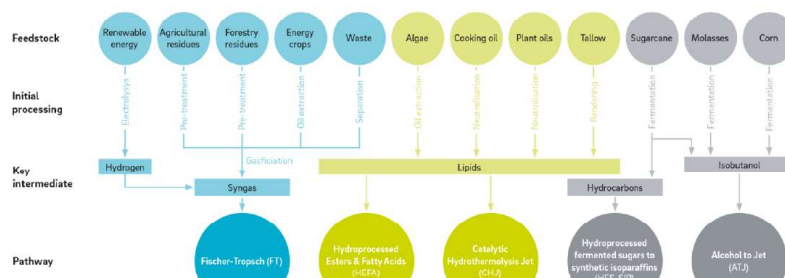
India seeks leeway to plan shift to sustainable aviation fuel

India's Position on Sustainable Aviation Fuel (SAF) Mandates

- India asserts that global mandates for Sustainable Aviation Fuel (SAF) with a target year of 2050 are considered 'too early.'
- Each country should be allowed to develop its strategy for SAF according to its national plans.

SAFs can be produced from a wide range of feedstocks using 5 key processing pathways

Mapping of feedstocks to pathways



June 2023

15 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

Q3) Which of the following statements is/are correct regarding Chemical weathering?

1. Chemical weathering is caused by rain water reacting with the mineral grains in rocks to form new minerals (clays) and soluble salts.
2. These reactions occur particularly when the water is slightly basic.

OPTIONS:

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

SOL: A

These reactions occur particularly when the water is slightly **acidic**.

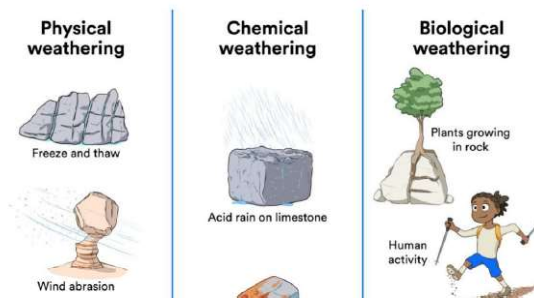
These chemical processes need water, and occur more rapidly at higher temperature, so warm, damp climates are best. Chemical weathering (especially hydrolysis and oxidation) is the first stage in the production of soils.

There are different types of chemical weathering, the most important are:

Solution - removal of rock in solution by acidic rainwater. In particular, limestone is weathered by **rainwater containing dissolved CO₂**, (this process is sometimes called carbonation).

Hydrolysis - the breakdown of rock by acidic water to produce clay and soluble salts.

Oxidation - the breakdown of rock by oxygen and water, often giving iron-rich rocks a rusty-coloured weathered surface.



Mar 2024 Daily Quiz

16 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

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 Son is its major right bank tributary. 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 the Sagar Island.

M1 Mains Ans Writing MCQ

<p>17</p>	<p>With reference to the Government of India Act, 1935, consider the following statements:</p> <p>1. It provided for the establishment of an All India Federation based on the union of the British Indian Provinces and Princely States.</p> <p>2. Defence and Foreign Affairs were kept under the control of the federal legislature.</p> <p>Which of the statements given above is/are correct?</p> <p>(a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2</p>	<p>Q4. In the federation established by The Government on India Act of 1935. Residuary Power was given to the</p> <p>(a) Federal Legislature (b) Provincial Legislature (c) Governor General (d) Provincial Governors</p> <p>Ans: (c)</p> <p>Explanation:</p> <p>Salient Features of the Government of India Act, 1935:</p> <p>All India Federation</p> <p>It provided for the establishment of an All-India Federation consisting of provinces and princely states as units. The Act divided the powers between the Centre and units in terms of three lists, Federal List (for Centre containing 59 items), Provincial List (for provinces containing 54 items) and the Concurrent List (for both containing 36 items).</p> <p>Religious affairs, defence, administration of tribal areas and external affairs were included in the reserved subjects.</p> <p style="text-align: center;">M21 Mains Ans Writing 2024 MCQ</p>
<p>18</p>	<p>The Constitution (71st Amendment) Act, 1992 amends the Eights Schedule to the Constitution to include which of the following languages?</p> <p>1. Konkani 2. Manipuri 3. Nepali 4. Maithili</p> <p>Select the correct answer using the code given below:</p> <p>(a) 1, 2 and 3 (b) 1, 2 and 4 (c) 1, 3 and 4 (d) 2, 3 and 4</p>	<p>Explanation:</p> <p>However, the Parliament has not made any provision for the use of Hindi in the Supreme Court. Hence, the Supreme Court hears only those who petition or appeal in English.</p> <p>The Constitution imposes a duty upon the Centre to promote the spread and development of the Hindi language so that it may become lingua franca of the composite culture of India.</p> <p>At present, 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; and Bode, Dongri, Maithili and Santhali were added by the 92nd Amendment Act of 2003.</p> <p style="text-align: center;">Pre Test Series 2024 : Polity IV</p>
<p>19</p>	<p>Operations undertaken by the Army towards upliftment of the local population in remote areas to include addressing of their basic needs is called:</p> <p>(a) Operations Sankalp (b) Operation Maitri (c) Operation Sadbhavana (d) Operation Madad</p>	<p>Q1) Which of the following statements is/are correct regarding 'Operation SADBHAVANA'?</p> <p>1. Indian Army is undertaking multiple welfare activities such as running of Army Goodwill Schools, Infrastructure Development Projects and Education Tours etc. for the children living in remote areas of North-East India.</p> <p>2. Girl students have a fair representation in the education fund outlay of 'Operation SADBHAVANA'.</p> <p>OPTIONS:</p> <p>A. 1 only B. 2 only C. Both 1 and 2 D. Neither 1 nor 2</p> <p style="text-align: center;">Daily Quiz : Jan 2024</p>

