



VAJIRAM & RAVI
Institute for IAS Examination

The Analyst

CURRENT AFFAIRS Handout

4th February 2025

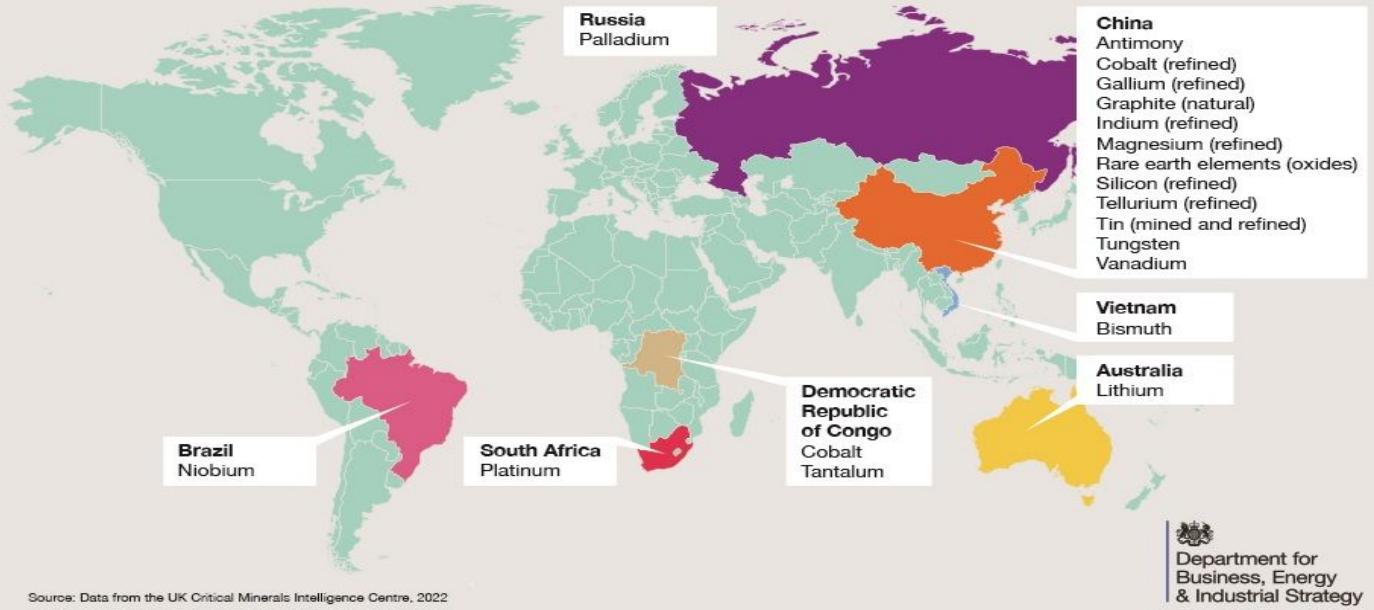


Green and clean

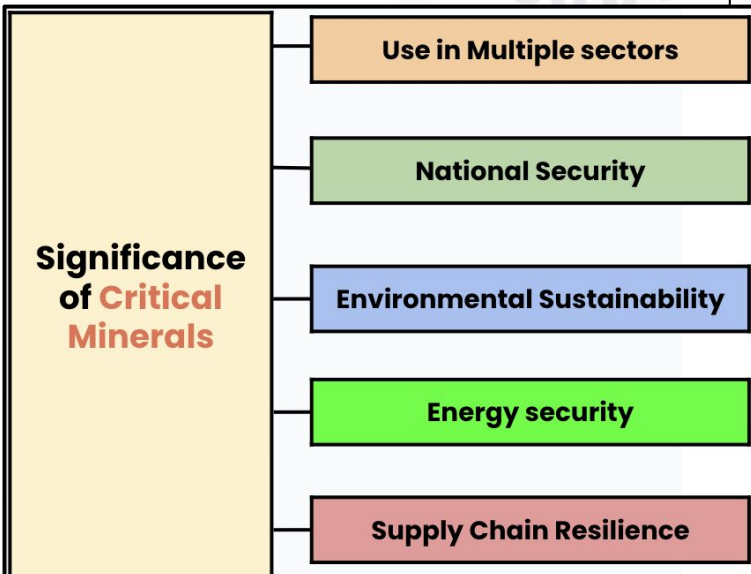
CONTEXT: India must formulate a critical minerals framework.

Top producers globally of the 18 critical minerals

Country with the highest production of each critical mineral; refers to mined production, unless otherwise stated. 5-year average production 2016-2020.



A mineral is **critical** when the **risk of supply shortage** and associated **impact on the economy** is (relatively) higher than other raw materials.



Strengthening Solar Grid with PM-KUSUM

Solarization and de-dieselization of agricultural sector

Installation of Grid Connected Renewable Energy Power Plants by farmers of 0.5 to 2 MW capacity, primarily on barren land

During 2019-20, sanctions were given to various States for installation of:

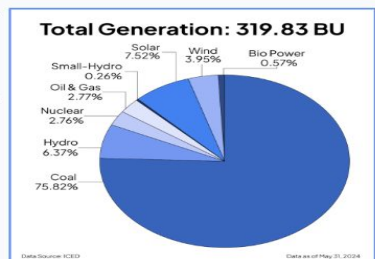
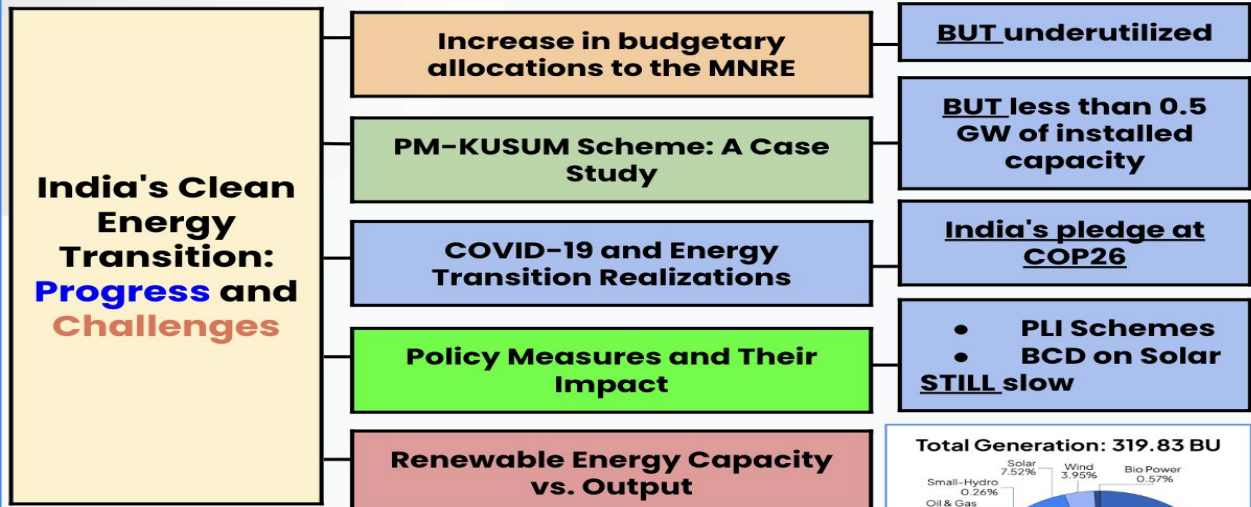
- 1000 MW of renewable energy power plants of up to 2 MW capacity under Component-A
- Installation of 1.71 lakh standalone solar pumps under Component-B
- Solarization of 82000 existing agricultural pumps under Component-C



