

172589 693024 1910104964 (2022-21-09-14-57-91) **GS Advanced Program 2023**

**Generic Booklet**

Test Name/Code/No. : 693024

Name			
Email ID.			
Roll No.			
Mobile No.		Date	

**Allotted Time : 60 Minutes**

**Instructions to Candidates -**

- There are 7 Questions in this Question paper.
- All Questions are Compulsory.
- For all updates, please visit the noticeboard - <https://noticeboard.forumias.com/gsap-2023/>

**Important -**

- Answers must be attempted in the QCA Booklet only.
- To upload the Answer Copies please visit to "My Course" section on - <https://academy.forumias.com/>
- Only those copies will be evaluated which will be submitted before the next class.

Q. No.	Grade/Score
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Overall Grade/Score	

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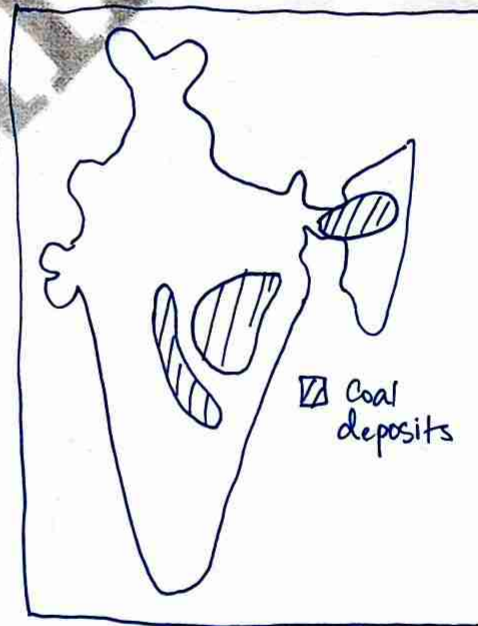
Start Writing Here

Q.1) The coal sector in India faces plethora of issues, which aggravate into coal crisis annually. Critically analyse.

Coal accounts for 55% of the country's energy needs and India has the 5th largest coal reserves in the world.

Reasons for coal crisis

- (i) Low coal inventory at thermal power plants
- (ii) Sudden surge in demand as the economy recovered after Covid-19
- (iii) Increase in international prices of coal due to
  - Shortage in China
  - Russia-Ukraine war
- (iv) Heavy rains → slowdown in the supply of coal to thermal power plants
- (v) Poor financial state of DISCOMS
- (vi) Thermal power plants are operating at a low capacity





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Steps taken

- (i) Inter-ministerial team set up for monitoring supply of coal to thermal power plants
- (ii) Daily shipments of coal to power generators were increased
- (iii) Power ministry has permitted power generator using local coal to use up to 10% blend of imported coal
- (iv) The government has asked thermal plants with captive coal mines to boost their coal output

The coal crisis in India must be solved by research and improvement in transport and infrastructure along with simplifying regulations

Overall Grading (✓)