20 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

India's digital rupee fails to excite interest, bankers say

What is the digital rupee pilot project in India, and how will it work?

The Reserve Bank of India (RBI) released India's much-anticipated Central Bank Digital Currency (CBDC), a type of official cryptocurrency, for retail users on Thursday.

What did the bankers say?

- A month into India's pilot project for using an official digital rupee for inter-bank and institutional transactions,
 - Stakeholders are seeing no benefits.
 - Using the RBI's e-rupee was much the same as net-based banking, adding each trade using the e-rupee, but had to be settled individually.
 - It also adds to banks' accounting work.
 - RBI also began a new e-rupee trial, for consumers and retailers on Dec. 1.
- Introduction of the **e-rupee** could act as a deterrent to economic growth if legitimate economic activities are deemed illegal by govts.
 - Future of RBI digital currencies as a substitute for private cryptocurrencies may be overblown.
 - It should be noted that the popularity of private cryptocurrencies was because
 - It was considered a better store of value and exhibited more stable purchasing power than fiat currencies.

Dec 2022

Explanation:

Central bank digital currencies (CBDCs) are a form of digital currency issued by a country's central bank. They are similar to cryptocurrencies, except that their value is fixed by the central bank and equivalent to the country's fiat currency.

Many countries are developing CBDCs, and some have even implemented them. Because so many countries are researching ways to transition to digital currencies, it's important to understand what they are and what they mean for society.

Types of CBDCs

There are two types of CBDCs, wholesale and retail. Financial institutions are the primary users of wholesale CBDCs, whereas consumers and businesses use retail CBDCs.

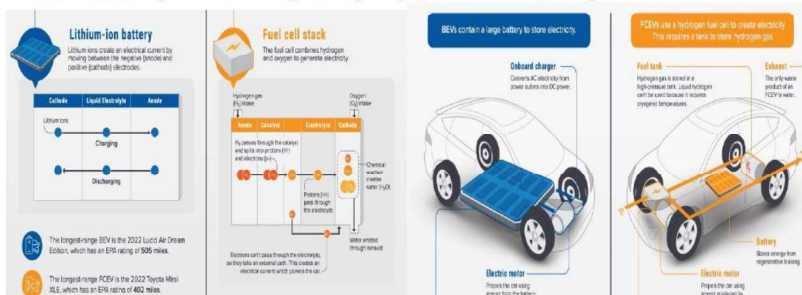
Pre Test Series 2024: Economy I

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

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

Hydrogen Fuel Cells

- Hydrogen fuel cells separate hydrogen into protons and electrons at the anode, reacting with oxygen at the cathode.
- The Indian government's National Green Hydrogen Mission in 2023, is aiming to make India a global hub for green hydrogen utilization and export.



Nov 2023

22 In which of the following are hydrogels used?

1. Controlled drug delivery in patients
2. Mobile AC systems
3. Preparation of industrial lubricants.



Select the correct answer

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

Special Brittle Hydrogels

- Super shear tensile cracks observed in special brittle hydrogels.
- Hydrogels are soft, gel-like materials composed of water and polymers include proteins such as collagen and gelatine.
- Due to their distinct characteristics like biodegradability, softness, hydrophilicity play a prime role in biomedical applications.

