

118

GEOGRAPHY

Time Allowed: 3 Hrs.

Max. Marks: 250

Instructions to Candidate

- Please read each of the following instructions carefully before attempting questions.
- There are EIGHT questions divided into TWO SECTIONS and printed in ENGLISH.
- The candidate has to attempt FIVE questions in all.
- Question Nos. 1 and 5 are compulsory and out of the remaining, THREE are to be attempted by choosing at least ONE question from each Section.
- The number of marks carried by a question/part is indicated against it.
- Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in a medium other than the authorized one.
- Word limit in questions, wherever specified, should be adhered to.
- Illustrate your answers with suitable sketches/maps and diagrams, wherever considered necessary. These shall be drawn in the space provided for answering the question itself.
- Attempts of questions shall be counted in sequential order. Unless struck off, the attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

1. Invigilator's Signature _____

2. Invigilator's Signature _____

Name Somnaya Kumar^o

Mobile No. _____

Date _____

Signature _____

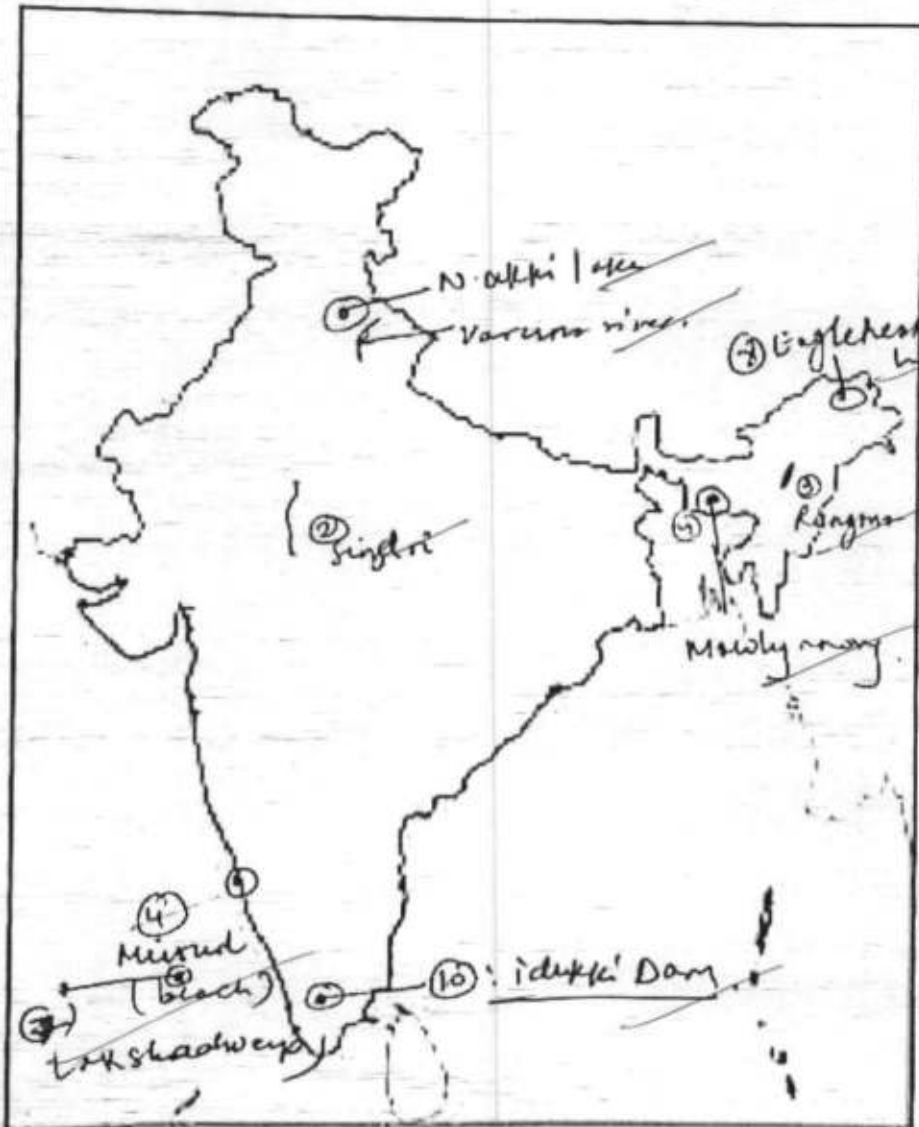
REMARKS

- * try to elaborate your points, use more diagram, examples in your answer.
- * use more elaboration in your answer
- * All the Best

