

GS Advanced Program 2023**Generic Booklet**

Test Name/Code/No. :24.....

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
1	
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Overall Grade/Score	

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Q.1)

Coal in India accounts for 55% of the country's needs and coal & lignite power plants generate 54% of installed power.

However, recently coal crisis looms :-

- ① Low coal inventory at thermal power plants as land for coal mining becoming scarce.
- ② Rise in power demand non covid and lack of mechanism to fulfil demand - shortage of power.
- ③ Rise of open cast mining and underground operation discouraged even for better quality of coal.
- ④ Lack of competitive coal markets.

Recently, the government announced coal sector reforms in line with vision for Atmanirbhar Bharat.

- > Commercial mining of coal allowed - 50 blocks offered to private sector
- > Entry norms liberalised & done away with.
- > coal bed methane extraction from coal indian mines.

The above reforms can ring coal sector mines :-

- ① Increase domestic production of coal - and ensure energy security and protect FOREX.
- ② Govt. get revenue from equitable revenue sharing model.

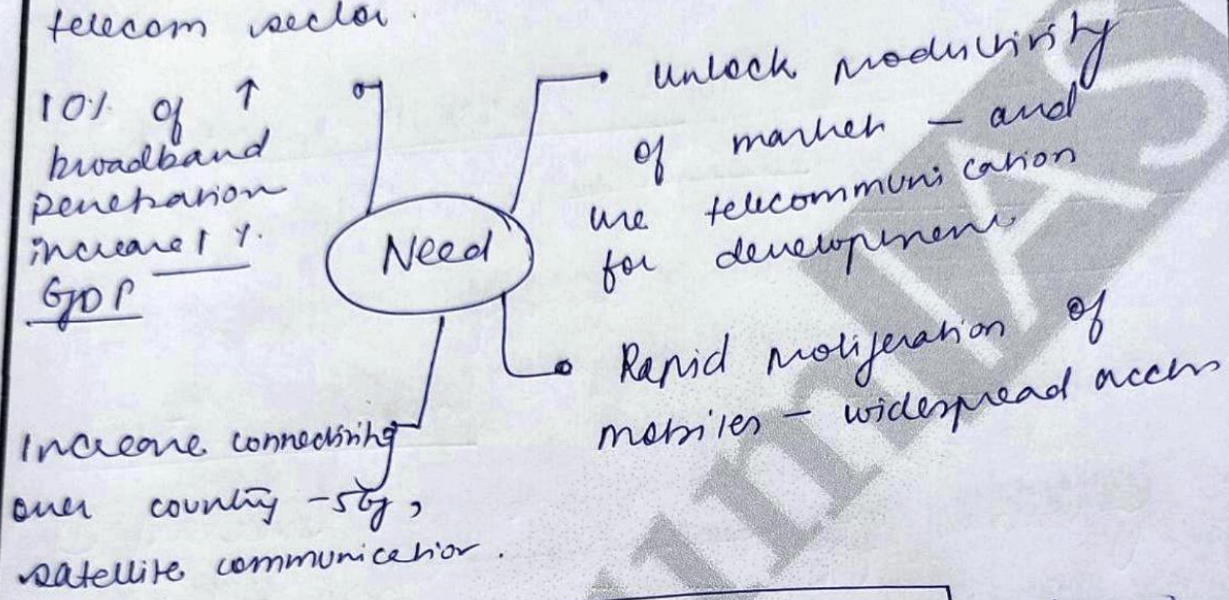
The need of the hour can be held to be - invest in renewable to help climate and energy efficiency, however, NITI Aayog suggests, putting onus on state governments for land & sea, allowing commercial mining - which have been done.

Overall Grading (✓)

Poor			Average			Good		
1	2	3	4	5	6	7	8	9

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

Q.2) The National Digital Communication Policy 2018, aimed to replace existing National Telecom Policy - 2012 in the telecom sector.



→ Features of the Policy ←

① Connect India

- > National Broadband mission : universal broadband connectivity
- > GramNet : connect all key rural development institutions.
- > Nager Net : 1 mill public Wi-Fi hotspot in urban area.
- > Tan wifi : 2 mill WiFi hotspot in rural India.

② Propel India
 > Enhance investment, innovation and IPR generation; train and re-skill manpower.