CONTEXT: India must formulate a critical minerals framework.



Main Article highlights



Green and clean

CONTEXT: India must formulate a critical minerals framework.

Need for a "Critical Minerals Framework"

Significance

Challenges in Localizing Production

Leadership in Critical Minerals Framework

- Capital-Intensive Nature
 - Inflationary Impact of BCDs
- Good news in Union Budget 2025!

- U.S. withdrawing its leadership
- Distributing the benefits

Other Government Initiatives for Production of Critical Minerals

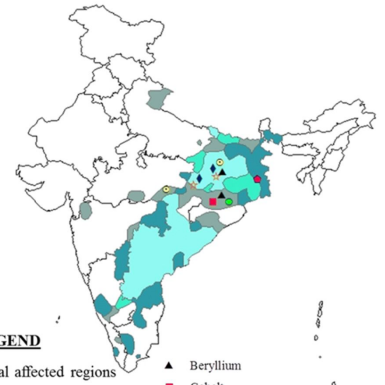
Amendments to the Mines and Minerals Act (2023)

- Auction
- Exploration Licenses

Strengthening Refining and Processing Capabilities

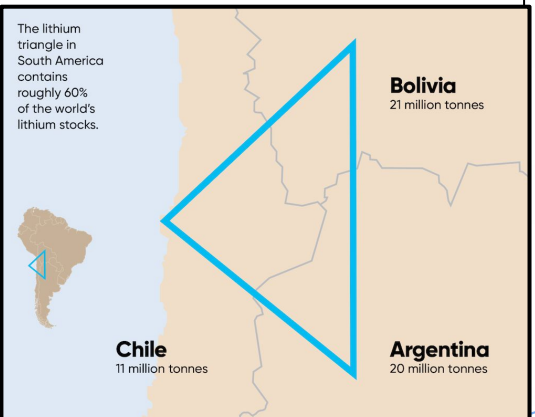
Bilateral Partnerships

- Mineral Security Partnership
- KABIL
 - Latin America (\$24 m)
 - Australia MoU
 - Canada, Brazil
 - IREUK Titanium Limited



LEGEND

- Naxal affected regions
- Highly affected
- Marginally affected
- Moderately affected
- Targeted
- Beryllium
- Cobalt
- Gallium
- Molybdenum
- Nickel
- Tin
- Tungsten



CONTEXT: India must formulate a critical minerals framework.

Key Recommendations

- Address **implementation bottlenecks**
- Invest in **Grid-Scale Battery Storage**
- Promote **Domestic Manufacturing**
- **Africa's Role**
- **Just and Equitable CM Framework**

Premils PYQs

Q.1 Consider the following minerals:

1. Bentonite
2. Chromite
3. Kyanite
4. Sillimanite

In India, which of the above is/are officially designated as major minerals?

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

Q.2 Recently, there has been a concern over the short supply of a group of elements called 'rare earth metals'. Why?

1. China, which is the largest producer of these elements, has imposed some restrictions on their export.
2. Other than China, Australia, Canada and Chile, these elements are not found in any country.
3. Rare earth metals are essential for the manufacture of various kinds of electronic items and there is a growing demand for these elements.

Which of the above statements is/are correct?

- a. 1 only
- b. 2 and 3 only
- c. 1 and 3 only
- d. 1, 2 and 3

Mains PYQs

While significant progress has been made, there are still hurdles to overcome, particularly in scaling up renewable energy deployment and developing a robust critical minerals framework. Explain.
(15 Marks, 250 words)

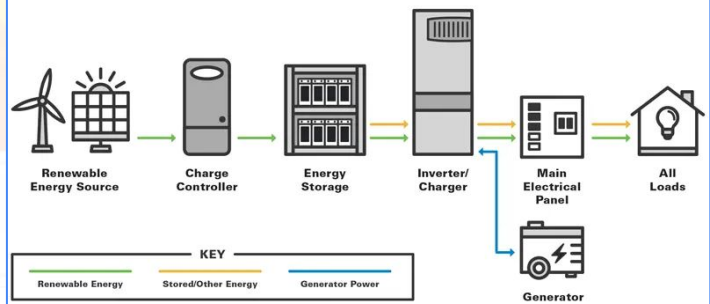
#ViksitBharatBudget2025

Lithium-ion Battery Manufacturing



- **35 additional capital goods** for EV battery manufacturing, and **28 additional capital goods** for Mobile phone battery manufacturing, will be added to the list of Exempted Capital Goods
- It will boost **domestic manufacturing of Lithium-ion battery**, both for Mobile phones and Electric Vehicles
- **Full exemption of BCD** on cobalt powder and waste, the scrap of lithium-ion battery, lead, zinc and 12 more critical minerals

Grid energy storage technology



Sl. No.	Critical Mineral	Percentage (2020)	Major Import Sources (2020)
1.	Lithium	100%	Chile, Russia, China, Ireland, Belgium
2.	Cobalt	100%	China, Belgium, Netherlands, US, Japan
3.	Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
4.	Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
5.	Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
6.	Germanium	100%	China, South Africa, Australia, France, US
7.	Rhenium	100%	Russia, UK, Netherlands, South Africa, China
8.	Beryllium	100%	Russia, UK, Netherlands, South Africa, China
9.	Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
10.	Strontium	100%	China, US, Russia, Estonia, Slovenia
11.	Zirconium(zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
12.	Graphite(natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
13.	Manganese	50%	South Africa, Gabon, Australia, Brazil, China
14.	Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
15.	Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

Table 1 The net import reliance for critical minerals of India (2020) (Source: A report on 'Unlocking Australia-India Critical Minerals Partnership Potential' by Australian Trade and Investment Commission, July 2021)



Anti-Conversion laws

CONTEXT: Once passed, Rajasthan will join 11 other states in having an anti-conversion law.