————— 4 —————

Section - A

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



Remarks

Murud beach can be located near Ratnagiri region,
Nakki lake - Rajasthan;
Varuna River - Rajasthan;

- (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)

(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)

09.20

89.35

53

us 22

① Varuna river: * It is tributary of Ganges in UP.

- ① Tributary of Ganges,
- ② flows in Uttarakhand
- ③ Has high cultural value, provides ecological services.

② Sind river:

- ① Tributary of Yamuna, joins it in Uttar Pradesh
- ② flows through MP, & UP.
- ③ Provides irrigation facility for rice.

③ Patkoti Hills: * Assam Nagaland region.

- ① Extension of Meghalaya plateau in Assam.
- ② Between Mikir & Barail ranges.
- ③ source of Brahmaputra's small tributaries.

④ Mawlynnong: * cleanest village in whole Asia.

① well station in Meghalaya.

Remarks

- ① limestone caves (stalactites, etc) 'found here.'
- ②
- ③ Mhrud Beach!
 - Beach in Karnataka. * It is in Maharashtra.
- ④ Trikuta hills * complete freewriteup here.
- ⑤ Lakshadweep?
- ① Coral islands in Arabian sea
 - ② strategic location, ↑ India's EEZ
 - ③ no industry, ^{eco.} tourism potential
- ⑥ Fragilest wild life sanctary?
- ↳ In Arunachal Pradesh
 - ↳ Endemic ~~bird~~ species, ~~East~~ Himalayan hotspot
 - ↳ community led conservation.

Remarks

9

⑤ Nakkil Lake → It is in Rajasthan.

- Found in Kiplachal Pradesh.
- Famous tourist site

⑩ Idukki dam

- Dam located in Kerala
- On periyar river.
- Kerala floods in 2020 due to Idukki dam ^{sudden} water release
- Hydro project project ~~from~~ developed.

* You haven't properly located locations in hydro correct locations, also mention more on climatic, vegetation, tribal biodiversity in the region etc...

Remarks

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

* Winter rainfall in India is caused due to western disturbances in the northern plains and retreating monsoons impacting Southeastern coasts.

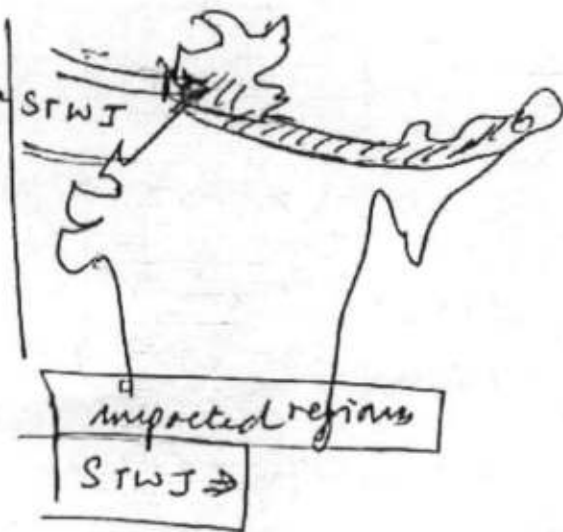
* mention the role of tropical cyclones in contributing rainfall during winter seasons.

Winter Rainfall: western Disturbance

* Due to ~~the~~ subtropical westerly jetstream, the western disturbances

originating in mediterranean

moves eastward
picking moisture from
black & Caspian sea.