③ Secure India
 > Establish data protection regime safeguard privacy; ensure net neutrality principles are upheld develop robust digital connection.

This will enhance access and markets - and other reforms:

① PII schemes under Atmanirbhar Bharat - manufacturing of telecom sector.

② telecom sector reforms - minimise financial stress of telecoms - and enhance liquidity.

③ PM-WANI: Promotion of public wi-fi spaces.

Hence, in the era of 4th industrial revolution reforming telecom sector need of now to tap into GDP potential.

Overall Grading (✓)

Poor			Average			Good		
1	2	3	4	5	6	7	8	9

Q.3) India reportedly had rise in energy requirement by 50 % between 2019-2030 (report by IEA) and in that ~~80% was imported~~ 80 % was coal, oil and bio gas.

Indian dependence on export for oil can be seen - 80 % of oil requirement imported (IEA). This has aggravated security concerns.

① Russia-Ukraine war : led to geo-political tensions with sanctions of west on Russia and Russia being India's biggest oil exporter.

② OECD has security need to decrease its oil production to increase profits.

These events have led to :- challenges in energy security.

① with production decreasing in OECD and sanctions on Russia - India facing energy dilemma - regarding import of oil.

② Depleting FOREX Reserves to fund for oil import.

③ ~~oil brings~~ Energy being raw material for fertilizer & petroleum industry - leading to a rise in price.

④ Rise in food inflation seen due to go-
natives.

→ Steps taken ←

① Increase Reliance of Renewable Energy -
India's National Biofuel Policy, National
solar mission.

② "de-dollarisation" : to import cheap Russian
crude oil to escape west sanctions.

③ Promotion of 'electric vehicles' run on
hydrogen fuel - to reduce dependence.

→ Way forward ←

Promote R & D in renewables and green
hydrogen to reduce reliance on oil.

Overall Grading (✓)

Poor			Average			Good		
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Q.4)

Currently India's ~~re~~ renewable energy capacity is at 150 GW in which solar capacity is of 50 GW.

India being a tropical country is perfectly placed to use its ample ^{light} ~~sunrise~~ — to fund its energy need.

→ How does Solar Energy help? ←

① Renewable Energy source : and available in abundance leading to security of energy.

② No carbon emission : The use of solar panels has no carbon emission and hence help India attain target of Paris agreement.

③ Solar energy used for electricity, and household use — leads to non reliance on ~~cost~~ thermal power plants — leading to lower pollution.

→ The Government has taken steps :-

- ① PM-KUSUM - provide additional income to farmers by selling power to grid.
- ② International Solar Alliance : launched in COP-21 for solar rich countries to use solar energy.
- ③ National solar mission : encourage active participation of states in solar energy creation.

