GS SCORE

An Institute for Civil Services

IAS TOPPER'S

TEST COPY

CHANDRAKANT BAGORIA

AIR - 75

(CSE 2022)

GEOGRAPHY OPTIONAL

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02 Sep.

71940

(1231)

GS SCORE

Geography Test Series 2022

TEST - 05

127

GEOGRAPHY

Time Allowed: 3 Hrs. *Max. Marks:* 250

SECTION - A

1. Comment on the following into 150 words:

(a) Locate these map entries on the map and write about 30 words: (20 Marks)

1. Varuna River
2. Sind River
3. Rengma Hills
4. Mawlynnong
5. Murud Beach
6. Trikuta Hills
7. Lakshadweep
8. Eaglenest Wild Life Sanctuary
9. Nakki lake
10. Idukki Dam

(b) Write a short note on winter rainfall in India and also write its significance to Agriculture. (10 Marks)

(c) Write a short note on climatological characteristics of Marathwada region. (10 Marks)

(d) Briefly explain the importance of Inter-linking of Rivers in India. Also, examine the problems and prospects of the Ken-Betwa river link project. (10 Marks)

2. (a) In last few years intensity and frequency of floods have increased. In this backdrop identify the regions which are subjected to witness repeated flooding and also identify the main reasons and possible solutions. (20 Marks)

(b) In India there are many caves and caverns found in different areas. What were the conditions under which these caves formed and can these caves be included in classic Karst topography? Discuss. (15 Marks)

(c) What is the genesis of the Cauvery interstate river water dispute? What are the prospects of a national water grid in addressing the issue? (15 Marks)

3. (a) The Dam Safety Rehabilitation and Improvement Project (DRIP) will pave the way towards dam safety and management which is critical for surrounding areas and downstream communities. Discuss. (20 Marks)

(b) India is going through an energy crisis phase and we need a sustainable strategy to achieve the twin objectives of energy security and environmental security. Comment. (15 Marks)

(c) Discuss the Origin and mechanism of the Indian Monsoon in the light of recent theories. (15 Marks)

4. (a) Discuss the Orogenesis of Himalayan Mountain ranges on the basis of plate tectonics. Elaborate with geographical evidence supporting collision of different types and nature of tectonic plates during process of orogeny. (20 Marks)

(b) Discuss the effects of relief and climate on the distribution of natural vegetation in India. (15 Marks)

(c) Differentiate between Dharwad and Cuddapah rock system in India. Discuss its significance in the economic development of India. (15 Marks)

SECTION - B

5. Comment on the following into 150 words:

(a) Write a short note on Blue revolution in India. Also write its prospect and challenges. (10 Marks)

(b) Write a short note on Zero Budget Natural Farming. (10 Marks)

(c) The growing pattern of ecological footprint is uneven in nature .Analyze with respect to land resources in India. (10 Marks)

(d) What are the main causes of ground water depletion in India? (10 Marks)

(e) Write a short note on West flowing rivers of our Country. (10 Marks)

6. (a) "The fertile soils, perennial rivers and favorable climate, the great plains of north India are of immense economic and social significance". Elaborate. Also, discuss despite huge economic potential the entire Gangetic plain mainly in Uttar Pradesh and Bihar are marred by poverty. (20 Marks)

(b) What are the different Soil types of India? Briefly write the important characteristics and distribution of Major Soils. (15 Marks)

(c) Give a geographical account of Coal resources of India in terms of its reserve and utilisation. (15 Marks)

7. (a) "India can utilize the vast natural resources of Himalayan region in the form of minerals, herbs, shrubs and tourism to boost its economy". Critically analyze with reference to economic opportunities and sustainable utilization of resources of the fragile Northern Mountain Complex. (20 Marks)

(b) Geological, geophysical and inherited tectonic factors imprint on the climate and contrasting geomorphology of the Indian peninsula. Explain. (15 Marks)

(c) Discuss the ecological significance of increasing desertification in India and suggest measures to control it. (15 Marks)

8. (a) Examine the need of interlinking of Himalayan and peninsular rivers. Critically analyze the challenges of interlinking Himalayan and peninsular drainage systems. Discuss with reference to different river-interlinking projects. (20 Marks)

(b) Discuss the main causes and consequences of soil erosion occurring over extensive parts of our country. Suggest some viable measures to solve this menace. (15 Marks)

(c) Discuss the rising problem of air pollution in Delhi NCR also write about the initiatives taken by central and state governments to curb the menace. (15 Marks)

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Roll No. 71940

GS SCORE

Section - A

1. (a) Locate these map entries on the map and write about 30 words: (150 Words) (10)

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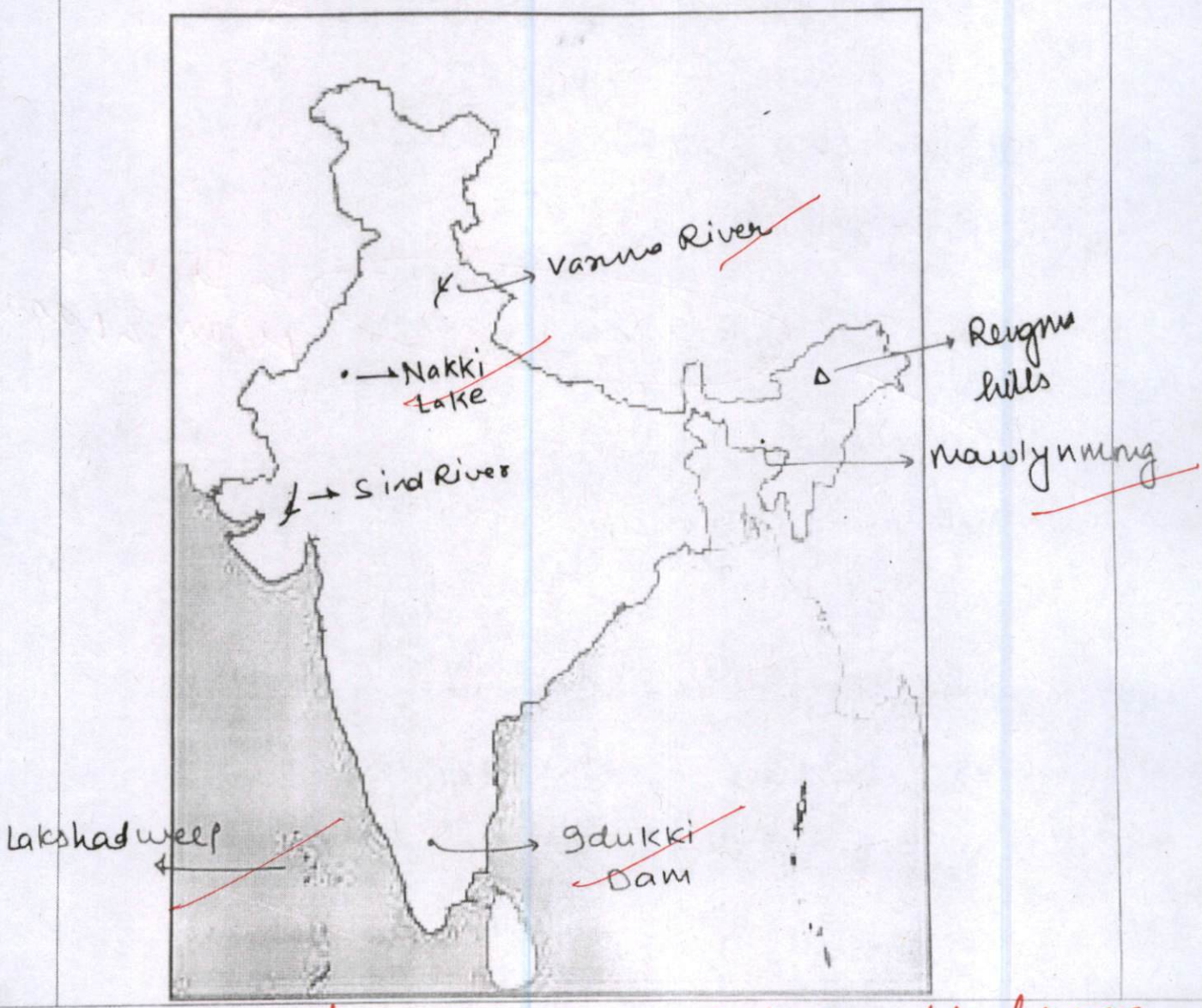