Due to himalayan

obstruction & Tibetan divergence causes winter rainfall in North west plains, even reaches Brahmaputra plains.

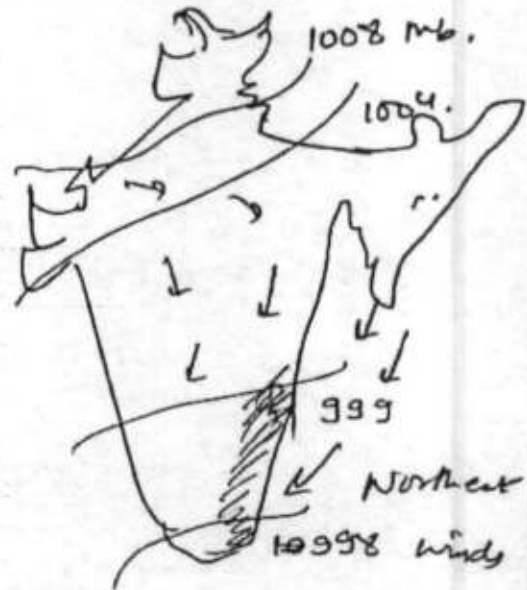
Remarks

Retreating Monsoon

(i) North east monsoon

retreat picks up moisture from bay of Bengal.

⇒ rainfall in Tamil Nadu, Coromandal coast.



Significance to Agri

① Rabi crops: need winter rainfall. ~ 20cm in winter (eg wheat, Barley, Pigea, Urlyana).

② Tea plantations in hills of Assam & Bengal

③ Damage to crops: hailstorm, ⇒ loss of crops ⇒ Cold wave.

↳ winter rainfall has impact on socio economics of India.

try to come up with better conclusion.

Remarks

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

4
Marathwada region is lying in the leeward side of the western ghats characterised by dry arid climate.

Climatological characteristics

① Temperature:
lies in tropical →
~~73°C~~ annual
average temperature

② Rainfall:

① Leeward side of
of western ghats
→ Arabian monsoon brings
little rain ⇒ < 50cm rains

→ Dry arid climate.



Remarks

③ Koppen's classification

→ Bsh → arid type of climate.
with scus vegetation found.

④ Soil moisture index:

- Low due to high evapotranspiration
than precipitation.

Marathwada region is thus a dry
region that needs agricultural infra of
irrigation, water to secure the livelihoods
of farmers & people in region.

→ write more on the socio-ecological implications
of not following proper cropping pattern in this
region.

→ mention steps to improve socio-economic

Remarks

Conditions in the regions.

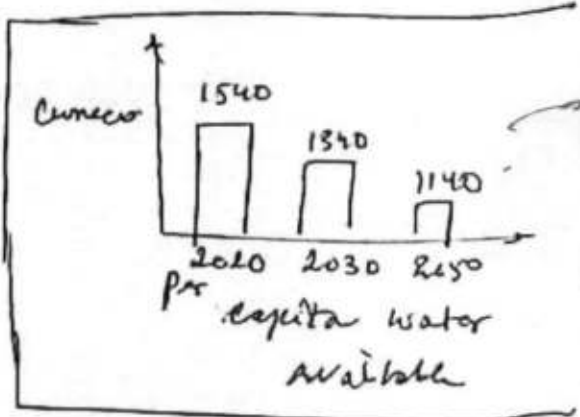
1. (d) Briefly explain the importance of Inter-linking of Rivers in India. Also, examine the problems and prospects of the Ken-Betwa river-link project: (150 Words) (10)

India's hydrological system varies across states with himalayan & peninsular drainage system.