High cost of setting up panels

Falling short of roof top targets

Challenges

Target to produce 300 GW by 2030 - but growing at 10 GW/year

Lack of response from discoms - for supporting net metering

Develop battery storage for solar power

Way forward

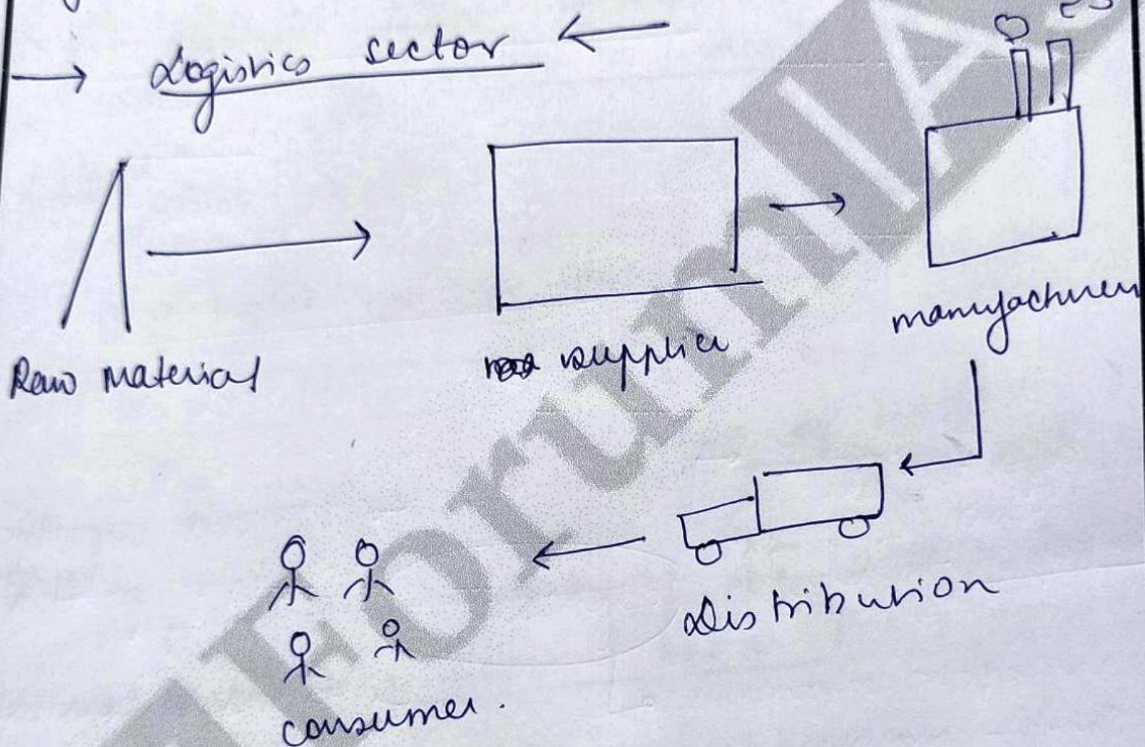
Give distribution companies turn around.

Identify areas where panels be set up + invest.

Overall Grading (✓)

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Q.5) logistic sector used in manufacturing industry to understand how goods move in the supply chain. With the rise in globalisation and global supply chains, logistics sector has grown of vital importance.



→ India's logistic sector ←

- ① Employs more than 22 million people
- ② The World Economic Forum ranked India 49th out of 137 countries - in infrastructure in ~~2017~~ 2022

→ Logistic sector : Economic Development ←

① Employment generator being the backbone of manufacturing industry.

(Eg) : 22 mill - 2016 (employed).

② Domestic Economy : Ensure success of schemes like "make in India" and "Atmanirbhar Bharat".

> Enhance cost efficiency of products and hence market domination of Indian goods.

③ External Economy : Enhance export efficiency and competitiveness of Indian goods.

> Help achieve target of \$5 trillion eco, and promote export & boon FOREX revenue.

④ Increase in ease of doing business and attract foreign investment through FDI and PII.

⑤ Boon Investment climate in the country and instigate - virtuous cycle.
more investment → more employment ↓
Economic growth ← more demand
virtuous cycle.

However, it has not attained its potential and faces constraints :-

- ① low investment and underdeveloped infrastructure lead to poor logistics.
- ② lack of coordination among four sectors — transport, warehousing, freight, for value addition — leads to low efficiency.

- ③ lack of multimodal connectivity — between modes of transport leads to rise in cost of goods & delay.

- ④ Benefit of public sector and underutilised capacity of private sector.

→ Government has taken steps to boost logistics — Sharat Mela, DFC for roads and rails. And the other challenges can be

mitigated — NITI Aayog suggests: allowing private sector in ports, enhance capacity of warehouse, create an overarching body — maintain all data — this has been followed by setting up logistics division in Ministry of Commerce.

Overall Grading (✓)

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Q.6)

Biofuels are any hydrocarbon fuels that are produced from organic matter - and may be in solid, liquid or gaseous form. Eg: solid - wood, manure; liquid - biomethanol, and biodiesel; gaseous: biogas.

• Bio-fuels are used as an alternative to fossil-fuels :-

- ① Easily Available - before ~~the~~ LPG gas made available at homes cooking mostly done by bio-fuels.
- ② Less expensive - They can be procured locally in farms and are cost effective.
- ③ Recycling of waste - manure, municipal waste, crop waste can be used instead of polluting environment.

However, they cannot be said to be green alternative to fossil fuels :-

① don't ensure each of carbon cuts and take up land resource.

• Bio-fuels can exist as - waste products like cow dung and straw being used for fuel, however the making of bio-fuel on limited land in a agricultural economy can lead to food insecurity of the nation, if land diverted. Farmers may be tempted to grow ~~over~~ bio-fuels over food to increase income to tackle low farmers income.

And the annuity of bio-fuels leading to low emission is not guaranteed.