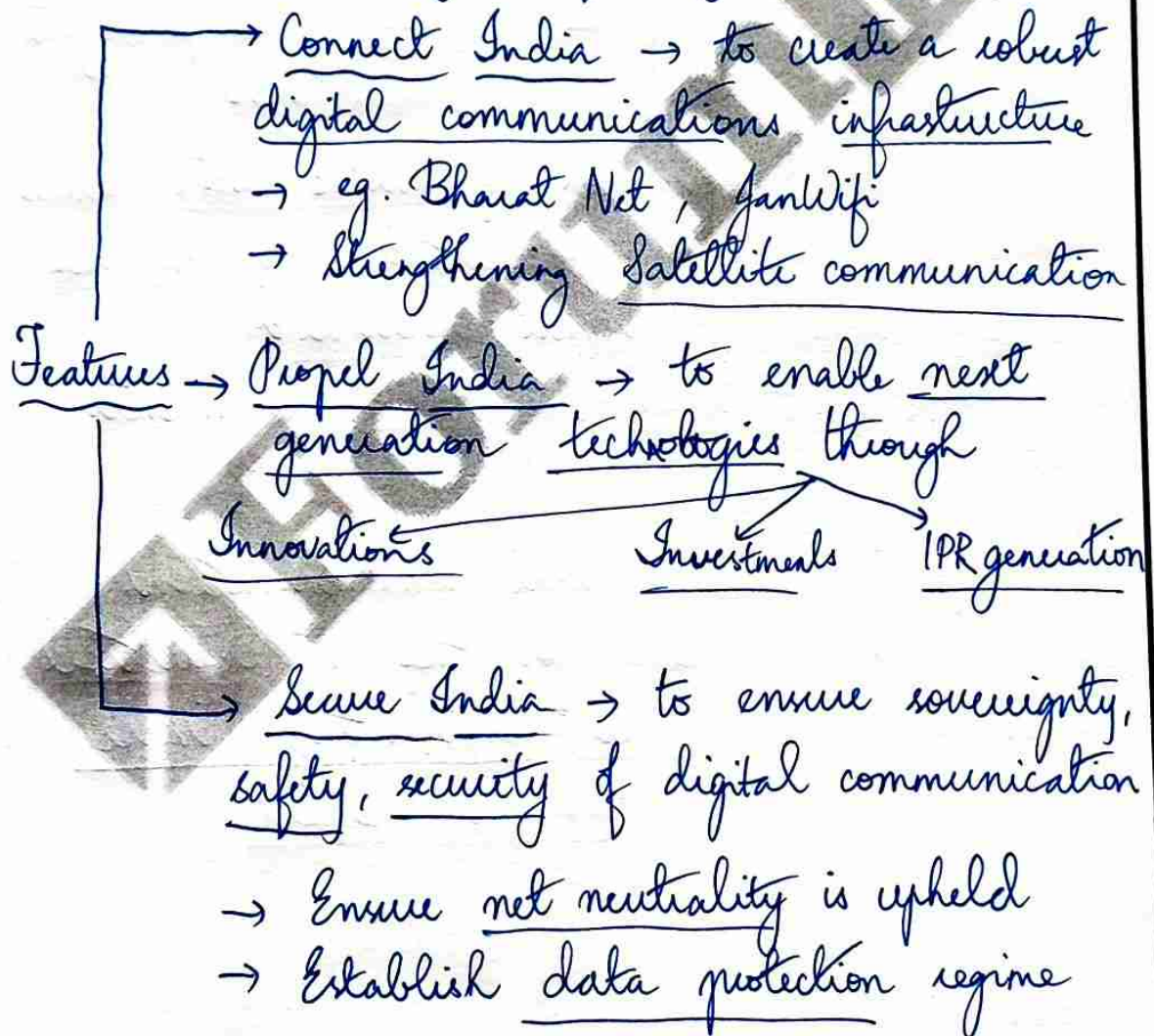
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This Generic QCA booklet can be used to attempt all GS Advanced Program Tests.

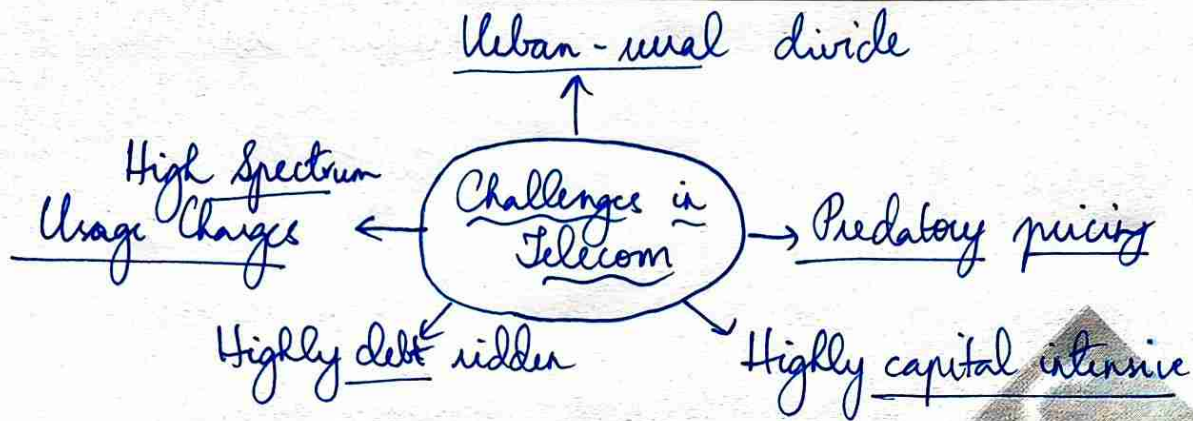
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Q.2) The National Digital Communications Policy 2018 has the grand objective of providing Broadband for all. In this context, discuss the features of the Policy and the steps to be taken to reform the Telecom sector.