What Are Anti-Conversion Laws?

Legislative frameworks designed to regulate religious conversions by penalising forced, fraudulent, or incentivised conversions

- **Key features** of Anti-Conversion Laws include

Prohibition on Forced Conversions

Notification Requirements

Fines and imprisonment

Need for the Anti-Conversion Laws

2021- 23: 427 cases (UP)

Art 25 Balance

Promise of financial/material/marriage

Hate speech, misinformation

SC Observation

- forced religious conversion is a "serious issue"
- Right to Choose

- Pre-independence
- **Indian Conversion (Regulation and Registration) Bill, 1954**
 - enforce "missionary licensing and conversion registration with government officials."
 - **Main issues:** Opposition + State list
- **Constitutional** Provision of "Conversion"?
- **1st:** Orissa Freedom of Religion Act, 1967

10 YRS IN PRISON FOR VIOLATIONS

What the Rajasthan Prohibition of Unlawful Conversion of Religion Bill, 2025, says:

- > Proposes to prevent unlawful conversions by force, fraud or marriage
- > Marriage on account of "unlawful conversion" to be annulled, court empowered to invalidate such marriages
- > Forced conversions a non-bailable and cognizable offence, and could invite a stringent punishment of up to 10 years in prison
- > Accused to compensate victim

of conversion by up to ₹5 lakh

- > Penal clause includes minimum fine of ₹15,000; ₹25,000 (for conversion of SC/ST); or ₹50,000 (for mass conversions)
- > Registration of institutions or organisations violating provisions of proposed law to be cancelled
- > Vasundhara Raje govt had passed the Rajasthan Religious Freedom Bill in 2008. It however, was not enacted and returned to the govt without the governor's assent on Jan 31, 2025

8 OTHER STATES HAVE SUCH LAWS

Odisha (1967), Madhya Pradesh (1968) and Arunachal Pradesh (1978) have had anti-conversion laws for decades while Chhattisgarh (2006), Gujarat (2003), Himachal Pradesh (2019), Jharkhand (2017), and Uttarakhand (2018) have enacted and implemented these laws more recently.

Some key features of the various state laws:

- > Himachal and Uttarakhand have the provision to declare a marriage illegal if it is solemnised for the sole purpose of conversion.
- > Chhattisgarh provides for either three years' imprisonment or a penalty of up to ₹20,000, or both, for offenders.
- > Jharkhand's anti-conversion law provides for imprisonment of up to three years and a fine of ₹50,000, or both.
- > Odisha stipulates a one-year imprisonment and a fine of ₹5,000, or both.
- > In Karnataka, forced conversion is punishable by imprisonment of three to five years and a fine of ₹25,000.
- > Haryana has a penalty of one to five years' imprisonment and a fine of ₹1 lakh.



Anti-Conversion laws

CONTEXT: Once passed, Rajasthan will join 11 other states in having an anti-conversion law.

Related SC Judgements:

Rev. Stanislaus v. State of Madhya Pradesh and Orissa (1977)

- Upheld **constitutionality**, No right to convert u/right to propagate religion; **forced conversions** can disrupt public order

Sarla Mudgal v. Union of India (1995)

- Right to marry** a person of one's choice; **UCC** need; **"ulterior motives"**

Lata Singh v. State of Uttar Pradesh (2006)

- Upheld** the right to marry a partner of choice: No interference

'Right to Privacy' Judgment (2017)

Hadiya vs. Ashokan K.M. (2018)

- Individual's right to conversion** through marriage

Way Forward

- Thorough **review** of existing anti-conversion
- No **Discrimination**
- Coercive** or **fraudulent** conversions
- Multi-Stakeholder** Involvement
- Individual freedom**

MAINS PYQ

Critics argue that anti-conversion laws violate religious freedom, can be misused to harass minorities and infringe on personal choice in marriages. Do you agree? Comment.

(15 Marks, 250 words)

Issues with Anti-Conversion Laws

Vague Terminology (force, induce, allure)

Violation of Fundamental rights?

International Religious Protections

Targeting Minority Communities?

"conflict with the secular nature"

Legislative and Policy Measures

- Religious Institutions (Prevention of Misuse) Act, 1988:** Prevents the misuse of religious institutions for political purposes.
- The Places of Worship (Special Provisions) Act, 1991:** Prohibits the conversion of any place of worship and provides for the maintenance of the religious character of any place of worship as it existed on August 15, 1947.
- Anti-Conversion Laws:** Various states have enacted laws to regulate religious conversions to prevent conversions by force, fraud, or inducement.

Freedom of Religion (Art. 25-28)

- Article 25:** Freedom of conscience and free profession, practice and propagation of religion.
- Article 26:** Freedom to manage religious affairs.
- Article 27:** Freedom as to payment of taxes for promotion of any particular religion.
- Article 28:** Freedom as to attendance at religious instruction or religious worship in certain educational institutions

How the Indian Constitution Addressed Religious Freedom

Directive Principles

- Article 44:** It calls for the state to endeavor to secure for citizens a Uniform Civil Code (UCC) throughout the territory of India. This aims to replace personal laws based on the scriptures and customs of each major religious community with a common set of laws governing every citizen.

Rights of Minorities (Art. 29 and 30)

- Article 29:** Protects the interests of minorities by allowing any section of citizens residing in India having a distinct language, script, or culture to conserve the same.
- Article 30:** Provides minorities the right to establish and administer educational institutions of their choice, thereby preserving their religion and culture.