Remarks * Sind river of Thelum is being asked here & not of sindh of Peninsular region is being asked here.

9

(1). Yamuna River - It flows in middle Himalaya range. It flows nearby Dehradun in Uttarkhand.

- It is famous for changing its course.

(2). Sind River

- flows in the state of Gujarat
- It is a west flowing river.
- It has low water potential [small basin].

(3). Rengma hills

- They are in Arunachal Pradesh → It is in Assam & Nagaland
- Inhabited by Tribes.
- Rich in Biodiversity, part of Eastern Ghat Biological hotspot.
- Nearby Mikir and Mishmi Hills.

(4) Mawlynnog - it is located in Meghalaya.

↳ It has an airport, which is Meghalaya's

Remarks

1st lying nearby it.

- The adjoing area is famous for various caves.

7. Lakshadweep → It is group of 36 island located in Arabian Sea.

- It is also a union Territory.
- Coral island
- Famous tourist place with many beaches
- Famous for coconut farming.

9. Nakki Lake

- It is a salt lake located in ~~Maharashtra~~ Rajasthan.
- It is having high level of pollution.

10. Idukki Dam-

- ~~It is to~~ It is located in Kerala.
- Dam is built on Periyar river.
- Mismanagement of Idukki dam was also

Remarks

responsible for Kerala flood, in 2019.

* mention more on the climatic, vegetational, biodiversity & tribal diversity of these regions.

Remarks

1. (b) Write a short note on winter rainfall in India and also write its significance to Agriculture. (150 Words) (10)

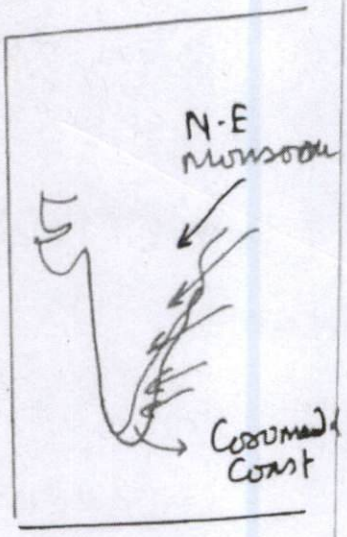
In India the winter time rainfall extends from the month of october upto February or march.

Winter-rainfall

1):. North-east monsoon:-

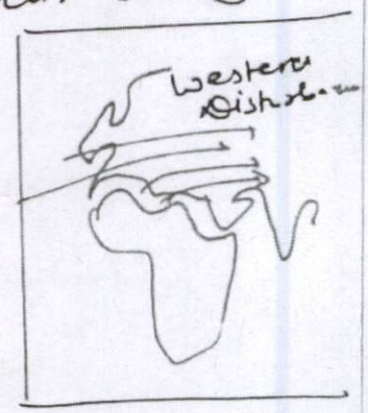
It brings rainfall during October to January. By around 20th January North-east ~~rainf~~ monsoon retreats.

↳ Around 10-15% of rainfall occur through winter monsoon.



2):- Western Disturbances

- Extra-tropical cyclones,
- shed moisture taken from Mediterranean Sea or Atlantic ocean.
- Active during december to April.



3):. Rainfall due to Tropical cyclones in Bay of Bengal and Arabian Sea :- During October-NOV.

Remarks × Could have given more facts on the amount of rainfall they contribute to total rainfall & various regions benefited by them.

• They cause rainfall along odisha coast & other areas

5.5

Significance on agriculture

a). western disturbance help in ripening of Rabi crops.

↳ mild rainfall is necessary for wheat.

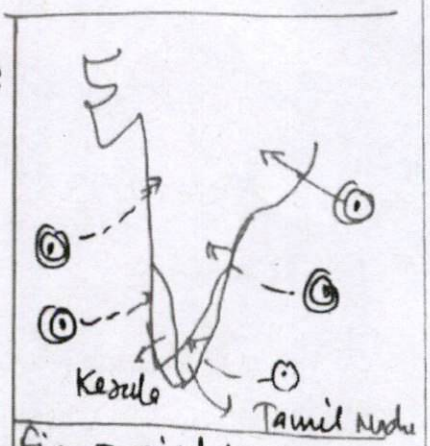


Fig - Tropical cyclones

b):. Tropical cyclone led rainfall cause adverse impacts on agriculture.

(c). Essential water for irrigation is availed

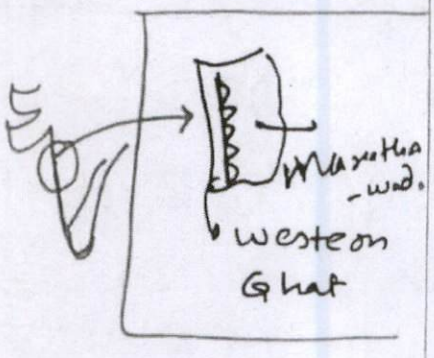
e.g. 60% of India's agriculture is rainfed.