The National Digital Communications Policy 2018 seeks to unlock the transformative power of digital communication network to achieve the goal of digital empowerment.







### Steps taken

- (i) PLI schemes for manufacturing of Telecom & networking products
- (ii) BharatNet project → 1,77,550 gram panchayats made service ready in mid 2022
- (iii) PM-WANI - Provision of public WiFi services
- (iv) Rationalisation of Adjusted Gross Revenue  
↳ Non-telecom revenue excluded
- (v) 4 year moratorium on AGR payments

The National Digital Communications Policy prepares India for the 4<sup>th</sup> Industrial revolution and tackles regulatory issues to propel India's telecom market

### Overall Grading (√)

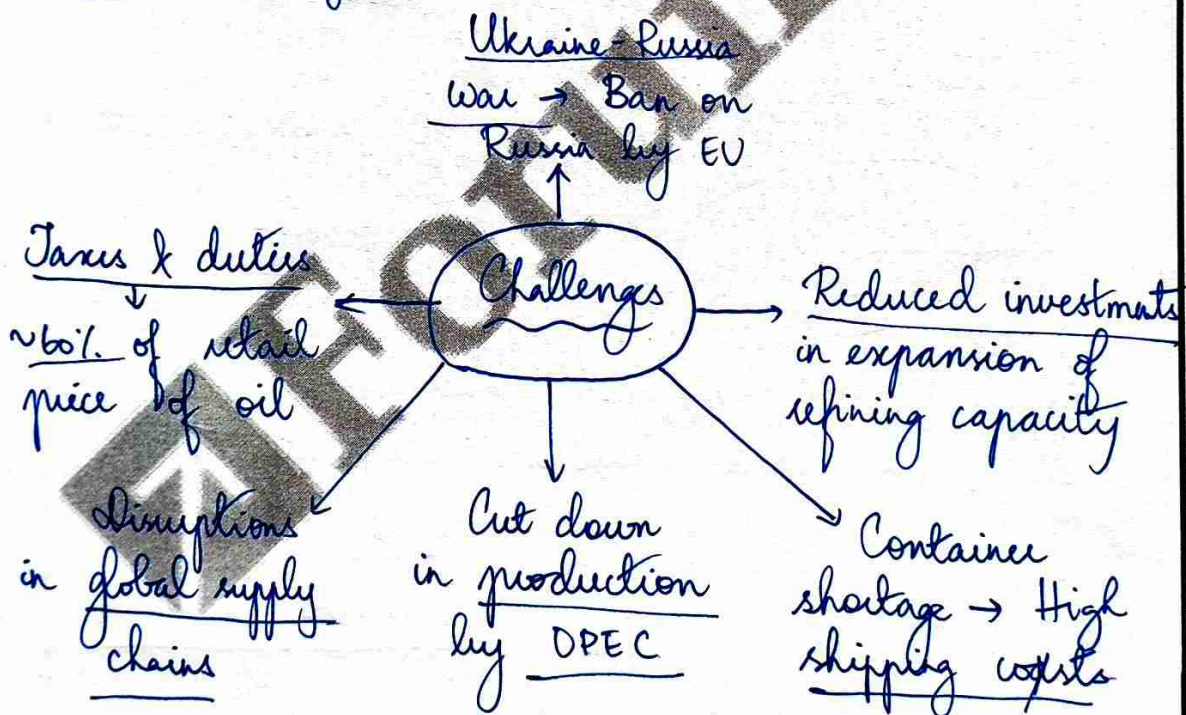
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Q.3)

India's dependence on Oil has further aggravated its energy security concerns. Discuss the challenges that India faces with regard to energy security and various steps taken to solve this crisis.

India relies on overseas purchases to meet about 85% of its oil requirement. Prices of petrol and diesel have been market-determined and are linked with the international market → has aggravated energy security concerns.