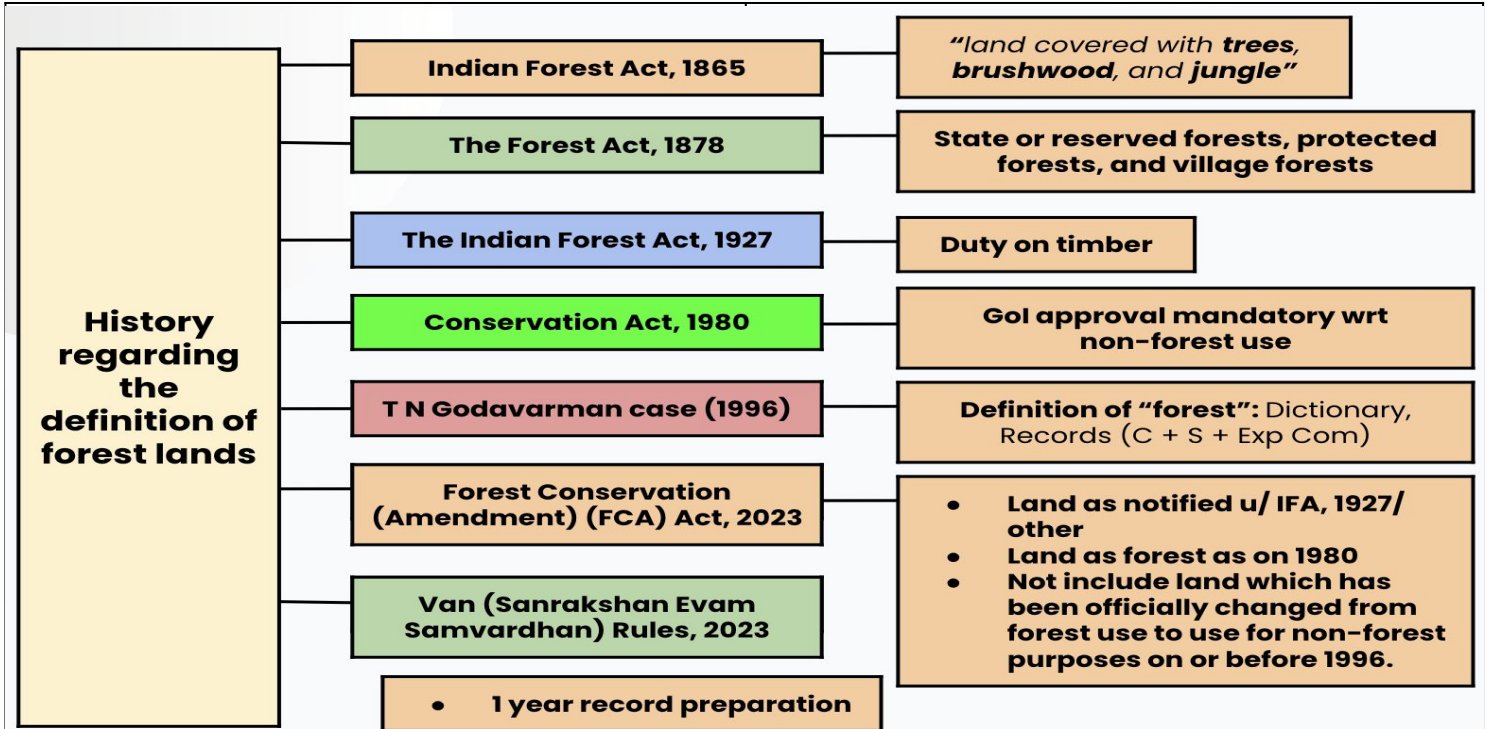
Definition of 'Forest'

SYLLABUS:

GS-3:

Conservation

Newspaper : The Hindu Page No: 12



Verdict on woods

Some of the observations made by the SC over the pleas challenging the 2023 amendments to the Forest (Conservation) Act, 1980



- The "all-encompassing" dictionary meaning will continue to hold field until the States and Union Territories prepare a consolidated record of forest lands
- Environment Ministry should issue a circular in this regard to the States and Union Territories
- Establishment of "zoos or safaris" must have the final approval of the top court

A particular State in India has the following characteristics:

1. It is located on the same latitude which passes through northern Rajasthan.
2. It has over 80% of its area under forest cover.
3. Over 12% of forest cover constitutes the Protected Area Network in this State.

Which one among the following States has all the above characteristics?

- a. Arunachal Pradesh
- b. Assam
- c. Himachal Pradesh
- d. Uttarakhand

Key observations

The Supreme Court made it clear to the Union government and States on Monday that **no steps will be taken by them to reduce forest land unless compensatory land is provided by them for afforestation.**

"We will not allow you to reduce the forest area... You cannot use any forest land for linear projects. If you are using any area for these projects, the same amount of land must be given for compensatory afforestation," a Bench of

the expression "forest" would continue to have a "broad and all-encompassing" meaning and include 1.97 lakh square km of undeclared forest lands.

The Bench had clarified that the "all-encompassing" dictionary meaning upheld by the Supreme Court in the *Godavarman Thirumulpad* case over 25 years ago would continue to hold field till the States and Union territories prepare a "consolidated record" of all the lands recorded as "forest" in government records, including forest-like areas, unclassified and community forest lands.

The court said the exercise to prepare such a consolidated record was part of Rule 16 of a notification issued by the Environment Ministry on November 29, 2023, and would take a year.

Meaning of 'forest'

However, the court had directed the government, for clarity's sake, to **revert to the "dictionary meaning" of 'forest' as upheld in a 1996 Supreme Court decision in the TN Godavarman Thirumulpad case.** The term 'forest' had been given a broad meaning by the court then to preserve



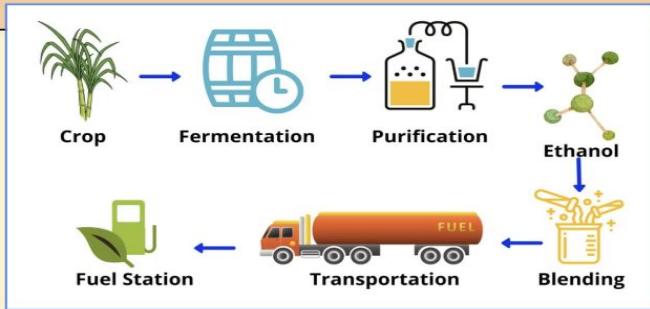
SYLLABUS:

GS:3-

Conservation

Newspaper : The Hindu **Page No:** 8

What is ethanol blending?



- C_2H_5OH => **renewable** biofuel
- **Fermentation** of sugars
- **Blending** Ratio
- **Benefits** of Ethanol Blending

- **Reduces pollutants**
- **Energy Security**
- **Agricultural Support**
- **Octane Boost**

M. Kalyanaraman

The story so far:

Union Minister Nitin Gadkari said that India will achieve its target of 20% ethanol blending of petrol in the next two months, at least a year ahead of what was originally planned. This would entail the production of nearly 1,100 crore litres of fuel ethanol in one year.

Where will this come from?

The 1,100 crore litres of fuel ethanol will come from sugar and high grade molasses, Food Corporation of India (FCI) rice, broken rice, and maize. India's ethanol distillery capacity has ramped up to 1,600 crore litres, driven by a range of government incentives and the promise of a stable, lucrative market.