Thus winter rainfall is distinct in characteristics compared to summer rainfall.

1. (c) Write a short note on climatological characteristics of Marathwada region. (150 Words) (10)

Marathwada region falls in the rainshadow area of western Ghat.

Climatological Characteristics



a): Climate - Semi-arid, high evaporation and low precipitation.

b): - Precipitation - 50-75 cm. [falls in the rainshadow zone, Branch of South-west monsoon sheds its moisture in western ghat, leaving very less for Marathwada.

c): Temperature - 27-30°c, in summer reach till 40°c. Sometime heat-wave like condition occur.

d): wind speed - low, as it falls in rainsadow area.

e) cloud cover is moderate. [Maharashtra government decided to go for cloud seeding

Remarks * Add the role of continentality & leeward side effect on these regions.

to get rainfall for Marathwada and vidharbha region.

f) Agro-climatic conditions are suitable for millets.

3.5

Problems of Marathwada region caused by climate

a): Backward region
↳ Low rainfall, water scarcity

b):- cropping of water intensive crops like sugarcane and rice has further aggravated the situation.

c):- Lack of technology and governance has further affected it.

Marathwada, needs to be developed along with the components of Drought prone area program and watershed management principles.

fair conclusion

* mention how various agricultural practices have made the region vulnerable & made them the region of farmers suicide capital of the world.

Remarks

1. (d) Briefly explain the importance of Inter-linking of Rivers in India. Also, examine the problems and prospects of the Ken-Betwa river link project. (150 Words) (10)

In India various region face the problem of drought while others face problem of flood. This paradoxical situation can be addressed through interlinking of rivers.

Importance of Interlinking of rivers

a): According to NCAE, report it will promote :-

- ✓ A Irrigation facilities
- ✓ Drinking water facilities
- ✓ Gainful employment

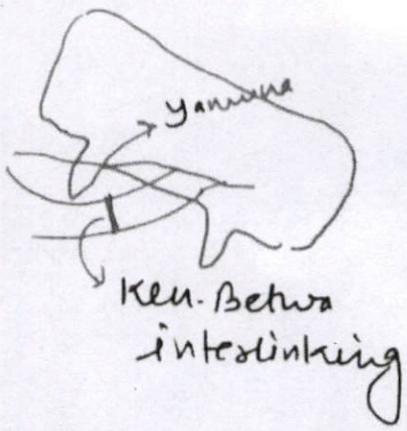
(b) Lead to infrastructure development in under developed areas.

(c). Hinterland connectivity and multi-modal connectivity will be promoted.

(d). Water transport as a cheaper and ecological mode of transport will be developed

Remarks * Use diagram to show various prospective regions planned to be benefited by these Interlinkage or components of river being Interlinked

prospects of Ken-betwa interlinking



a) Water for drought prone Bundelkhand region.

b) will help in Bridging disparity in Bundelkhand v/s other parts.

c):- provide drinking water and irrigation facilition along with employment.

problem

a) passes through Panna National park.

b) A major chunk of national park will be submerged → causing biodiversity loss.

c). protest from local NGOs.

d) Rehabilitation of local people.

Sustainable model of interlinking of rivers should be promoted to reap the benefits

5

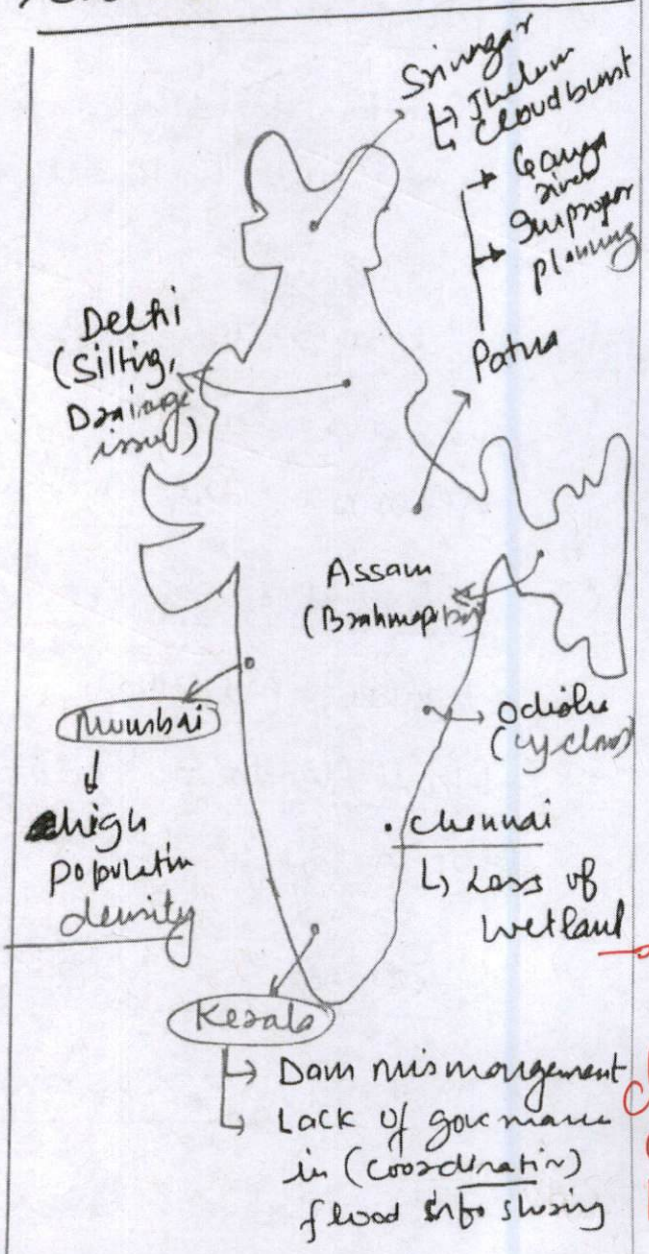
Remarks

2. (a) In last few years intensity and frequency of floods have increased. In this backdrop identify the regions which are subjected to witness repeated flooding and also identify the main reasons and possible solutions. (250 Words) (20)

Floods occurs when water exceeds from normal river channel and encroaches in mainland.

Increasing incidences of flooding

- ✓ urban flooding has seen frequent occurences
- ✓ Flash floods → water encroachment with in certain hours have increased.
- ✓ Patna, Assam have seen floods almost every year.
- ✓ mitigation efforts are not working, in case of increase in intensity of floods



→ good thematic diagram shown here.

Remarks

* could improve your mapping skills.

Some of the regions subjected to frequent flooding

a): Patna and Eastern Bihar

Flood is visible every year and with increasing intensity.