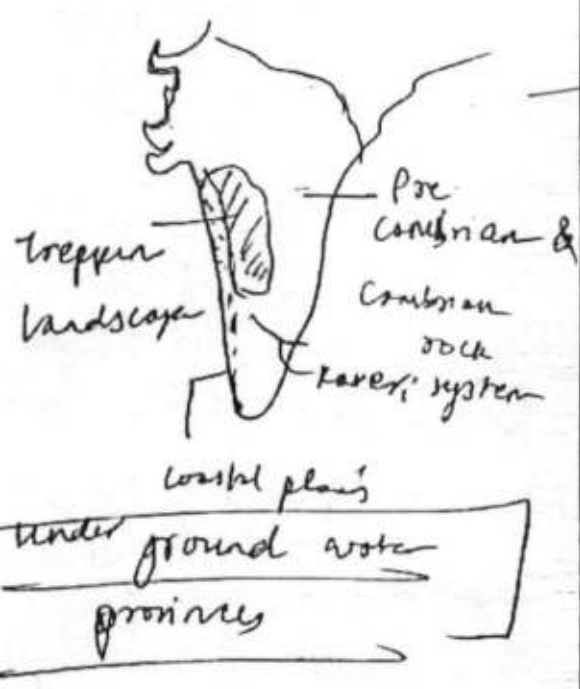
Interlinking of rivers & importance:

① Non perennial peninsular rivers with hard bed rock system.

② Underground aquifers prospects low in peninsular Rock system



fair presentation of Ideas.



good diagrams depicting various ground water practices in India.

Remarks

* mention how it helps in development of various other benefits i.e. irrigation potential & development of inland waterways etc.

③ Perennial rivers in Himalayas \rightarrow cause floods,
devastate properties \rightarrow can be diverted to
water deficit region.

④ rising per capita demand for water

Ken Betwa Project

Problems:

① Ecological: minimum
flow of water maintenance

(disturb channel flow & velocity)

② Panna tiger reserve [10% Deforest] \rightarrow
habitat destroy

③ Riverine ecosystemal fisheries, habitat loss.

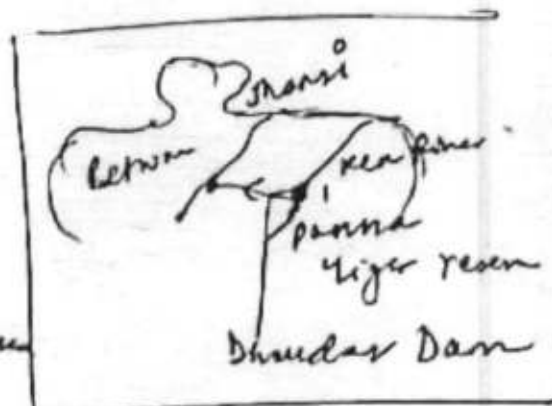
Prospects ① Agriculture: Irrigation (10 lakh ha)

② Water security & Bundelkhand drought prone region.

③ Gender Empower: less to water fetching &

④ Economical: Defence industrial corridor link

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 is being implemented with help of ~~world~~ world bank & AIB & govt for ensuring rehabilitation & maintenance of dams.

DRIP project & Dam safety & Management

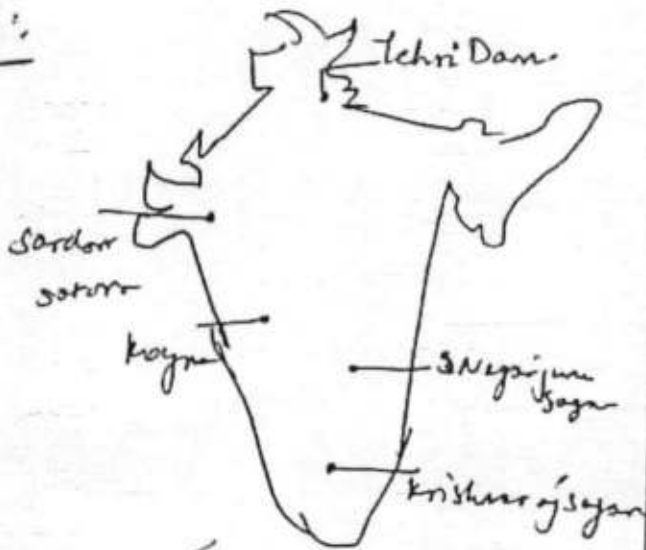
① 7100 dams in India are aged above 75 years \Rightarrow questions on