Sugar is expected to provide some 400 crore litres this ethanol year, according to

Deepak Ballani, director general of Indian Sugar and Bio-energy Manufacturers Association. India had closing sugar stocks of around 80 lakh tonnes in October 2024. The projected sugar production for next year is around 315 lakh tonnes out of which 40 lakh tonnes will go to fuel ethanol. Mr. Ballani said that ethanol for non-fuel uses will come from low grade molasses called C Heavy that don't go into sugar production.

The government recently decided to reduce the price of FCI rice to distilleries from ₹28 to ₹22.5 per kg. The government handout states that some 110 crore litres of ethanol will be produced from FCI rice this ethanol year. This means almost 400 crore litres of fuel ethanol should come from maize. For context, India was producing little or no ethanol from maize until 2020. Besides pure-play grain-based distilleries coming up, some sugar distilleries have modified to dual-feed so

How is maize playing a role?

India's maize production is just about enough for traditional needs such as for the poultry sector, livestock feed, starch production and some 10% for human consumption. As the government had imposed curbs on allowing sugar and high quality molasses for ethanol production, maize imports started ramping up in April 2024. From April to June, approx. ₹100 crore worth of maize was imported while, for 2023-24, maize imports were approx. \$33 million.

Ministry of Commerce figures show that a total of \$188 million worth of maize was imported from April to November 2024.

The promise of a steady, lucrative ethanol market has meanwhile goaded many farmers to take to maize cultivation across India. The major maize producing

States are Karnataka, Madhya Pradesh, Maharashtra, Andhra Pradesh, Rajasthan, Bihar, and Uttar Pradesh. For the 2024-25 ethanol year, maize output would be some 42 million tonnes out of which nine million can go towards producing the 350 to 400 crore litres of ethanol, H. S. Jat, director ICAR Indian Institute of Maize Research, Ludhiana, said. Citing good prospects for kharif this year, he said importing maize will not be necessary.

NATIONAL POLICY ON BIOFUELS - 2018

Increased scope of raw materials for 1st Generation Ethanol



FUELLING THE GREEN ECONOMY

<p>Jan, 2003: India allowed sale of 5% ethanol blended petrol in nine States and four UTs</p>	<p>8.5%: Current blending of ethanol with petrol</p>	<p>2025: New target to achieve 20 percent ethanol blending</p>	<p>\$4 bn: Expected annual savings on import bill due to 20 per cent blending</p>
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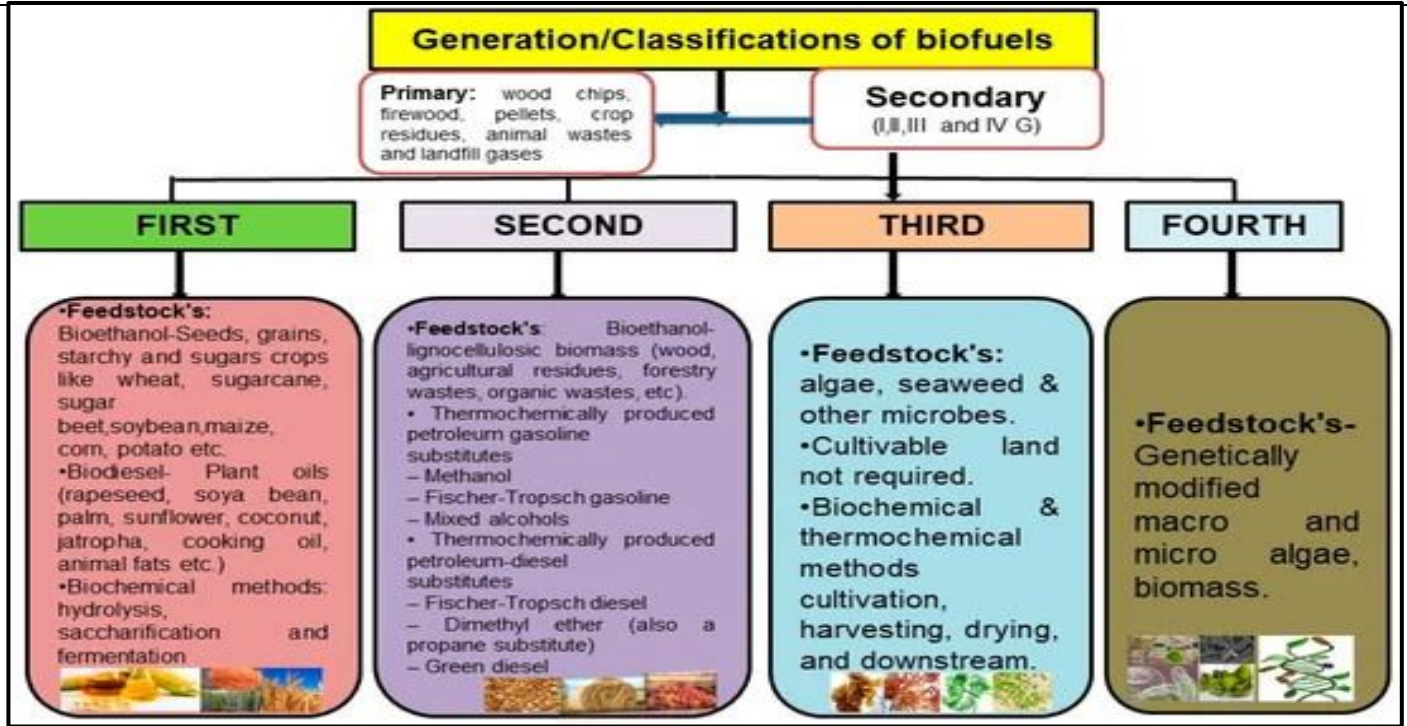


SYLLABUS:

GS:3-

Conservation

Newspaper : The Hindu **Page No:** 8



Given below are the names of four energy crops. Which one of them can be cultivated for ethanol?

- A. Jatropha
- B. Maize
- C. Pongamia
- D. Sunflower

According to India's National Policy on Biofuels, which of the following can be used as raw materials for the production of biofuels?