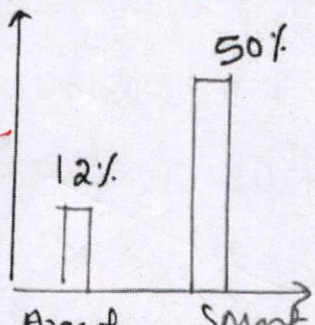
13

b): Assam valley → Brahmaputra and its tributaries during monsoon are overflooded.

c): Urban flooding in Delhi, Chennai, Mumbai.

d): Flash floods - Kedarnath floods (2013), due to cloudbursts

Around 40% area of Bihar is annually affected by floods



Reasons for floods

a): Meteorological reasons

→ Tropical cyclones

→ Excessive precipitation

→ Cloud Bursts

Could have shown various regions impacted by these events.

Remarks

b): Physical reasons →

↳ Rivers are changing their course

e.g. Earlier Teesta used to join Ganga, now it joins Brahmaputra in Bangladesh.

↳ Tectonic Works.

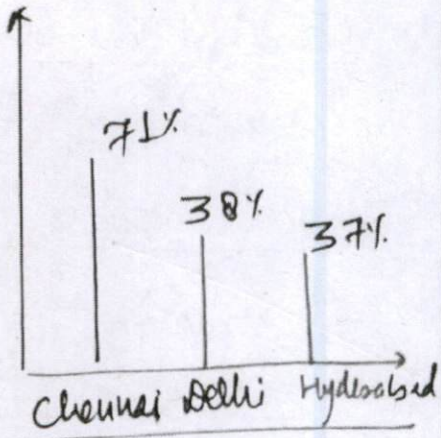


Fig: Urban wetland lost since 1970

c): Anthropogenic Reasons →

✓ Improper Urban planning = Master plans are severely lacking the strategy to tackle floods.

✓ De-silting of drains is not done in timely manner.

✓ Inactiveness of municipal bodies.

✓ Loss of urban wetland - which worked as water absorber.

Solution

A. Sponge city model of China - creation of

fair Innovati vi - Ideas mentioned

Remarks

artificial wetlands and structures to absorb water.

B. Flood zone planning - construction of artificial levees.

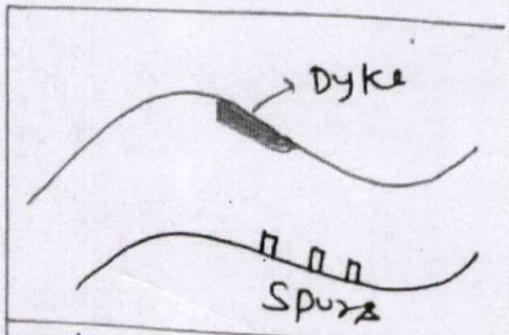


Fig → Dykes & spur to check flood

C. Ganga and Brahmaputra flood board should timely conduct meetings.

d. Enclosures and dams in sea areas

e.g. North European Enclosure dam and Sea Walls, Water squares.

(e) Following the NDMA guidelines on flood and both structural and non-structural measures should be implemented.

(f) Rainwater harvesting, Rain gardens in cities.

Along with Green infrastructure, focus should also be on developing Blue infrastructure.

Remarks * You have written fair, well structured, answer with all the diagrams, examples, facts in it.

2. (b) In India there are many caves and caverns found in different areas. What were the conditions under which these caves formed and can these caves be included in classic Karst topography? Discuss. (200 Words) (15)

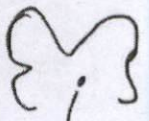
In India diverse topographical expressions in forms of caves and caverns are found, due to different climatic conditions owing to climatic diversity of India.

Caves and Caverns in different areas

7.5

a):- Jammu and Kashmir - famous Amarnath Caves.

Formed in Pir Panjal range of himalaya.



Amarnath Cave

b):- Uttarakhand → many religious caves e.g. Patal Bhuvaneshwar along with it nearby Dehradun, many limestone caves are also found, due to underlying karst topography.

Limestone caves nearby Jurassic

Patal Bhuvaneshwar (Uttarakhand)

Remarks

(c) Jharkhand → many caves and Cavers are found.

(d). Meghalaya = Karst topography is well developed here.

↳ series of Stalagmite and Stalactites are found

↳ Case study → The depiction of Meghalayan age (a time span after 4200 BC), is based on the analysis of Karst caves from the Meghalaya region.

Conditions for formation of Caves

a) In himalayan region most of the caves are formed by tectonic displacement.

b):- The destabilised plates and rocks gave the shape to caves.

c):- Some of them are based on karst topography.

Remarks

Conditions for Karst Topography

a). High precipitation and abundant water availability

b): Underground streams.

c). Permeable rocks, sedimentary formation.

d) Thickly bedded and jointed rocks.

e) Limestone Topography

Caves in Himalaya, Meghalaya and Jharkhand fulfil the karst citeria, though some of them like in J&K are due to tectonic activity.

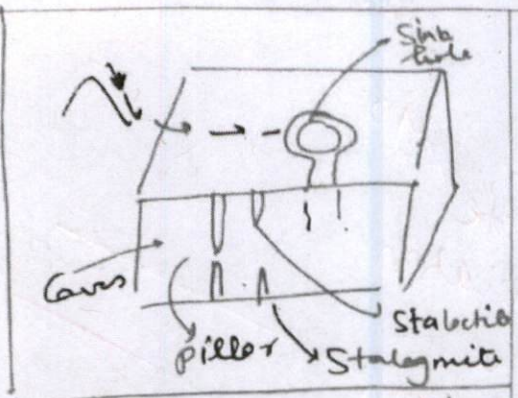


Fig:- Karst Topography

a would have mentioned various socio-economic & socio-cultural Importance of these caves for man kind.

Remarks

2. (c) What is the genesis of the Cauvery interstate river water dispute? What are the prospects of a national water grid in addressing the issue? (200 Words) (15)

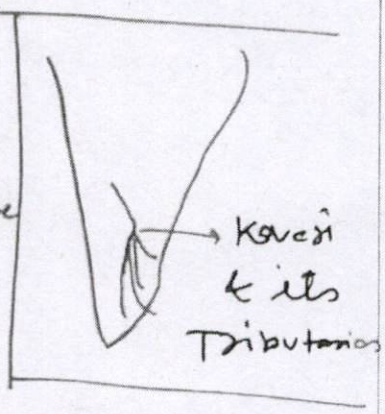
Good, fair accurate articulation in the Introduction

Cauvery Interstate water dispute is based on dispute over a pre-independence agreement between state of Mysore and Tamil Nadu.

It is a dispute between Karnataka, Kerala, Tamil Nadu and Puducherry.