Structural viability:

④ hydrostatic pressure or leak reservoir led earthquakes (eg Koyna dam)

⑤ Structural weakness:

flood gates destroyed,



Dams in India

Remarks

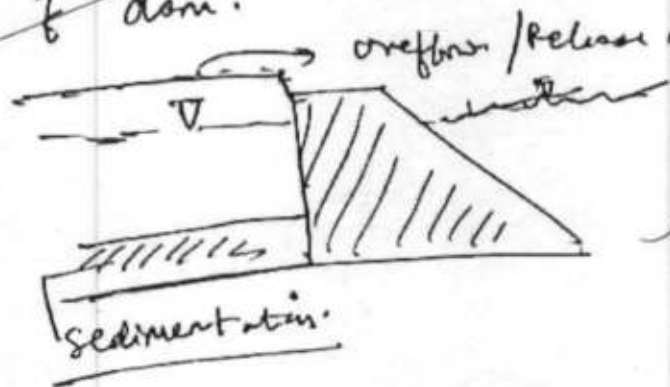
or Dam failure or release of excess water from Dam.

(eg idukki Dam: Kerala floods)

②. Lack of Timely inspection, reservoir levels check before monsoon & post monsoon

(eg Mullaperiyar Dam & lack Hydro Data sharing)

③. Sedimentation & lack of dredging & maintenance causing overflow of dam.



Good dimension of counter argument

DRIP project
thus helps in

proper Management & Dam safety through:

Remarks

7 Also mention factors of why SOSP needed, by bringing in concept of **Evolve IAS** the need for governance, address various Actualize your potential

- Interstate rivers here etc...
- ① Standard operating procedure for maintenance
 - ② State level & National level dam authorities for timely data inspection & check structural viability
 - ③ Basin based management & study for reservoir hydrology.
 - ④ Coordination among states

DRIP project critical for surrounding areas & downstream:

- ① Timely release of early warning system, saves flood related vulnerabilities.

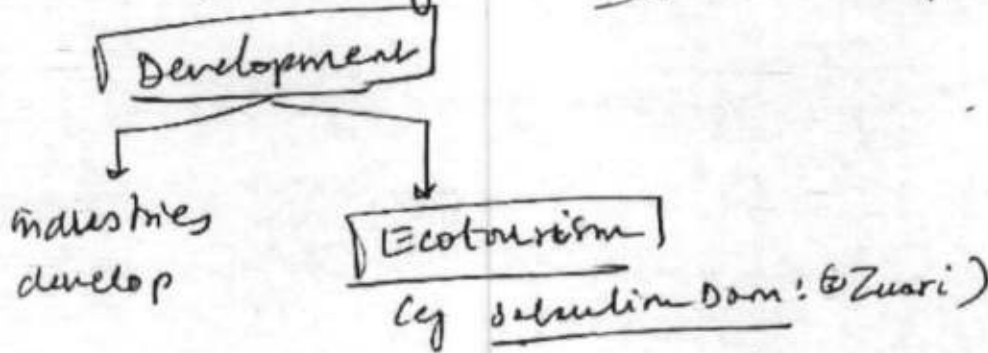
Remarks

② Canal irrigation & command area development
better if reservoirs are well managed.