July 2023 : 1 & 3 can be inferred from here and as there is no option for Only 1 & 3, the answer will be 1 , 2 & 3

<p>23 With reference to Corporate Social Responsibility (CSR) rules in India, consider the following statements:</p> <p>1. CSR rules specify that expenditures that benefit the company directly or the employees will not be considered as CSR activities.</p> <p>2. CSR rules do not specify minimum spending on CSR activities.</p> <p>Which of the statements given above is/are correct?</p> <p>(a) 1 only (b) 2 only (c) Both 1 and 2 (d) Neither 1 nor 2</p>	<p>CSR</p> <ul style="list-style-type: none"> India has a robust corporate social responsibility (CSR) policy that mandates that corporations engage in initiatives that contribute to the welfare of society. This mandate was codified into law with amendments to the Companies Act of 2013. The amendments require companies with a net worth of ₹500 crore or minimum turnover of ₹1,000 crore or a net profit of ₹5 crore; <ul style="list-style-type: none"> In any given financial year spend at least 2% of their net profit over the preceding three years on CSR activities. The list of qualifying CSR activities is intentionally broad, ranging from supporting the protection of historically important sites to promoting safe drinking water. <div style="text-align: center;"> <p>ESG CONSIDERATIONS IN INVESTMENT DECISIONS</p>  </div> <p style="text-align: center;">Mar 2023 & Daily Quiz</p>
<p>24 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.”?</p> <p>(a) Big data analytics (b) Cryptography (c) Metaverse (d) Virtual matrix</p>	<p>UNICEF Report on Metaverse and Extended Reality</p> <ul style="list-style-type: none"> It explores potential benefits of virtual environments for children in education and health. Highlights significant risks, including exposure to graphic content, bullying, harassment, abuse, and privacy concerns. Warns of large tech companies facilitating hyper-personalized profiling, advertising, and increased surveillance. It calls tech companies to take responsibility and provide 'safe by design' platforms for young users. <p>Dangers in Current Virtual Environments and Games</p> <ul style="list-style-type: none"> Immersive experiences in the virtual environments may lead to exposure to explicit content and dangerous activities. <p style="text-align: center;">Feb 2024</p>
<p>25 In India, which of the following can trade in Corporate Bonds and Government Securities?</p> <p>1. Insurance Companies 2. Pension Funds 3. Retail Investors</p> <p>Select the correct answer using the code given below:</p> <p>(a) 1 and 2 only (b) 2 and 3 only (c) 1 and 3 only (d) 1, 2 and 3</p>	<p>‘Ultra-long g-secs to see good demand from insurers, pension funds in H2’</p> <p>Introduction</p> <ul style="list-style-type: none"> India has issued its first-ever 50-year government bonds and 30-year green bonds. Insurance firms and provident funds are seen as potential investors interested in parking their long-term funds in these bonds. <p style="text-align: center;">Sep 2023</p> <p>RBI Retail Direct Mobile App</p> <ul style="list-style-type: none"> Introducing a mobile app for the RBI Retail Direct scheme. Enables individual investors to maintain gilt accounts and invest in government securities. App to facilitate buying and selling securities on the go, to be available shortly. <p style="text-align: center;">Apr 2024</p> <div style="text-align: center;">  </div>

26 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

Popularity of such funds in India

- Index funds and exchange-traded funds (ETFs) have seen an exponential growth in assets since 2015.
- From eight such funds in 2008, there are as many as 200 options now.
- About 16% of the assets managed by India’s mutual funds are parked in index funds and ETFs.

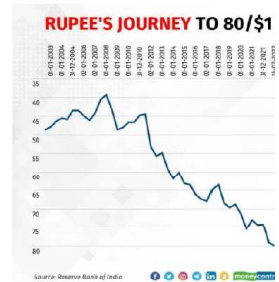
How are indices made?

- Indices could be based on;
 - different industry sectors

Mar 2023 , Daily Quiz

Reforms for Rupee Internationalisation

- Aim for full convertibility of rupee by 2060.
- Implementation of **Tarapore Committee recommendations**.
- Development of deeper and more liquid rupee bond market.
- Encouragement of invoicing transactions in rupee for Indian exporters and importers.
- **Currency swap** agreements to settle trade and investment transactions in rupees.
- **Tax incentives** for foreign businesses to use rupee in India.