8

Cauvery interstate dispute



a).- The construction of dam on Cauvery ~~[illegible]~~ have limited the prospects of agriculture farmers in lower side (e.g. in Tamil Nadu they practise rice cultivation.

b).- Drinking water availability to Bengaluru is ensured through Cauvery (e.g.) Mekadatu project is being constructed.

Remarks → here try to add various recent issues of how rising population, climate change have influenced recent dimensions for these disputes.

(c). prior Appportionment principle - historical reuse is being challenged, which was based on a 1524 agreement

(d). Helsinki principle of equitable distribution of water is long being followed.

(e). Judgement of water tribunal is yet to be implemented.

prospects of National Water grid

a): It will ensure water availability throughout

b):- Irrigation and other needs will be fulfilled.

c). will be helpful in checking disaster like flood and droughts.

d): Lead to growth and development

challenges

a). Water is a state list subject.

Remarks

b). Inter - state coordination will be big issue

c): Trans-national nature of rivers
e.g. India and Bangladesh share 54 rivers, water grid construction will pose serious challenge.

d): protest from locals, for land issues and tribal displacement due to construction of grid.

e): - Huge economic cost.

We need to bring water into "concurrent list", as recommended by Mihir Shah Committee. Gradually. With technological efficiency, concept of water Grid in form of river interlinking can be realised.

fair conversation rivers here, but could have also added how water harvesting mechanism & revival of old tanks in the regions like Kere is the way forward.

Remarks

3. (a) The Dam Safety Rehabilitation and Improvement Project (DRIP) will pave the way towards dam safety and management which is critical for surrounding areas and downstream communities. Discuss. (250 Words) (20)

DRIP project aims to manage the big dams (e.g height greater than 15 meter and 10-15 meter in certain cases.

11

Dam safety and management

- Dam safety is serious concern. earlier Tiware Dam mishap caused the loss of more than 25 people.
- Koyana dam bajedy had serious implication.
- Mismanagement of dams have caused floods like Chennai and Kerala.
- Inter-state management and coordination is severely lacking (e.g) in context to release of water, issuing of Red flags etc

Remarks

could have used diagrams to show location of various of these big dams which have different problems.

DRIP Project

a):- Dam safety authority ⇒ National Dam Safety organisation at National level will check the working of dam at National level.

b):- National Dam Safety Committee - will take executive decision at national level

c):- State Dam Safety organisation ⇒ for dams with in the state. State dam safety committee, will undertake inspection and necessary measures for dams, especially which are more than 100 years old.

Case study

↳ Constructed on Bhagirathi & Bhilanganga river

↳ provides water to more than 10 states

↳ Located in sensitive zone V of Earthquake

Remarks

* could have added how the recent amendments to the Dam safety bill is a step in right direction & how it helps in addressing various issues.

d) More than 100 year old dam will have special attention.

e): Multi-state dams will be taken care by National level body.

f): DRIP project will also suggest for various structural measures to minimise any exigency

Challenges in DRIP project

a): Inter-state Coordination will be serious issue.

b): Low deployment of technology also hampers efficiency of dam management

e.g. India can take the example of Hoover dam of USA for effective management.

c):- Due to ineffective management Aswan Dam in Egypt has caused

Remarks * try to add more dimensions on the Rehabilitation aspect of the answer.

serious waterlogging problems and has become environmental concerns. Thus, we should also learn from these projects.

Effective dam management will realise the objectives of our great leaders (e.g. Dams as the temple of modern India.

Remarks

3. (b) India is going through an energy crisis phase and we need a sustainable strategy to achieve the twin objectives of energy security and environmental security. Comment. (200 Words) (15)

Energy crisis in context to India is analogous with a coal crisis (currently), globally it is more related with "Oil crisis", of 1973, when there was a sharp rise in prices.

Energy crisis

a):- Availability of Energy ⇒

- During Covid coal crisis occured in India → Electricity shortage
- Due to supply chain issues, the import of coaking coal was restricted.
- India is dependent on oil and Gas of foreign origin.

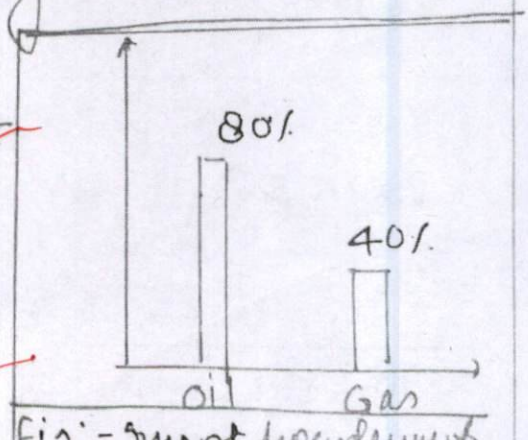


Fig:- Import dependency of India

b): Affordability

- Due to Russia-Ukrain war

Remarks

* mention various regional trends in the amount of energy crisis impacting various places in India.

the oil prices have soared high.

- high oil prices increase the current account deficit of India.

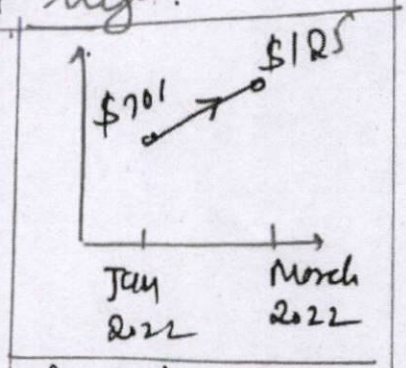


Fig > oil prices per Barrel

- Fuel inflation is on rise, making Petrol & diesel costly. Prices of CNG has also increased.

Reliability → It was severely hampered during coal crisis.

✓ depending on one source of energy severely restricts our potential.

Sustainable Strategy

Energy Security	Environmental Security
• According to world Bank India need to increase energy consumption 4-fold, to reach .8 (high HDI) Category.	• Panchamrit Target ↳ 2070 → Carbon Neutral target ↳ India will have to cut coal production by 99% to achieve this from current level

Remarks

- Only are 70-80% houses have easy, accessible energy. (100% Rural Electrification but avg. electricity time is around 12 hours).
- Energy for Industries and Businesses.
- Digital India needs energy security.
- To ensure sustainability (intra-generational (b/w rich & poor) & inter generational)
- Decarbonising Transport & Emission Reduction.

9

Way forward

a):- Energy diversification in form of various form of renewable energy

Wind	40GW
Solar	48GW
Hydro	46GW
Total Renewable Energy (2021)	151GW

b):- focus more on local solution for energy (e.g. micro hydel plants (less than 200kW))

(c) Focus on Resource efficiency and promotion of circular economy

Remarks

a you have written a fair answer with good structure, data, examples & graphs.