10

③ Hydrological projects ensure

energy security in region ⇒ Regional

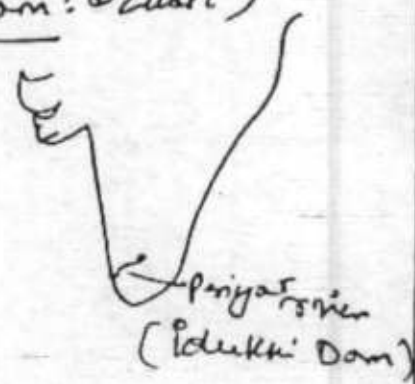


④ Downstream people :

① • Fishing & livelihoods

Saved ⇒ Dam management

② Disaster resilience.



thus DRIP project can save the temples
of India for the socio economic, ecological
benefits -

* you haven't mentioned on the rehabilitation

Remarks

aspect.

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)

India's coal shortage in 2021, its skewed energy basket with >60% thermal source & increasing per capita demand has impacted energy crisis.

fair
Intro
duction

Energy crisis phase of India

SUPPLY

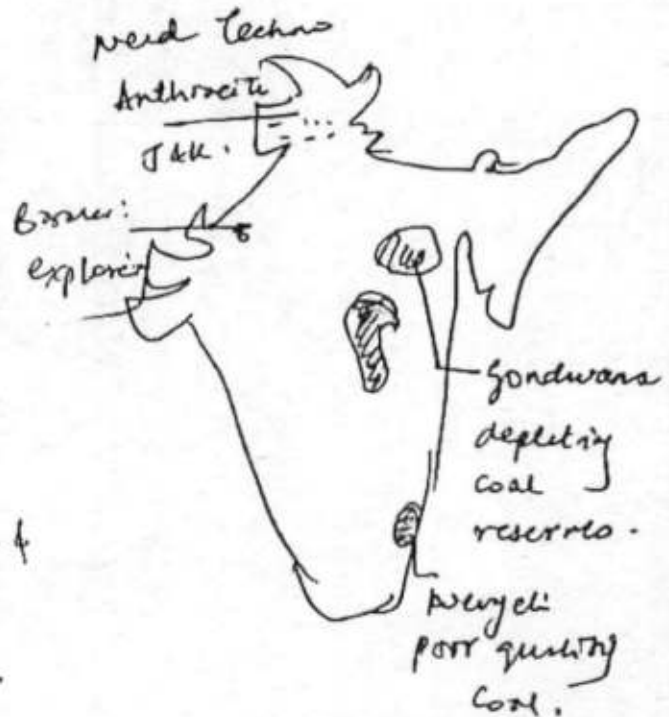
①. High dependence on coal:

→ + reserves & (5th largest reserve)

→ poor quality coal, mostly gondwana & tertiary period.

→ Global supply chain

Mention some of qualities which make poor



Coal reserves in India

Remarks

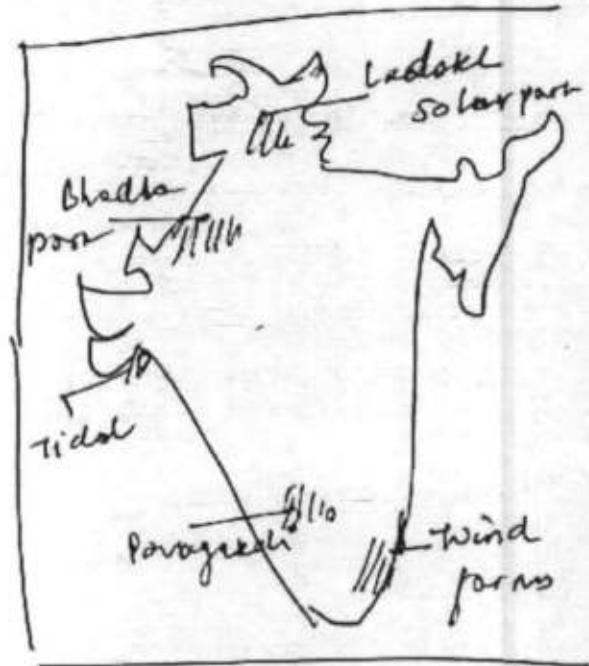
→ Present some cases of present day energy crisis in the world & shortcomings in it, which has posed energy crisis issue.

disrupted due to COVID-19.