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## Steps taken

- (i) Increasing accessibility to clean energy →
  - PM Ujjwala Yojana can bring clean fuel to rural areas
  - Non-conventional energy sources like Tidal, Geothermal energy is being explored
- (ii) Enhancing efficiency through National Mission for Enhanced Energy Efficiency (NMEEE)
- (iii) Development of City Gas Distribution networks
- (iv) 100% FDI under automatic route for renewable energy
- (v) India's energy diplomacy } → Indo-US nuclear deal  
 } → SCO membership

India must continue working on its research and skill building capacity to deal with the transformations in the energy sector to ensure sustainable growth

### Overall Grading (✓)

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Q.4)

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How does the solar power help India in achieving its commitment to achieve Net Zero emissions by 2070. Mention the boost given by the government to the sector through various schemes

India's renewable energy generation is the fourth largest in the world. The target is to achieve 500 GW from renewable energy by 2030, out of which 300 GW is expected to come from solar power.

Targets achieved through solar power

- (i) India ranks 5<sup>th</sup> in solar power deployment contributing ~ 6.5% to global cumulative capacity of around 709 GW
- (ii) India added 10GW to its cumulative cap installed capacity in 2021 via solar energy
- (iii) India had 3GW capacity for solar cell production and 8GW for solar panel production capacity



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Challenges

- Skewed focus - only 6.3 GW from Roof top solar
- limited financing
- low domestic manufacturing capacity

### Government initiatives

- (i) PLI scheme for solar panel manufacturers
- (ii) National Solar Mission
- (iii) 100% FDI via automatic route in renewable energy sector
- (iv) Tariff and non tariff barriers to check imports
- (v) Solar PV manufacturing scheme

India must focus on developing an ecosystem similar to solar parks, with the availability of R&D centres, entire supply chain, universities, laboratories etc.

#### Overall Grading (✓)

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Q.5)

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Discuss and analyse the role played by logistics sector in the economic development of the Nation

Logistics refers to process of managing how resources are acquired, stored and transported to their final destination in the whole supply chain.