3. (c) Discuss the Origin and mechanism of the Indian Monsoon in the light of recent theories. (200 Words) (15)

Monsoon refers to seasonal reversal of winds.

Origin of monsoon

a):- El-Masudi and arabian geographers, considered monsoon as giant sea winds.

b): Classical theory of Hailey > It considers monsoon originating due to heating of land surface. Considered monsoon as land and sea breeze at larger scale.

c): Dynamic Theory by Flohn → monsoon originate due to westerlies (equatorial), taking a south-west course, due to thermal heating.

d): Thermal concept of M.T Yin - monsoon originate due to heating of peninsula and thermal low is created. which drives South-costal trade winds and they are converted into South-west monsoon.

e): Jet Stream theory by Koteshwaram - monsoon

Remarks → Use diagrams to explain most of these concepts.

is influenced by the arrival of Tropical easterly jet stream. Tropical easterly jet, guides the ITCZ.

f) MONEX Expedition → It put multiple factors for origin of monsoon

1) Heating of Tibetan Plateau
2) High pressure zone at South-West Australia
3) Shifting of ITCZ
4) Low pressure trough over Indian Peninsula.

g):- Latest understanding :- IMD takes, various factors like temperature & pressure condition in Antarctica, Atlantic ocean, Arctic, Siberia to predict monsoon, suggesting that these also have caus. effect relationship with monsoon

h) Other modifying factors - El-Nino, La Nina, Indian ocean dipole, Madden-Julian Oscillation

Mechanism of South west monsoon

a): ~~Onset~~ Burst → Around 31st May in A&N island.

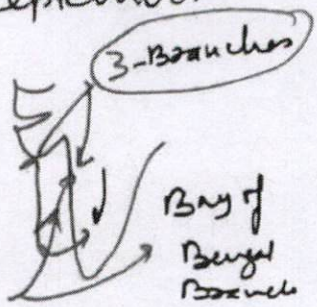
Remarks

b): - Onset - It is gradual process, compared to burst, which is sudden. By the end of June, it reaches North India.

c): - Dry spells

d). Retreat of monsoon - during September generally.

(e). October heat.



North East Monsoon

7

a) Sets during 20th October. These days there is confusion between arrival of N-E Monsoon & retreat of South-west because South-west Monsoon retreat has delayed to 20th October (2013) and expected to continue

b): North-east trades are active

c): Rainfall over Coromandel coast

d): Retreat by 20th January

Thus, Indian monsoon is affected by multitude of factors

* Also account for various Teleconnections

Remarks in your answer & how they impact Indian monsoon

Section - B

5. (a) Write a short note on Blue revolution in India. Also write its prospect and challenges. (150 Words) (10)

Blue revolution refers to increase in fish production.

Phase 1 → 1975-1985 → Fish farming agency

Phase 2 - 1985-1995 → Marine fish farming agency

Phase 3 → 1995 onwards - promotion of deep sea fishing.

Prospect

1. Demand is increasing
2. Government policies like Matsya Sampada Yojana supporting fisheries
3. Technology is being promoted
4. Initiatives like Marine Fisheries Policy and Neel Kranti (fisherman welfare) are being promoted
5. Large coastline of India

* Add role of Demography, Nutritional security & Income security there provide as one such prospect.

5

Remarks

* use diagram to show various prospective regions where Blue revolution can be envisaged.

~~a~~ Fish varieties - Bombay Duck, pomphret, Indian Salmon, etc
Rohu, Katla

Challenges

a) Low development of deep sea fishing

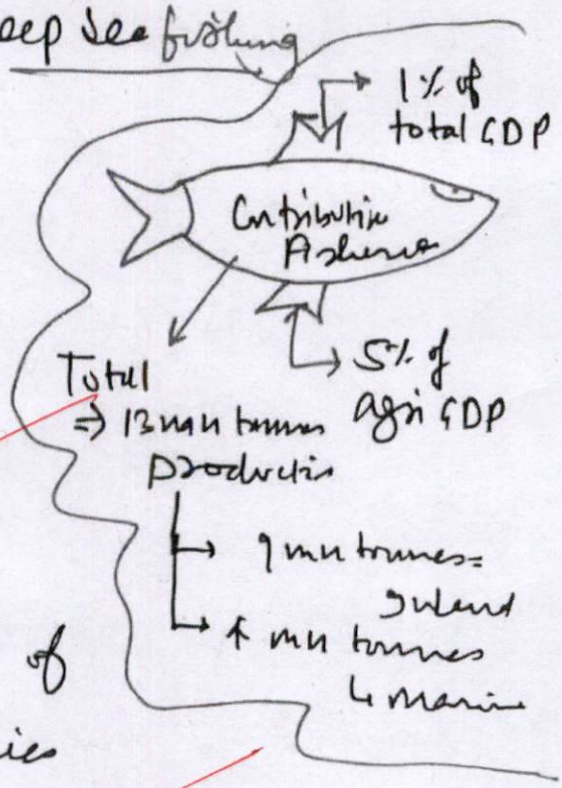
b): Different fish varieties and also poisonous ⇒ segregation is difficult

c) Sanitary to phytosanitary challenges

d) Low and obsolete use of technology in fisheries

e) Competition from other countries

e.g. Kutchatheevu island issue



→ try to come with some interesting conversion here.

Remarks

5. (b) Write a short note on Zero Budget Natural Farming. (150 Words) (10)

Zero Budget Natural farming a sustainable method of agriculture, also part of Permaculture (permanent agriculture, which can be continued permanently without any adverse effects on environment)

Idea given by Subhash Paleker, also promoted by Budget 2020-21.

Components

1. Jivamitra
2. Bijamitra
3. Vapasha
4. Soil mulching

Explain most of these components & what they mean.

It is also known as zero cost farming. As input cost is low.

Remarks

Core Study In Anantapur district of Andhra Pradesh, ZBNF increased the productivity of wheat by 134%.

[Prospects]

→ will help in doubling farmer income

→ ~~low use of~~ fertilizer and pesticides not used, thus Sustainable agriculture

ICAR has raised concern, it may reduce productivity (yield).

It is a form of Climate resilient agriculture, which should be promoted

4

Remarks

5. (c) The growing pattern of ecological footprint is uneven in nature. Analyze with respect to land resources in India. (150 Words) (10)

Utilisation of land resources have consistently changed.

4

Land use change

a):- Forest area under dense cover has not improved in certain areas like North east declining.

b):- Area under cultivation → used, thus more stress on land

c):- Pastureland have reduced → fodder crisis occured in 2020-21 in India

d):- Fallow land and other areas are decreasing.

e):- Wasteland in India is high

Remarks

* use diagrams to show various ecological footprint across space.

(17% of Indian land is wasteland)

According to MoEFCC around 33% of Indian land is under influence of desertification, it should be checked.