② Renewables issue

① High cost & Technology needs:
→ R&D.

② Import of raw materials
eg silicon wafers from China



③ Grid integration + storage

Sustainable Strategy for twin objectives

① Supply-demand management?

① thermal power plants + efficiency →

Carbon capture & storage of emissions.

→ syn gas production (eg Talcher)

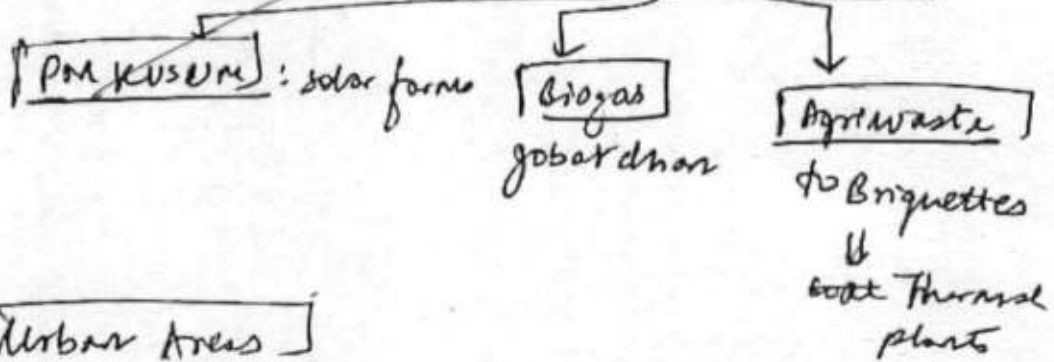
Remarks

" mention more on how making our energy mix more diverse with Bio **Evolve IAS** Actualize your potential

electronic batteries etc... is a way ahead.

②. Closure of old polluting thermal plants.

③. Renewable energy promote in Rural areas

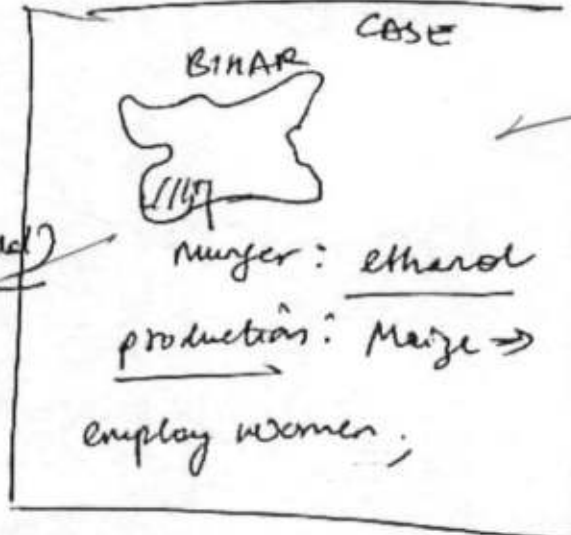


④. Urban Areas

- (i) Municipal waste: (Circular economy) (Niti Aayog proposed model)

⑤. International cooperation

→ One sun One world on grid.



good case study

for energy crisis handling India needs climate finance & tech-transfer to meeting SDG-7 goals.

Remarks

+ elaborate your answers with more diagrams, examples, facts, don't just mention them.