1. Cassava
2. Damaged wheat grains
3. Groundnut seeds
4. Horse gram
5. Rotten potatoes
6. Sugar beet

Select the correct answer using the code given below:

- a. 1, 2, 5 and 6 only
- b. 1, 3, 4 and 6 only
- c. 2, 3, 4 and 5 only
- d. 1, 2, 3, 4, 5 and 6



SYLLABUS:

GS:3-

Infrastructure:

Ports

Newspaper : The Hindu Page No: 6

Promising shipping sector in India

Sagarmala Programme

Data

- 839 projects worth ₹5.8 lakh crore are planned till 2035
- **EXIM trade growth:** \$116 billion (2022) (77% growth)

Stagnation in Shipping Industry

- **Decline in vessels handled**
- **Lesser Indian-regt ships**
- **Slower gross tonnage**
- **Average vessel age 26 years (2022-23) → 21 years (2024)**
- **Ship ownership rank fell from 17 to 19**

Five Pillars of Sagarmala

- Port Modernisation
- Port Connectivity
- Port-Led Industrialisation
- Coastal Community Development
- Coastal Shipping & Inland Waterways

Project Sagarmala

A Port-led Prosperity Program. Powered by Ministry of Shipping.

Harnessing
7,500 km
Coastline

14,500 km
potentially
navigable waterways



Project Plan

Sagarmala aims to modernize India's Ports. 12 major ports and 185 minor ports are targeted alongside new port development, port connectivity enhancement, port-linked industrialization, connecting coasts to hinterland and coastal community development from 2015 to 2035.

Challenges in Shipbuilding

1. Capital & Finance Issues

- High borrowing costs & short loan tenures.
- Rigid collateral rules – shipowners require additional security beyond ships.
- Unfavorable taxation – Indian-flagged vessels taxed higher than foreign ones.
- Regulatory barriers – complex approvals, slow fund repatriation for ship purchases.

2. Shipbuilding Sector Struggles

- Lack of infrastructure for large vessel construction.
- High costs of raw materials (steel, imported components).
- Heavy reliance on imports for machinery & parts (customs duties increase costs).
- Skill gap in workforce reduces efficiency.
- Limited financing options & delays in ship delivery discourage investment.

3. Competition from Foreign Ships

- Foreign-flag vessels benefit from lower taxes, easier access to capital, lenient regulations.
- Flags of convenience allow hidden ownership, fewer compliance costs.
- Indian ships struggle due to higher port charges, regulatory costs, & training mandates.



Shipping Industry overview

SYLLABUS:

GS:3-

Infrastructure:

Ports

Newspaper : The Hindu **Page No:** 6

Maritime India Vision 2030
Policy Initiatives & Development Projects

Allocation of ₹ 25,000-crore Maritime Development Fund to provide low cost, long-tenure financing to the sector

Setting up of pan-India Port Regulatory Authority to enable oversight across ports as well as to enhance the institutional coverage of the sector

Development of Eastern Waterways Connectivity Transport Grid to pave the way for regional connectivity with Bangladesh, Nepal, Bhutan and Myanmar

Establishment of Riverine Development Fund for providing low cost, long-term financing for inland vessels and extending the coverage of the tonnage tax scheme to inland vessels

Rationalisation of Port Charges to bring in more transparency

Promotion of Water Transport as an alternative means of urban transport

Embassy of India
Thimphu, Bhutan

However, the devil lies in the details. The government's contribution to the MDF will only be 49%, with the remainder to come from major ports. It is unclear whether the ₹25,000 crore will be mobilised in a single year or over multiple years. Given the high capital intensity of shipping, shipbuilding, and port sectors, this amount may still fall short of industry needs.

The Budget appears to have missed a crucial opportunity to address the tax disparities that put Indian ships at a comparative disadvantage to foreign ships, even when operating along the Indian coast. Indian-flagged vessels are subject to a 5% IGST on purchase price, a levy not imposed on foreign-flagged ships. Additionally, Indian shipping companies must deduct tax at source (TDS) on seafarers' salaries, whereas foreign vessels employing Indian seafarers face no such obligation.

Maritime Play

Key Goals...

- ▶ Six deep draft ports
- ▶ Two transshipment hubs
- ▶ Green and smart ports

...Ships and Recycling

- ▶ ₹30,000 cr Maritime Development Fund
- ▶ Three mega shipbuilding and repair clusters

...Mega Ports Push

- ▶ Govt grant and equity infusion from five major ports in Galathea Bay
- ▶ On-ground work for Vadhavan port set to begin in July 2025

The aging Indian shipping fleet requires urgent replacement, and greenhouse gas emissions reduction targets will necessitate investments in green technology. The sector requires long-term financing with lower interest rates and repayment tenures of 7-10 years. Additionally, India needs new shipyards to build large vessels and the expansion and modernisation of existing ones. Although Sagarmala has infused funds in ports, additional funds may still be necessary for modernisation, despite transitioning to a landlord model.

If the MDF is strategically utilised to attract external commercial borrowings (ECBs) at lower interest rates, it could help bridge the funding gap across the maritime sector.

The Indian National Shipowners Association has for long advocated measures to ease capital constraints and eliminate discriminatory tax policies. Two key recommendations, i.e., the creation of a Maritime Development Fund (MDF) and granting infrastructure status to ships, were incorporated into the Maritime India Vision 2030.

The government has announced: a ₹25,000 crore MDF; Infrastructure status for large vessels; facilitation of shipbuilding clusters; a 10-year extension of the basic customs duty exemption on shipbuilding spares and equipment; a revamped financial assistance policy for shipbuilding; credit incentives for shipbreaking in Indian yards, and an extension of the tonnage tax scheme to inland vessels.



SYLLABUS: GS3: Indian Economy and issues
Newspaper : The Hindu **Page No:** 1

Rupee's Decline Against the U.S. Dollar

Basics first!
 For *Prelims* 2025

How currency values are determined?

Appreciation & Depreciation

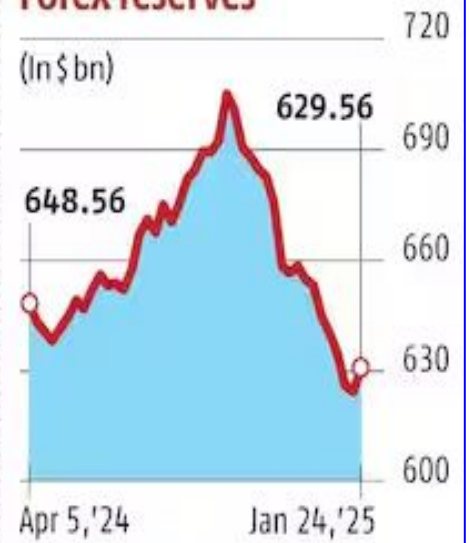
Nominal and Real Ex Rate

What are NEER and REER?