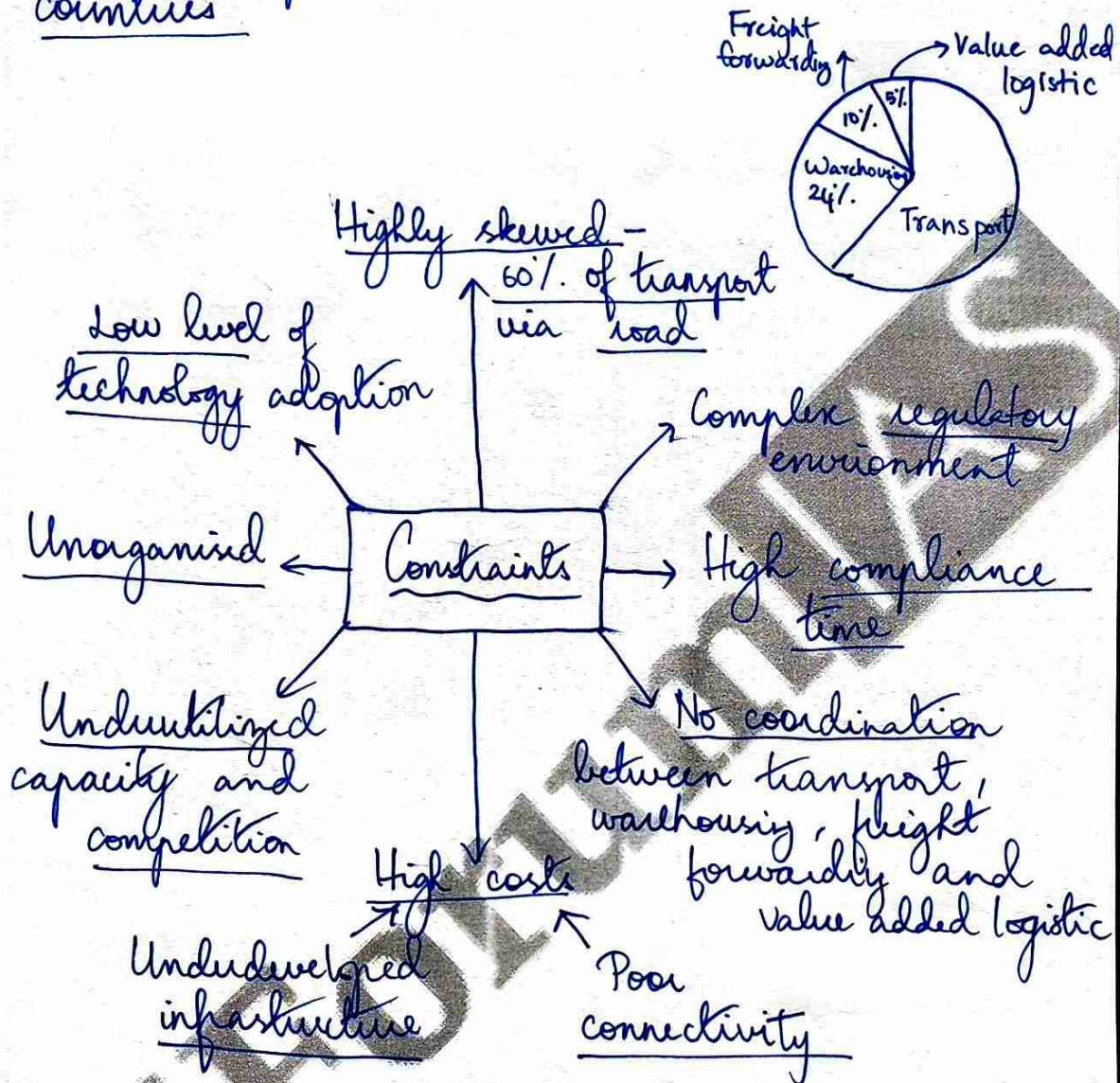
Role in economic development

- (i) It provides livelihood to more than 22 million people
- (ii) It also helps in the development of manufacturing, warehousing and infrastructure
- (iii) E-way bill / Fastag has reduced truck turnaround time by 20%.
- (iv) According to Economic Survey, upgrading the sector can lead to a 10% reduction in indirect logistics cost, with a growth forecast of 10.5% between 2019 and 2025
- (v) It is the backbone of India's international trade and will help in diversifying



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# India's export basket, products and countries



## Measures taken

- (i) Introduction of GST → guarantee economies of scale
- (ii) Grant of Infrastructure status to logistics sector



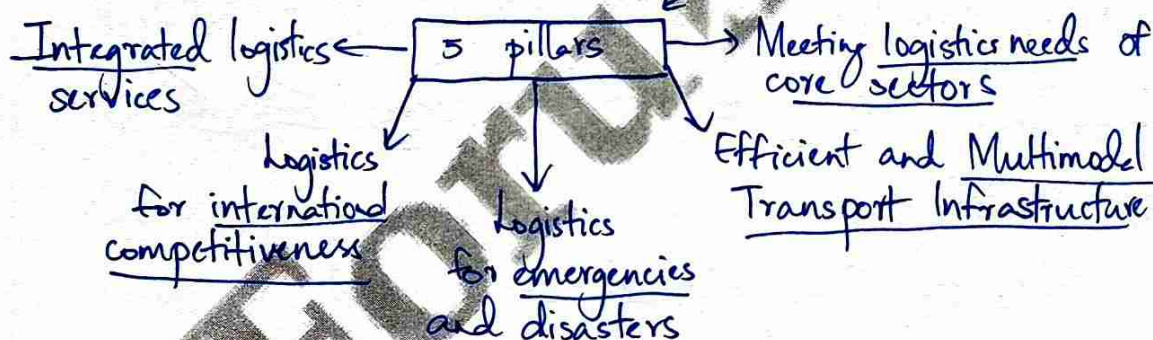
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(iii) Creation of a Logistics division in the  
Department of Commuce for integrated  
development

(iv) Integrated approach to logistics infrastructure

- Multi Model Logistics Parks under Bharatmala
- Sagarmala
- Industrial and Dedicated Freight corridors

(v) Draft National Logistics Policy → to reduce logistics cost to 9% of GDP (at present - 14% of GDP),



Through the various initiatives of the government, Logistics sector will only grow to contribute to the economic growth and development of India.

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Q.6) Bio fuels are not a green alternative to fossil fuels. They take up finite land resources at the cost of food production and carbon storage and doesn't guarantee carbon emissions cuts. In this context, discuss the food-fuel paradox of bio-fuels.