July 2023 & many

27 Consider the following statements:
Statement-I: The Indian Flying Fox is placed under the “vermin” category in the Wild Life (Protection) Act, 1972.
Statement-II: The Indian Flying Fox feeds on the blood of other animals.
 Which one of the following is correct in respect of the above statements?
 (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I
 (b) Both Statement-I and Statement-II are correct, but Statement-II does *not* explain Statement-I
 (c) Statement-I is correct, but Statement-II is incorrect
 (d) Statement-I is incorrect, but Statement-II is correct

Flving fox bats for vigilance while day-roosting, finds study

India’s largest species of bats, named after a canine fabled to be sly, spends 7% of its day-roosting time being environmentally vigilant, a new study has said.

Fruit-eating flying fox

- The nectar and fruit-eating flying fox (*Pteropus giganteus*) is generally considered vermin as they raid orchards.
- It was under Schedule V of the Wildlife (Protection) Act of 1972 until it was put on the Schedule II list, entailing a higher degree of protection.
- As a keystone species causing seed dispersals of many plants in tropical systems, the flying fox has fascinated zoologists over the years.
- It has a disproportionately large effect on its natural environment relative to its abundance, impacting other organisms in an ecosystem.

Schedule I & Sch II (Part II): Absolute protection & highest penalties
Schedule V: Those which can be hunted




Aug 2023

28 Consider the following:
 1. Cashew
 2. Papaya
 3. Red sanders
 How many of the above trees are actually native to India?


Red Sanders

- **Red Sanders (*Pterocarpus santalinus*)** or red sandalwood is an endemic tree species with distribution restricted to the Eastern Ghats of India.
- The species found in **Andhra Pradesh** and reported to be one of India's most exploited tree species.
- **Schedule IV** - Wildlife Protection Act
- **Endangered** - IUCN Red List
- Red sanders are very slow-growing tree species up to a height of 10 to 15 metres that attains maturity in natural forests after 25-40 years.

The potential and the problem



1,000 metric tonnes
The annual market demand for Red Sanders



Distribution of Red sanders in India

1,000 sq km
The area of occupancy

Feb 2023

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

- **Income Distance** = average per capita income of a state relative to the national average.
- **Demographic Performance** – measured with the help of 'total fertility rate'.
 - Total fertility rate (TFR) is the average number of children born to a fertile woman through her/their child-bearing years.
 - The inverse of the TFR has been used by the 15th FC to calculate the demographic performance. For example, if the typical child-bearing woman has two children in Andhra Pradesh, the TFR of Andhra Pradesh will be 0.5.
 - But then to calculate share of each state, this inverse of TFR is multiplied by the Population of the state in 1971.

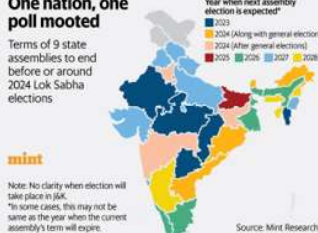
Jan 2024

30 How many delimitation Commissions have been constituted by the Government of India till December 2023?
 (a) One
 (b) Two
 (c) Three
 (d) Four

- The right to vote can be quantitatively and qualitatively diluted through redrawing electoral boundaries, leading to issues in democracy.

One nation, one poll mooted

Terms of 9 state assemblies to end before or around 2024 Lok Sabha elections



Year when next assembly election is expected?
 ■ 2023 ■ 2024 (Along with general elections) ■ 2024 (After general elections) ■ 2025 ■ 2026 ■ 2027 ■ 2028

mint

Note: No clarity when election will take place in J&K. In some cases, this may not be same as the year when the current assembly's term will expire.

Source: Mint Research

SARVESH KUMAR SHARMA/MINT

SACHAR COMMITTEE ON MUSLIMS	DATA SHOW CONVERGENCE WITH REST OF INDIA
IMR, USMR both decreasing DIVERGENCE between national average and Muslim average increasing (1992-93 to 1998-99)	IMR, USMR both decreasing CONVERGENCE between national average and Muslim average increasing (1998-99 to 2005-06)
Worse off than national average (1998-99)	Better than national average (2005-06)
Higher than national average by 0.7% points in 1992-93. The difference increased to 1% point in 1998-99	On an average higher than national average by 0.6% points. In 2005-06, but converging
In rural (6% points) and urban areas (10% points) below the national average in 2001	In rural (3.5% points) and urban (8.5% points). Converges with national average in 2007-08