Remarks

5. (d) What are the main causes of ground water depletion in India? (150 Words) (10)

Ground water depletion both in terms of quality and ground water level change is occuring.

3.5

Water quality	Water ~~pollution~~ Table
• Excessive over use and No treatment of water.	• Excessive use by agriculture and industry
• Leaching of heavy metals through untreated solid waste	• No water pricing policy
• River pollution → dumping → ground water seepage	• Growing water intensive crops
	• ~~Groun~~ ~~Ds~~

Remarks

Need to have a Sustainable water policy based on the recommendation of Mihir Shah Committee

fair conclusion here

* use diagram to show various zones where water depletion has been the main cause of concerns.

Remarks

5. (e) Write a short note on West flowing rivers of our Country. (150 Words) (10)

West flowing rivers in India are:-

a):- Narmada. originates from Amarkantak

b):- Tapi → It flows parallely to Narmada and falls in Arabian Sea.

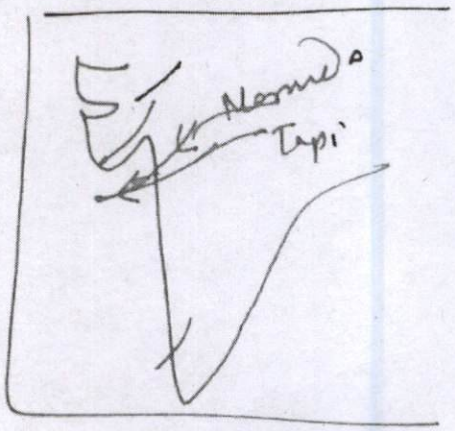
3

c):- Mahi

d) Sabarmati

mention some things here.

e):- Periyar → It flows in arabian Sea. It originates from western Ghat.



Most of the west flowing river originate from the western Ghat

Remarks

* write various drainage patterns, characteristics of these rivers.

and take their course westward.

Remarks

6. (a) "The fertile soils, perennial rivers and favorable climate, the great plains of north India are of immense economic and social significance". Elaborate. Also, discuss despite huge economic potential the entire Gangetic plain mainly in Uttar Pradesh and Bihar are marred by poverty. (250 Words) (20)

fair Introduction given here

Gangetic Plains or plains of northern India are termed as cradle of civilisation, due to immense fertility and contribution in development of civilisation, through suitable climatic and physiographic conditions

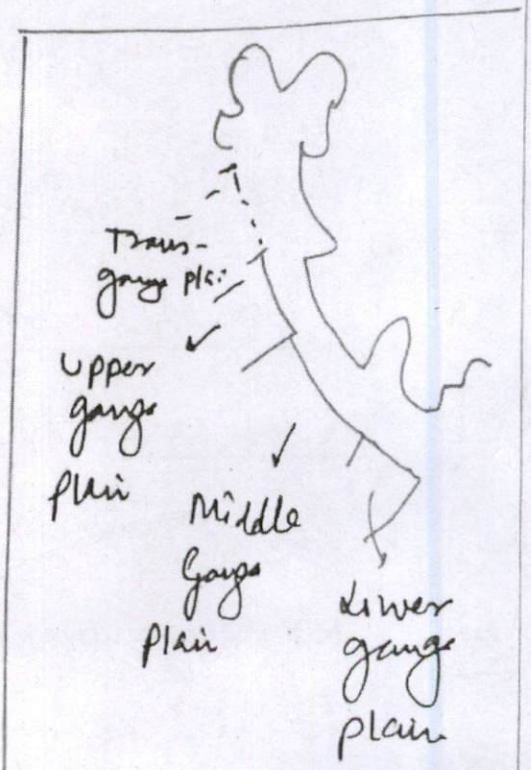
12

Economic Significance of North plains

a): High fertility

↳ Green Revolution zone - rich in production of rice, wheat, sugarcane

↳ higher yield of crops compared to other areas



Remarks

• In Punjab and Haryana ~~the~~ yield is around 4300 kg/hectare.

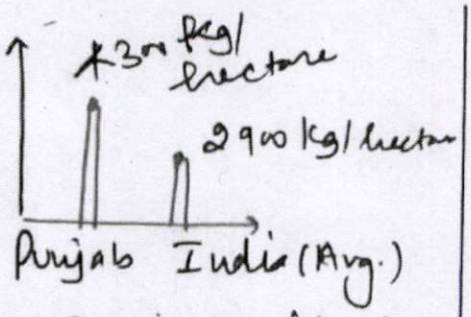


Fig - ~~Average~~ yield of Wheat (2020)

Brahmaputra plains

(b). Trans-ganga plain region has high per-capita income.

(c). Major industries including automobile and food processing (Pepsico) are located here.

(d). Headquarters of big MNCs are located.

Social significance

fair mention

a):. Cultural hearth → origin of Hinduism, Buddhism, Jainism and Sikhism.

b):. ~~pp~~ Good educational and health facilities (e.g.) multi-speciality and

Remarks

* Also write how it has helped in development of settlement patterns, Infrastructural development etc.,.

Super-speciality hospitals, IITs, AIMS etc.

c):- Skilled labour force - can fluently speak English.

d): Literacy rates are high in central area of the plain (e.g.) Delhi.

e):- Better condition of women (e.g.) more employment opportunities.

UP and Bihar marred by poverty

a): Disasters → Eastern UP and Bihar are frequently affected by floods.

- Bundelkhand region suffers from drought

b):- Low investment on infrastructure and more focus on populist policies like loan

waiver.

c): Governance issues - Vote bank politics and frequent coaliation government did not fulfil larger interest of society.

d):- Core - periphery model also explains it ⇒ best of the human resources, capital migrated to nearest ~~Multi~~ metropolitans leaving region backward.

Good Interlinkage of concepts.

Integrated regional development with special attention on infrastructure

e.g. current UP government's push towards Bundelkhand Expressway and Purvanchal expressway are in right direction

fair connection given here

* mention how UP & Bihar struggling in shadow zone of two big cities of Delhi & Calcutta has lead to their non-development.

Remarks

6. (b) What are the different Soil types of India? Briefly write the important characteristics and distribution of Major Soils. (200 Words) (15)

India has rich soil diversity.