Bio fuels are commonly seen as a cheaper and greener alternative as crude oil prices keep rising. In fact, 1 acre likes of E-10 saves around 20,000 tonnes of CO<sub>2</sub>.

Why are Bio fuels not a green alternative ?

- (i) Dedicating areas for biofuel production increases competition for land
- (ii) It takes a lot of land and water to yield a small amount of fuel → Inefficient use of land
- (iii) Biofuels that makes dedicated use of land does not genually cut greenhouse gas emissions

(iv)



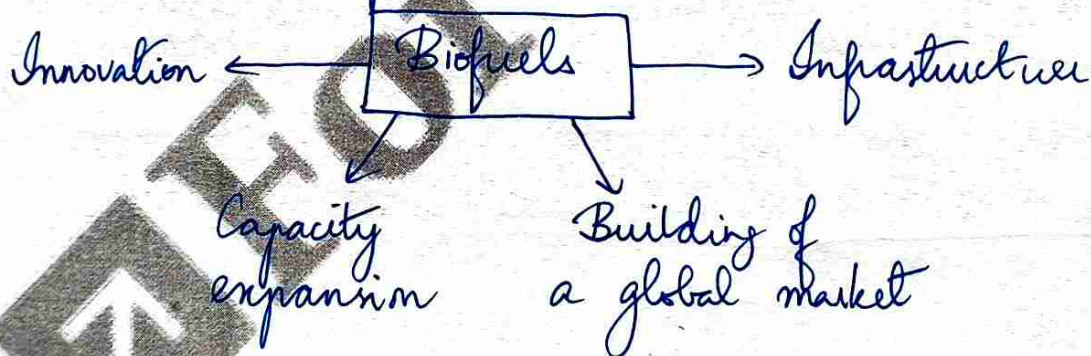
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## Food-fuel paradox

- Around  $\frac{3}{4}$  of world's vegetated land is already being used for food and forest products and this demand is expected to rise by 70% by 2050
- Diverting land, under such circumstances, to biofuels means sacrificing much needed food, timber, carbon storage

## Way forward

- (i) Expansion of Biofuels production must rest on 4 pillars



- (ii) It is important to note that most people starve not because of shortage of food but because of a lack of purchasing power to buy it

- (iii) Concentrating production of biofuels from



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- wasteland, with prime agricultural land being left for food crops
- (iv) Promoting integrated food-energy systems to increase global yields
  - (v) Shifting to second generation cellulosic biofuels produced from non-edible parts of crops, animal fats etc
  - (vi) Encouraging research on identifying new oil-producing plants and expanding the spectrum of biofuels

It is important to look at food security and energy security simultaneously within the framework of regional and local development strategies

Overall Grading (✓)

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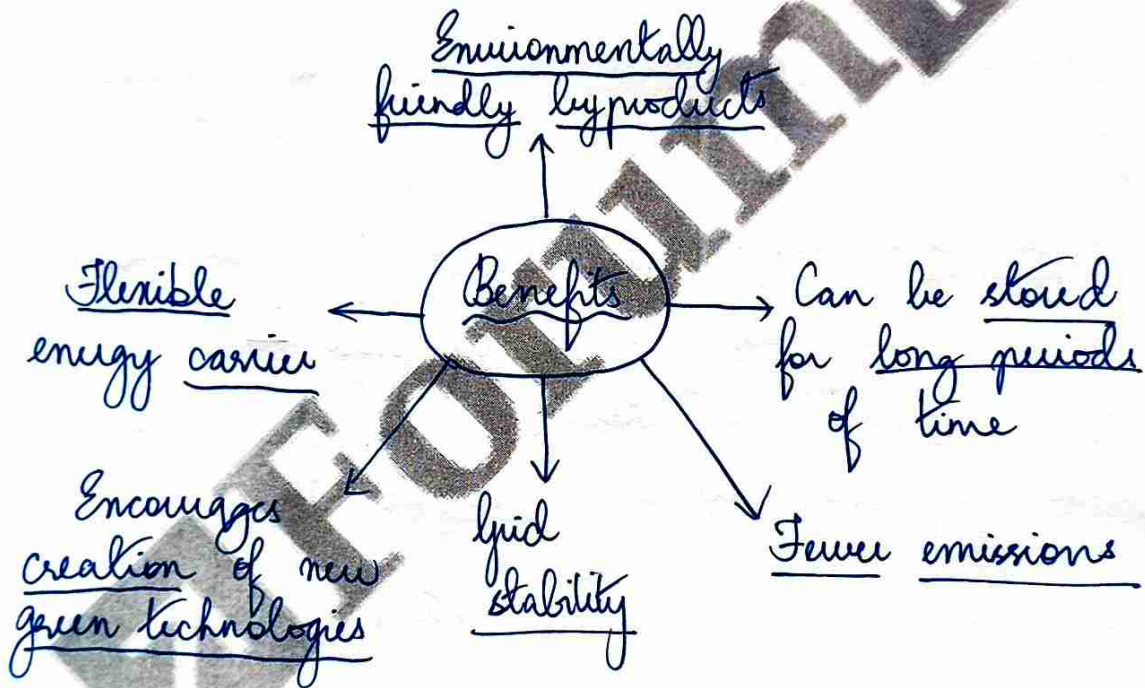