UNDISCRIMINATE (CHILDREN)

FERTILITY RATE

LITERACY RATES

IMR: Infant Mortality Rate; USMR: Under-5 Mortality Rate

Constitutional Safeguards

- **Articles 81 and 170** of the Constitution emphasize maintaining the same population ratio for Lok Sabha and State Legislative Assembly constituencies.
- **Article 327** empowers Parliament to create laws on delimitation, overseen by an independent commission to prevent qualitative dilution.
- **Articles 330 and 332** ensure reservation of seats for Scheduled Castes (SCs) and Scheduled Tribes (STs) during delimitation based on the decennial Census.

History of Delimitation Commissions

- Four delimitation commissions formed in 1952, 1962, 1972, and 2002.
 - Various orders adjusted the number of Lok Sabha and State Assembly seats based on population changes.

Dec 2023

31

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) S-I is correct, but S-II is incorrect
- (d) Statement-I is incorrect, but Statement-II is correct

What has caused the recent thaw in U.S.-Venezuela ties?

Maria Corina Machado's primary win

- Maria Corina Machado achieved a significant victory in the Venezuelan opposition primary.
- The Biden administration had recently agreed to ease sanctions on Venezuela's oil, gas, and mining industries in exchange for free and fair elections in 2024.



Reasons for Re-engagement

- The change in the geopolitical landscape due to the ongoing Russia-Ukraine war played a part in the U.S. re-engaging with Venezuela.
- The U.S. sent officials to negotiate with Venezuela, which has the world's largest oil reserves, to mitigate the energy crisis resulting from the conflict.
- Concerns about regional security consequences of Russia supporting Latin American

Oct 2023

agreement, which it calls null and void.

International pressure and play

- Recently, the U.S. eased sanctions on Venezuela as the Maduro government reached a deal with the opposition for next year's election.
- While Venezuelan president Mr. Maduro retains a tight grip over state institutions, he is also unpopular due to worsening state of the economy,
 - hyperinflation and particularly shortage of essentials.
- While a border crisis could be a welcome distraction for him from domestic woes as elections are approaching, it does not offer any solution to the crises.

India provides \$250 mn Line of Credit to Kenya

- India extended a \$250 million Line of Credit for modernisation of agriculture in Kenya.
- Announcing the initiative, both sides will carry out joint military exercises and will collaborate on counter-terror projects.
- The agriculture Line of Credit, officials said will be



Dec 2023

32

According to the (EPA), which one of the following is the largest source of Sulphur dioxide emissions?

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

Characteristics of Indian Coal

- Indian coal has historically been evaluated as being high in ash content and low in calorific value compared to imported coal.
- The average GCV of domestic thermal coal ranges from 3,500-4,000 kcal/kg compared to imported thermal coals of +6,000 kcal/kg of GCV.
- The average ash content of Indian coals is more than 40% compared to imported coal which has less than 10% ash content.
 - The consequence of this is that high-ash coal when burnt results in higher particulate matter, nitrogen and sulphur dioxide.