Factors determining Ex Rates

- Market forces
- Inflation
- Interest rate
- Balance of trade
- Speculation

Forex reserves



Source RBI/Bloomberg

United States Dollar to Indian Rupee

87.1900 ↑0.73% +0.6285 Today

3 Feb, 04:06:05 UTC · Disclaimer

1D 5D 1M 6M YTD 1Y 5Y MAX



“However, India has never used exchange rate policies to promote exports. That is not our policy. That’s not a sustainable way to keep growing so we believe in strengthening our export competitiveness through better quality,” Mr. Seth emphasised, adding that India can only envisage ways to handle the uncertainty that any move by the U.S. to raise tariffs will trigger.



Trade war & Rupee depreciation



SYLLABUS: GS3: Indian Economy and issues
Newspaper : The Hindu **Page No:** 1

Factors Contributing to ₹ Weakness

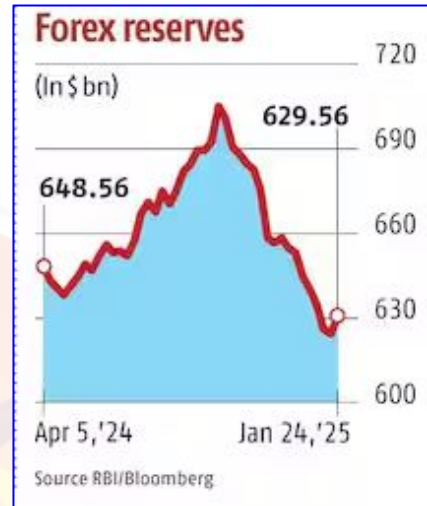
Strong U.S. Dollar

FII Outflows

Oil Importer Demand

Weak Domestic Equity Markets

RBI rate cut speculation



UPSC PYQ (P) 2019

Which one of the following is not the most likely measure the Government/RBI takes to stop the slide of Indian rupee?

- Curbing imports of non-essential goods and promoting exports
- Encouraging Indian borrowers to issue rupee denominated Masala Bonds
- Easing conditions relating to external commercial borrowing
- Following an expansionary monetary policy

UPSC PYQ (P) 2021

Consider the following statements:

The effect of devaluation of a currency is that it necessarily

- improves the competitiveness of the domestic exports in the foreign markets
- increases the foreign value of domestic currency
- improves the trade balance

Which of the above statements is/are correct?

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

UPSC PYQ (P) 2021

With reference to the Indian economy, consider the following statements:

- An increase in Nominal Effective Exchange Rate (NEER) indicates the appreciation of rupee.
- An increase in the Real Effective Exchange Rate (REER) indicates an improvement in trade competitiveness.
- An increasing trend in domestic inflation relative to inflation in other countries is likely to cause an increasing divergence between NEER and REER.

Which of the above statements is/are correct?

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



ELS Cotton

SYLLABUS: GS:1 -Major crops-cropping patterns in various parts of the country

Newspaper : Indian Express **Page No:** 17

Cotton Cultivation in India

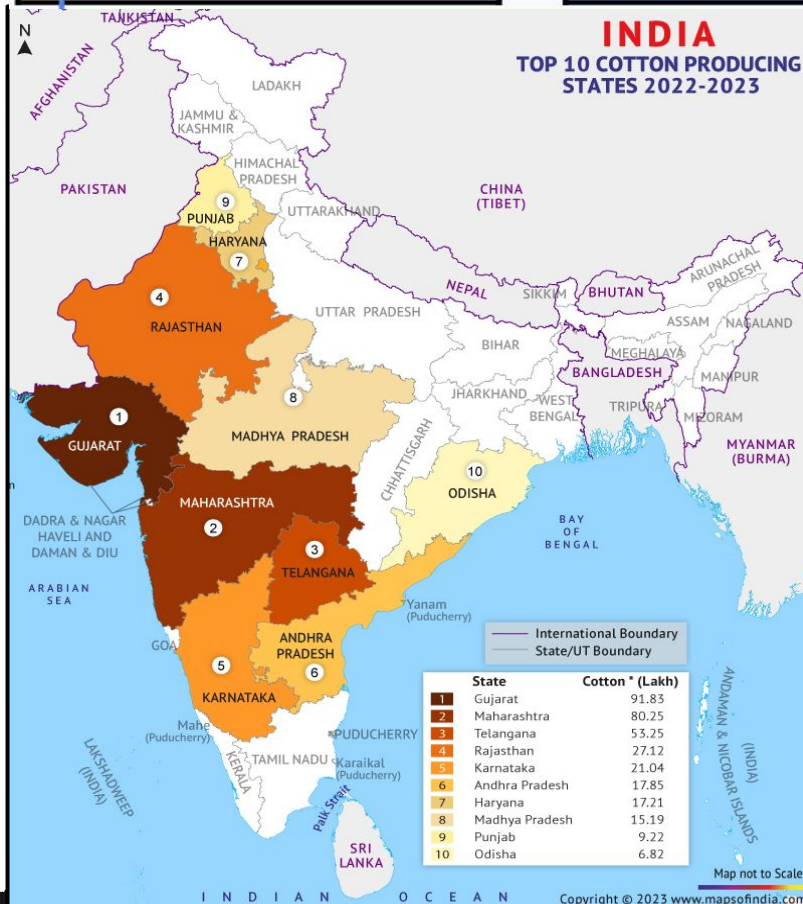
"White Gold"

Growing Conditions

- Hot, Humid, Frost free period
- Well-drained soils
 - Sensitive to waterlogging
 - Variety of soils

India's in Industry

- Largest producer of cotton
- Largest Producing Zone: Gujarat, Maharashtra, Madhya Pradesh



Nonetheless, cotton farmers in India have thus far been reluctant to adopt ELS cotton. This is mainly due to lower than average per acre yields, experts say. While the medium staple variety yields between 10 and 12 quintals per acre, ELS cotton has a yield of only 7-8 quintals.

Additionally, farmers growing ELS cotton are often unable to market their premium produce at premium prices. "The market linkages necessary are not available easily," said one trader.



SYLLABUS: GS:1 -Major crops-cropping patterns in various parts of the country

Newspaper : Indian Express **Page No:** 17

How can the Cotton Mission help?

“The best science & technology support will be provided to farmers,” Sitharaman said in her Budget speech.

With the cotton ecosystem plagued by low per-acre yields, and increased pest attacks, adoption of the latest technologies would be a welcome step, Jain said. “What we need is the farmer to access the latest in GM [genetic modification] technology,” he said.

Farmers in Maharashtra have long demanded that they be allowed to cultivate the herbicide-resistant HtBT cotton, which is illegal at present. This would significantly help with weed management.