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Q.7)

Is Green Hydrogen the fuel of the future ?  
Critically analyse.

The use of Green Hydrogen is currently at a global demand of 70 million metric tons. It is produced by electrolysis of water using renewable energy and has a lower carbon footprint.



Potential for India

→ 1<sup>st</sup> plant was set up in Assam → to make the country ready for the pilot scale production of hydrogen

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- India's favorable geographic location and abundance of sun helps in green hydrogen production
- Can be promoted in sectors where direct electrification isn't feasible
- Can reduce import dependency on fossil fuels.

### Challenges

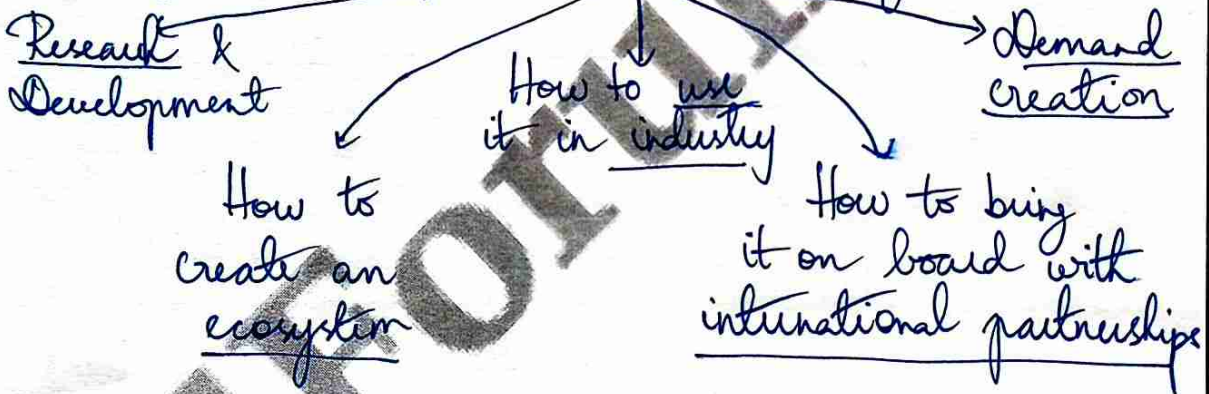
- (i) Economic sustainability of extracting green hydrogen is poor
- (ii) High cost for maintenance of fuel cells
- (iii) Lack of supporting infrastructure → Carbon Capture and Storage and fuel cell technology are at a nascent stage
- (iv) Requires heavy investment in case of commercial usage of hydrogen as a fuel
- (v) Increased leakage risks → can lead to fire accidents
- (vi) Other renewable energy sources can produce low cost electricity



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## Steps taken

- (i) National Hydrogen Energy Mission → to help meet the climate targets and to make India a green hydrogen hub
- (ii) Scaling up gas pipeline infrastructure
- (iii) Proposed introduction of green hydrogen consumption obligations for fertiliser and refinery industry.
- (iv) Govt is focusing on 5 key areas



By setting a national target for green hydrogen and by encouraging <sup>decentralised</sup> production, India can become the centre of green hydrogen manufacturing in the world

### Overall Grading ( ✓ )

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