02 June 2024 : Daily Issues

<p>33</p>	<p>Under which of the following Articles of the Constitution of India, has the Supreme Court of India placed the Right to Privacy?</p> <p>(a) Article 15 (b) Article 16 (c) Article 19 (d) Article 21</p>	<p>What are Personality Rights?</p> <ul style="list-style-type: none"> Rights of an individual to protect their personality under right to privacy or property. Personality rights are particularly important to celebrities and well-known personalities because their names, images or voices, <ul style="list-style-type: none"> Can be easily misused by various companies to advertise and boost sales of their products. Renowned personalities or celebrities must register their names to save their personality rights. As a result, personality rights are seen as property rights rather than personal rights. <p>Laws pertaining to personality rights</p> <ul style="list-style-type: none"> At present, there is no statute or law that protects personality rights in India. But Article 21 of the Constitution under the right to privacy and right to publicity <ul style="list-style-type: none"> Makes reference to the protection of personality rights. Other statutory provisions protecting personality rights include the Copyright Act, 1957. <p style="text-align: center;">Dec 2022</p> <ul style="list-style-type: none"> BBMP has admitted that the personal information of the voters, including Aadhaar no., phone no., voter ID no., was uploaded <ul style="list-style-type: none"> On an app (Digital Sameeksha) developed by the Trust and not on the EC's voter registration app (Garuda) or voter helpline. Opposition has accused the NGO of large-scale electoral fraud, malpractice and manipulation of voters' lists. <p>What will happen to the data now?</p> <ul style="list-style-type: none"> Data which was collected by the NGO has potential for misuse. Such mass collection of data is violative of the FR to privacy as defined in Justice K.S. Puttaswamy (ret'd.) vs Union of India. <ul style="list-style-type: none"> Judgment formally recognised the right to privacy as being a FR stemming from the right to life and personal liberty, Guaranteed under Article 21 of the Indian Constitution. <p style="text-align: center;">Nov 2022 & Mains Ans Writing 24</p>
<p>34</p>	<p>Consider the following:</p> <ol style="list-style-type: none"> Pyroclastic debris Ash and dust Nitrogen compounds Sulphur compounds <p>How many of the above are products of volcanic eruptions?</p> <p>(a) Only one (b) Only two (c) Only three (d) All four</p>	<p>Cinder Cones</p> <p>These types of volcanoes typically don't release lava. Rather, their eruptions typically emit volcanic ash and rocks, known as pyroclastic products.</p> <p>Cinder cones are characterized by a bowl-shaped crater at the top, and usually don't exceed 400 m (1,312 ft) in height.</p> <p style="text-align: center;">Pre Test Series 2024 : Geo II & Apr 2024 Daily Quiz</p> <p>A cooling smoke cloud</p> <ul style="list-style-type: none"> Usually, the smoke of a volcano and the sulphur dioxide contained inside the smoke cloud ultimately leads to a cooling of the earth's surface for a short period. <ul style="list-style-type: none"> This is because sulphur dioxide transforming into sulphate aerosols, causes shading effect for a while, until the sulphate down or gets rained out. But in case of Hunga Tonga, it is an underwater volcano. It produced little smoke but a lot of water vapour. The enormous heat of the eruption transformed huge amounts of sea water into steam, which then shot high into the atmosphere with the force of the eruption. All that water ended up in the stratosphere: a layer of the atmosphere between about 15 and 40 kms above the surface, producing neither clouds nor rain. <p style="text-align: center;">03 June 2024 Daily Issues</p> <p>Early composition</p> <ul style="list-style-type: none"> The most critical parameter pertaining to the chemical composition of an atmosphere is its level of oxidation or reduction. At one end of the scale, an atmosphere rich in molecular oxygen (O₂)—like Earth's present atmosphere—is termed highly oxidizing, while one containing molecular hydrogen (H₂) is termed reducing. These gases themselves need not be present. Modern volcanic gases are located, for example, toward the oxidized end of the scale. They contain no O₂, but all hydrogen, carbon, and sulfur are present in oxidized forms as water vapour (H₂O); carbon dioxide (CO₂); and sulfur dioxide (SO₂); while nitrogen is present as molecular nitrogen (N₂), not ammonia (NH₃). <p style="text-align: center;">M1 Mains Ans Writing</p>