Currently, India’s per acre yields are significantly lower than other countries. For instance, Brazil boasts an average yield of 20 quintals per acre, while China boasts a yield of 15 quintals. Better seeds, timely agronomic advice, and adoption of technology would help India improve in this regard, and grow premium varieties such as ELS cotton.

Promoting ELS Cotton

Cotton is classified, based on the length of its fibres, as long, medium, or short staple. *Gossypium hirsutum*, which constitutes roughly 96% of the cotton grown in India, falls in the medium staple category, with fibre lengths ranging from 25 to 28.6 mm.

On the other hand, ELS varieties boast fibre lengths of 30 mm and above. Most ELS cotton comes from the species *Gossypium barbadense*, commonly known as Egyptian or Pima cotton. Having originated in South America, ELS cotton today is mainly grown in China, Egypt, Australia, and Peru.

COTTON?



Properties

Long Fibers
Absorb Ability
Durability

Comes From

Grown in Peru. It is the southwest of the United States and Australia

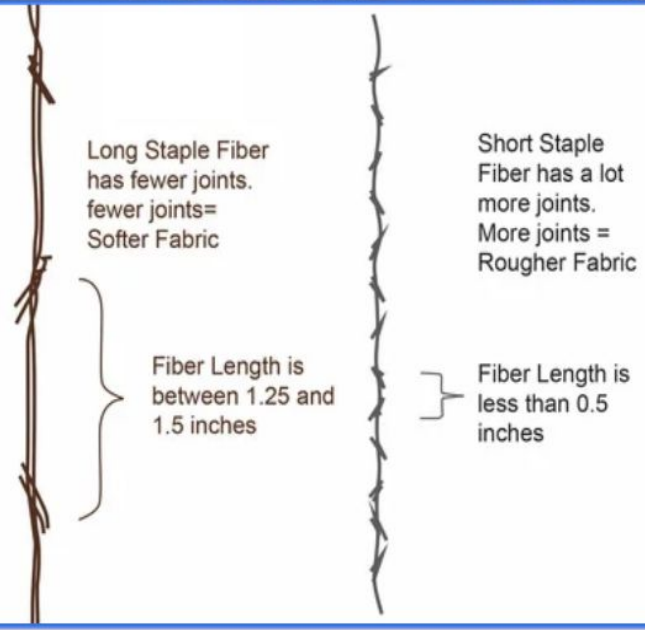
Definition

Pima cotton is The superior blend of cotton also known as extra-long staple (ELS)

#ViksitBharatBudget2025

Mission for Cotton Productivity

- **5-year ‘Mission for Cotton Productivity’** will be launched to facilitate significant improvements in productivity and sustainability of cotton farming, and promote extra-long staple cotton varieties
- Best of **science & technology support** will be provided to **farmers**
- Aligned with our integrated **5F vision for the textile sector**, this will help in increasing **incomes of the farmers**, and ensure supply of quality cotton for rejuvenating India’s traditional textile sector



SYLLABUS: GS:1 -Major crops-cropping patterns in various parts of the country

Newspaper: Indian Express **Page No:** 17

UPSC PYQ (P) 2021

The black cotton soil of India has been formed due to the weathering of

- a. brown forest soil
- b. fissure volcanic rock
- c. granite and schist
- d. shale and limestone

UPSC PYQ (P) 2021

Bollgard I and Bollgard II technologies are mentioned in the context of

- A. clonal propagation of crop plants
- B. developing genetically modified crop plants
- C. production of plant growth substances
- D. production of biofertilizers

"The crop is subtropical in nature. A hard frost is injurious to it. It requires at least 210 frost – free days and 50 to 100 centimeters of rainfall for its growth. A light well-drained soil capable of retaining moisture is ideally suited for the cultivation of the crop." Which one of the following is that crop?

- a. Cotton
- b. Jute
- c. Sugarcane
- d. Tea



Q.1 Consider the following statements regarding the National Critical Minerals Mission:

1. The National Critical Minerals Mission aims to ensure the secure and sustainable supply of critical minerals essential for India's economic and strategic needs.
2. The mission focuses exclusively on domestic exploration and mining, without any provisions for international collaborations or acquisitions.
3. Critical minerals identified under the mission include lithium, cobalt, and rare earth elements that are vital for renewable energy, electronics, and defense industries.
4. The government has allocated ₹16,300 crore for the mission to boost exploration, processing, and recycling of critical minerals.

How many of the statements given above is/are correct?

- a) Only One
- b) Only Two
- c) Only Three
- d) All Four

Answer: c

Q2. Consider the following statements regarding the PM-KUSUM scheme:

1. PM-KUSUM aims to promote solar energy use among farmers by providing subsidies for solar pumps and grid-connected solar power plants.
2. The government has allocated ₹34,422 crore for the implementation of PM-KUSUM to achieve its renewable energy and agricultural sustainability goals.
3. The scheme covers 100% of the capital cost of solar pumps for all farmers to encourage widespread adoption.

How many of the statements given above is/are correct?

- a) Only One
- b) Only Two
- c) All Three
- d) None

Answer: b

Q3. Consider the following statements regarding the constitutional provisions for religious freedom in India:

1. Article 25 of the Indian Constitution guarantees the freedom of conscience and the right to freely profess, practice, convert and propagate religion.
2. Article 26 grants religious denominations the right to establish and manage religious institutions.
3. Article 27 prohibits the state from compelling any person to pay taxes for the promotion or maintenance of any particular religion or religious institution.

4. Article 28 allows religious instruction in all educational institutions, including those maintained wholly by the state.

How many of the statements given above is/are correct?

- a) Only One
- b) Only Two
- c) Only Three
- d) All four

Answer: b

Q4. Consider the following statements regarding Biofuels:

1. First-generation biofuels are derived from food crops like corn, sugarcane, and wheat, and include ethanol and biodiesel.
2. Second-generation biofuels are produced from non-food feedstocks such as agricultural waste, wood, and grasses, which do not compete with food production.
3. Third-generation biofuels focus on advanced techniques like genetic engineering and synthetic biology to create biofuels with a significantly reduced carbon footprint.

Which of the statements given above are correct?

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

Answer: a

Q5. Consider the following statements regarding cotton cultivation in India:

1. India is the largest producer of cotton in the world, with its major cotton-growing regions located in the states of Gujarat, Maharashtra, and Andhra Pradesh.
2. Cotton in India grows well in areas with warm temperatures, adequate sunlight, and a moderate amount of rainfall, with the best productivity in regions with irrigated fields.
3. Cotton productivity in India has remained stagnant for the past decade, with little to no improvements in yield per hectare.

Which of the statements given above are correct?

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

Answer: a





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