There can be challenges to biodiversity and excessive pumping of groundwater and lead to further environment deterioration.

However, as bio-fuels enables strengthening India's energy security, Govt has taken measures :-

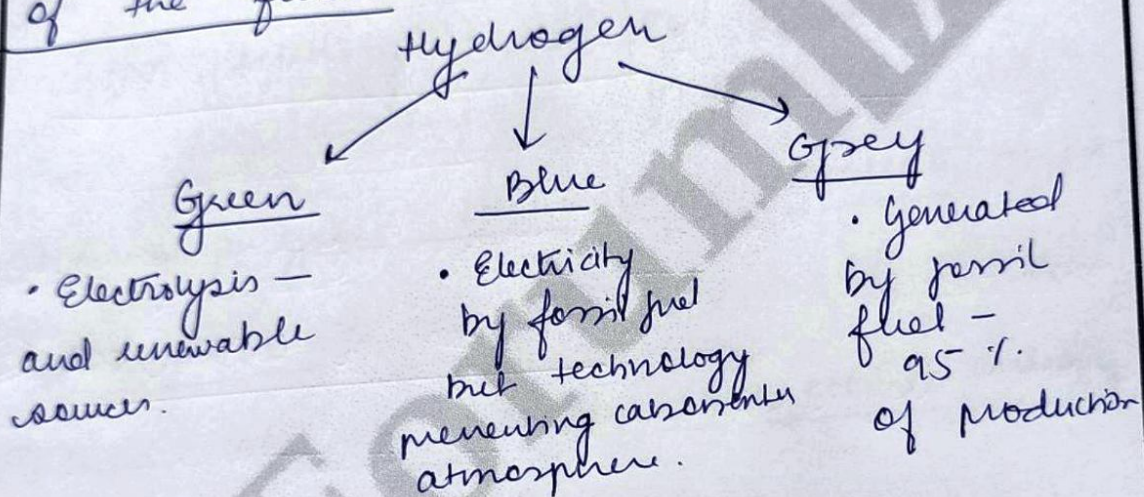
- ① National Biofuels policy : allows surplus production for being used in bio-diesel.
 - ↳ Encourages setting up supply chain for bio-fuels.
 - ② GOBAR DHAN scheme 2018 : convert cattle dung to compost, biogas & CNG, keeping villages clean.
 - ③ PM JIVAN Yojana, 2019 : create an ecosystem for setting up commercial R&D for ethanol sector.
- Biofuels have utility although not the ^{complete} solution to India's energy deficiencies & challenges, it helps in rural development and enhance farmers income - and community based programmes organised to enhance bio-fuel prodⁿ at rural.

Overall Grading (✓)

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Q7)

Hydrogen is the most abundant element found on earth. However, green hydrogen is a hydrogen formed by electrolysis of water using solar energy or other renewable energy, and in modern times gives out electricity and is hailed as the fuel of the future.



As green hydrogen has the least carbon footprint and lowest emission India has invested in its production and oil India limited commissioned India's 1st 99.99% pure green hydrogen plant in Assam's Jorhat.

→ What are the benefits? ←

① Help India attain its carbon emissions target as reducing it by 33% from 2005 level - Paris Agreement.

② Strengthen India's energy security and self-dependence.

③ Currently India's 86% of energy requirement is imported.

④ Develop green technology market - by 2030.

⑤ India stability not be subject to energy shocks due to geo-politics.

⑥ Renewable energy entirely volatile in supply - hydrogen can be stored for a longer time and hence stabilise supply.

→ Challenges ←

① The setting up of green hydrogen plant is expensive and capital intensive.

-and requires heavy investment.

① Fuel cell and carbon capture storage technologies at nascent stage.

③ Transportation is a challenge - can lead to combustion.

④ since renewable energy - con efficient -

→ Govt steps ←

① The Pure Hydrogen plant set up - Assam.

② Green Hydrogen Policy, 2022 : Addressed issues & given incentive to green hydrogen producers, & provided with grid connectivity.

③ Target of setting 5 mill tonne green hydrogen by 2030.

→ Way forward ←

① Scale up gas line pipeline infrastructure to boost production & supply.

② Focus on private players attraction in industry to attract investment, and government - focus on Research & development.

Overall Grading (✓)

Poor			Average			Good		
1	2	3	4	5	6	7	8	9