<p>35 Consider the following statements: <i>Statement-I:</i> The atmosphere is heated more by incoming solar radiation than by terrestrial radiation. <i>Statement-II:</i> Carbon dioxide and other greenhouse gases in the atmosphere are good absorbers of long wave radiation. Which one of the following is correct in respect of the above statements? (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I (c) Statement-I is correct, but Statement-II is incorrect (d) Statement-I is incorrect, but Statement-II is correct</p>	<p style="text-align: center;"><u>20 May 2024 Daily Quiz</u></p> <p>Q1) With reference to the Earth’s atmosphere, which one of the following statements is correct? (2023) (a) The total amount of insolation received at the equator is roughly about 10 times that received at the poles. (b) Infrared rays constitute roughly twothirds of insolation. (c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere. (d) Infrared waves are a part of the visible spectrum of electromagnetic waves of solar radiation.</p> <p>SOL: c Greenhouse Effect: Option (c) aligns directly with a crucial atmospheric process. Water vapor acts as a greenhouse gas, readily absorbing the infrared radiation emitted by the Earth’s surface. This trapped heat contributes to the greenhouse effect, a fundamental mechanism regulating Earth’s temperature. The Greenhouse Effect : 1. Incoming solar radiation, primarily visible light, reaches Earth’s surface, causing warming.</p> <p style="text-align: center;">Mar 2024 Daily Quiz</p> <p>Q5. “The insolation received by the earth is in short waves forms and heats up its surface. The earth after being heated itself becomes a radiating body and it radiates energy to the atmosphere in long wave form. This energy heats up the atmosphere from below.” What is the above process is better known as? (a) Terrestrial radiation (b) Atmospheric heating (c) Albedo (d) Heat budget</p> <p>Ans: (a) Explanation: The insolation received by the earth is in short waves forms and heats up its surface. The earth after being heated itself becomes a radiating body and it radiates energy to the atmosphere in long wave form. This energy heats up the atmosphere from below. This process is known as Terrestrial radiation.</p> <p style="text-align: center;">M7 Mains Ans Writing 2024 MCQ</p>
<p>36 Which of the following statements are correct in respect of a Money Bill ? 1. Article 109 mentions special procedure in respect of Money Bills. 2. A Money Bill shall not be intro in 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. (a) 1 and 2 only (b) 2 and 3 only (c) 1, 2 and 3 (d) 1, 3 and 4</p>	<p>V. In the context of the Indian Parliament, which of the following statements is true regarding Money Bills? A) Money Bills can only be introduced in the Lok Sabha (House of the People). B) Money Bills can be introduced in both the Lok Sabha and the Rajya Sabha (Council of States). C) Money Bills require the approval of both houses of Parliament to become law. D) Money Bills can include provisions unrelated to financial matters.</p> <p>Correct Answer: A) Money Bills can only be introduced in the Lok Sabha (House of the People).</p> <p>According to Article 110 of the Indian Constitution, Money Bills can only be introduced in the Lok Sabha (House of the People), and they must be recommended by the President of India. Money Bills exclusively deal with financial matters, and they cannot include provisions unrelated to taxation, borrowing, or expenditure. Additionally, Money Bills are not subject to the approval of the Rajya Sabha (Council of States); they are decided by the Lok Sabha, and the Rajya Sabha can only make recommendations but cannot amend or reject them.</p> <p style="text-align: center;">Oct 2023 Daily Quiz</p>

37

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

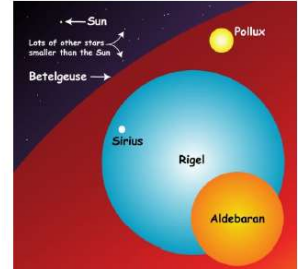
Will Betelgeuse, the bright red giant star, blow up in your lifetime?

Recently reported that Betelgeuse is in its late carbon-burning stage.

- In massive stars like Betelgeuse, the carbon-burning stage lasts only up to a few hundred years.
- After which the star 'dies' and collapses into a supernova within a few months.

What is Betelgeuse?

- Betelgeuse is a red supergiant star with a distinctive orange-red hue.
- Stars in this class are nearing the end of their lives. It is easily spotted in the constellation Orion
- A red giant forms after a star has run out of hydrogen fuel for nuclear fusion and has begun the process of dying

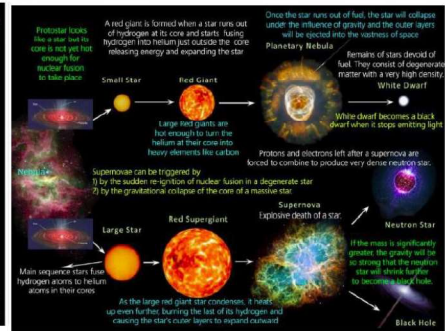
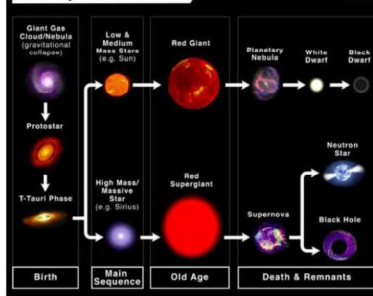


June 2023

Astronomers find the small, hot helium stars they were looking for

Astronomers found a unique class of stars, hot and covered in helium, that had been elusive for a decade, confirming the validity of existing theories about stars.

Life Cycle of a Star



Push v. Pull: Why Stars Don't Collapse

- Newton's law of gravity suggests that all objects with mass attract each other, which

Feb 2024

M93: Explain the concept of 'Chandrasekhar Limit' and show how it has impacted the study of astrophysics.