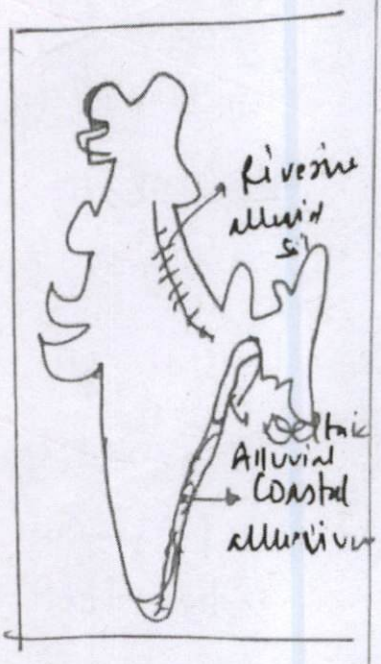
India has following soils:-

a): Alluvial soil → Around 47% of total area is covered by alluvial soil;

It can be further categorised into:-

1): Coastal alluvial soil

↳ nearby the coastal areas like Malabar coast, coromandel coast.



2. Deltaic Alluvial Soil →

In Krishna Godavari delta, Sunderban delta

3. Riverine alluvial soil - nearby rivers

(b) Laterite Soil → found in arid and semi-arid areas. Product of leaching.

Remarks

- With use of fertilisers, Coffee, Tea, Coconut plantation can be done

Fig → Laterite Soil

(b). Black Soil → Soil found in Gujarat plains and deccan Plateau region

↳ Fertile soil for cotton production

↳ High water retention capacity.

↳ Also various minerals are found

(c). Red Soil

↳ Red soil is due to ferric oxide.

↳ found in the southern part of plateau.

↳ Nutrient deficient

↳ Anhydrous form → yellow soil.

(e). Arid Soil - Found in desert region

→ Low biotic potential.

→ High capilary effect.

7

Remarks

(f). Saline / Alkaline Soil → pH greater than 8

↳ Saline soil can be treated.

↳ high alkalinity is difficult to treat

(g). Mountaneous Soil

↳ Forest soil ⇒ they have low humus content and fertility is low.

(h). peat / Bog → Found in the waterlogged areas.

Soils are major source of minerals and also utilised for various medicinal and day to day use.

* mention various socio-economic significance of these soils & also elaborate various threats being faced by these soils.

Remarks

6. (c) Give a geographical account of Coal resources of India in terms of its reserve and utilisation. (200 Words) (15)

In India 96% coal belongs to Gondwana period and rest of the coal belongs to Testiary period.

Geographical Account → Gondawanland
→ tertiary coal reserves.

Reserves

7.5

a): Damodar Valley Coal field ⇒ Coalfields like Jharia, Raniganj are located

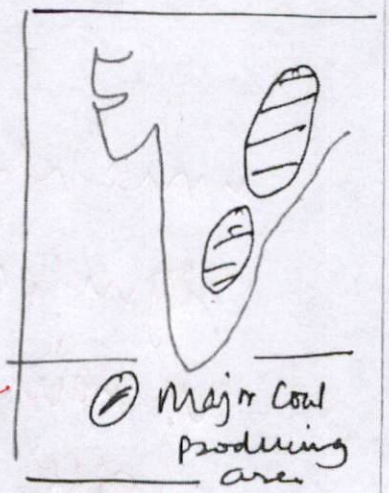
(b) Mahandi Valley Coalfield

(c) Godavari valley Coalfields

(d) Narmada valley Coalfields

(g) Wardha valley coalfields

(h) Kaveri valley Coalfields



Testiary coal

↳ In Meghalaya, Arunachal Pradesh & Assam

Remarks

Coal reserves

- Most of the coal is found in Chhotanagpur belt. [70% of Indian coal].

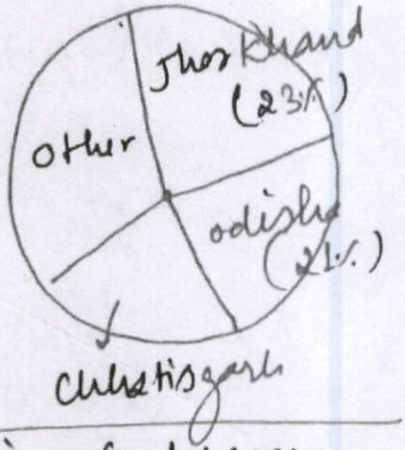
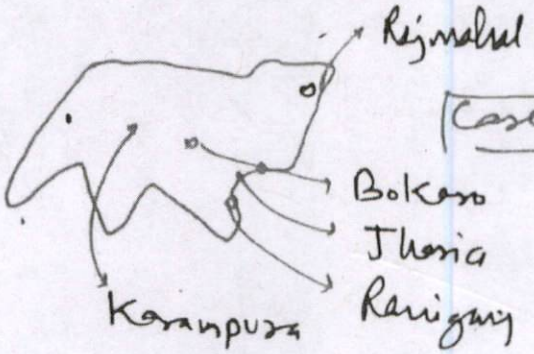


Fig → Coal reserves



Case Study of Jharkhand

↳ It has major coalfields and coal is utilised in powerplants and iron & steel industry

Utilisation

a) Industry => Iron & Steel and other industries

b):- Commercial utilisation

c):- power production - currently (2021), around 52% of India's power is

Remarks

being produced from coal

d):- Railways- 100% Electrification of railway project aims to move from coal to other cleaner sources [2030 target of Railways of becoming climate neutral]

Coal is important source of energy and current coal crisis also shows its importance.

In context to becoming climate neutral by 2070, India will have to phase out 99% of its coal by 2060, which will be a challenge

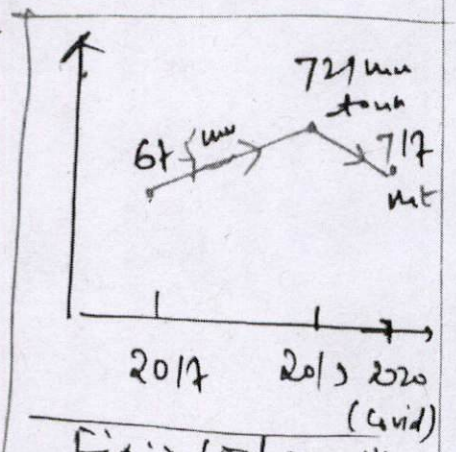


Fig:- Coal prodn in India

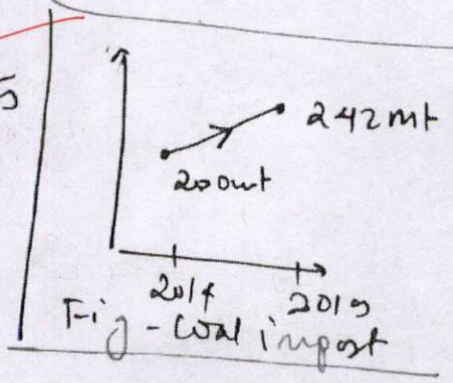


Fig - Coal import

* mention how monopoly of coal by CIL, various open court judgement, issues of environmentalism, has rendered the sector vulnerable.

Remarks