Detailed Synopsis

Subrahmanyan Chandrasekhar and Chandrasekhar Limit

- NASA's premier X-ray observatory was named the Chandra X-ray Observatory in honor of the late Indian-American Nobel laureate, Subrahmanyan Chandrasekhar (pronounced: su/bra/mon/yon chandra/say/kar). Known to the world as Chandra (which means "moon" or "luminous" in Sanskrit), he was widely regarded as one of the foremost astrophysicists of the twentieth century.
- Chandra immigrated in 1937 from India to the United States, where he joined the faculty of the University of Chicago, a position he remained at until his death. He and his wife became American citizens in 1953.
- Trained as a physicist at Presidency College, in Madras, India and at the University of Cambridge, in England, he was one of the first scientists to combine the disciplines of physics and astronomy. Early in his career he demonstrated that there is an upper limit — now called the Chandrasekhar limit — to the mass of a white dwarf star.
- A white dwarf is the last stage in the evolution of a star such as the Sun. When the nuclear energy source in the center of a star such as the Sun is exhausted, it collapses to form a white dwarf. This discovery is basic to much of modern astrophysics, since it shows that stars much more massive than the Sun must either explode or form black holes.

M93 Mains Ans Writing 2024

38 Consider the following statements:
Statement-I: The European Parliament approved The Net-Zero Industry Act recently.
Statement-II: The European Union intends to achieve carbon neutrality by 2040 and therefore aims to develop all of its own clean technology by that time. Which one of the following is correct in respect of the above statements?
 (a) Both Statement-I and Statement-II are correct and Statement-I Statement-II explains
 (b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I
 (c) Statement-I is correct, but Statement-II is incorrect
 (d) Statement-I is incorrect, but Statement-II is correct

Green Deal Industrial Plan

The European Union revealed the “Green Deal Industrial Plan” that aims to cut red tape and provide massive subsidies in a bid to support and expand its green industry.

- It seeks to formulate a strategy for the “Net-Zero Industry Act.”
- The rules will be relaxed to facilitate easier investment and raising of funds for the EU’s 27 governments to operate and work on clean energy projects.
- The ‘Green Deal Industrial Plan’ aims to create a “Net-Zero Industry Academies” that will provide up-skilling and re-skilling programmes in strategic industries.

Feb 2023 Pre Add On

- This production plan is also 69% more than what would be in line with the 2-degree Celsius target.

Promises of Net-Zero Emissions

- 151 governments have pledged to achieve Net-Zero emissions, meaning no net emissions from 2050-2070, as part of 2015 Paris agreement.
- Despite these promises, current forecasts suggest that global coal production will increase until 2030,

Many Climate related Articles covered saying all developed countries including the G7 & EU have set 2050 as the deadline

39 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

Role of ethics committee

- The ethics committee was constituted in 2000, to oversee the moral and ethical conduct of members and examine cases of unethical conduct referred to it.
- The Committee examines complaints filed against members of the House by other members; outsiders through a member; or referred by the Speaker.
- The Committee makes a *prima facie* inquiry before deciding to examine a complaint and presents its report to the Speaker, who then places it in house.
- The term ‘unethical’ is not defined and is left to the Committee to decide whether any act is unethical or not.

Source :Nov, Dec 2023

SOLUTION: B

The members of the Ethics Committee are appointed by the Speaker for a period of one year. 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.

The Speaker can refer to the Committee any complaint against an MP.

The Committee does not entertain complaints based only on media reports or on matters that are sub-judice. The Committee makes a *prima facie* inquiry before deciding to examine a complaint. It makes its recommendations after evaluating the complaint.

Source : Daily Quiz Nov 2023

40

Consider the following statements:

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

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

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

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

- While the administration and Congress decide on taxation and spending, the collection of taxes and borrowing of funds is done by U.S. Treasury Department.
- During First World War, the Congress created a limit on borrowing at \$11.5 billion thus creating a debt ceiling that could only be raised by approval of the Congress.
- According to Treasury Department figures, Congress has acted many times to permanently raise, temporarily extend, or revise the definition of the debt limit.
- While the government continues to receive taxation revenue after hitting the debt ceiling, it cannot borrow any more to pay its existing bills.
- The U.S. would then be unable to pay its debt-holders, resulting in a default.

What will happen if the U.S. defaults?

- Analysts say there is no set post-default scenario since the U.S. has never actually defaulted on its debt before.
- However they have warned of a catastrophic situation for American and global financial markets.
- If the government cannot make interest payments to domestic and foreign investors who own its debt securities, it could plunge the globe into a financial crisis.
- This could lead to downgrade of U.S. creditworthiness by agencies, large-scale job losses, weakening of the dollar, stock sell-offs and a rise in the cost of borrowing for the U.S. government.

Source : May 2023