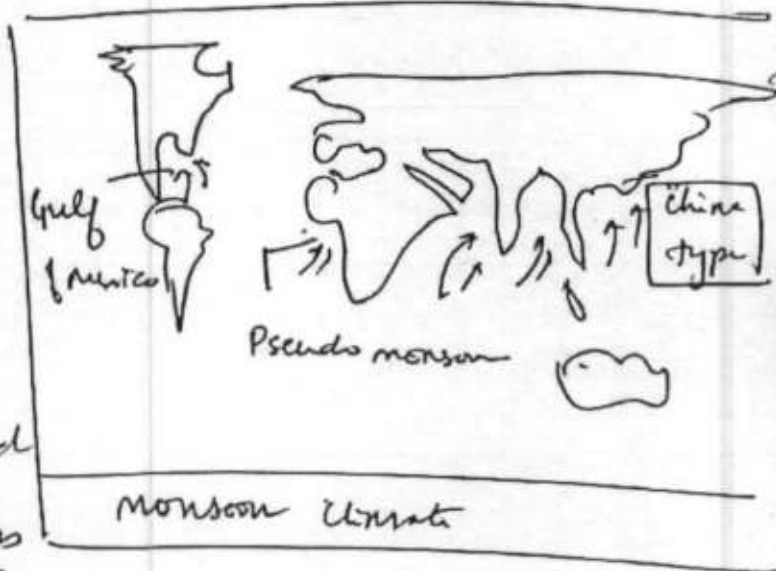
3. (c) Discuss the Origin and mechanism of the Indian Monsoon in the light of recent theories. (200 Words) (15)

Good intro
deduction. Indian Monsoon is a complex meteorological phenomenon that impacts the Asian & other parts of globe.

Origin & Mechanism

Frontal theory of Fohn

Fohn considered impact of air mass on monsoon.



fair presentation of various areas

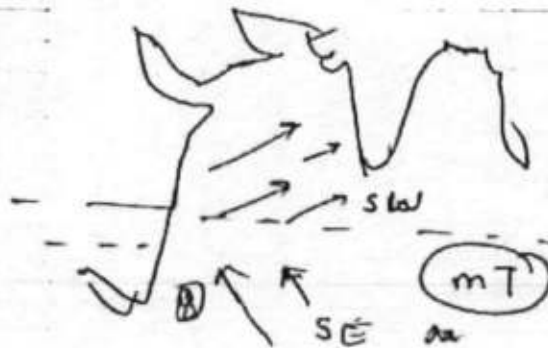
① As the ITCZ, low pressure belt ^{Major Shift} ~~is~~ to 20-30°N latitude in summer,

② it attracts the maritime tropical ~~moist equatorial~~ winds

Remarks

season, that on crossing equator under influence of Conolis shifts south west

(1) Similarly with shift of ITCZ in south hemisphere

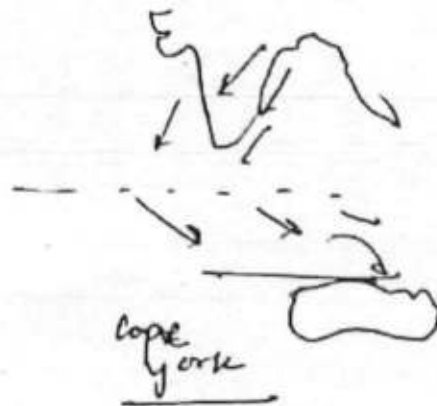


fair
direction
of
the
answer.

is winter, the season retreats in North east direction & upon crossing equator causes

North west rain in Australia

(2) Jet stream Monsoon is also expected by upper tropospheric



wind as proposed in Jet stream theory gen.

Remarks

Give a brief on teleconnection of monsoon
 i.e. ENSO, Southern Oscillation, **Evolve IAS**
 IOD, Madden-Julian Oscillation, AMOC etc.

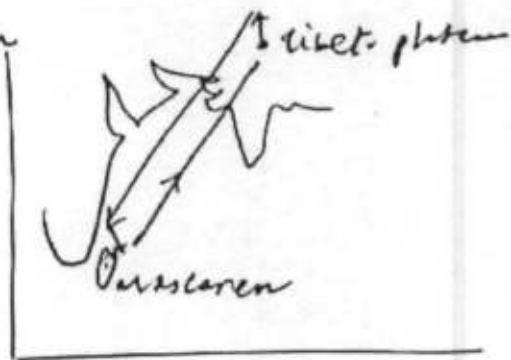
The STWJ causes high pressure system when it is in winter (December to March) that keeps monsoon winds from crossing subcontinent.



AMOC etc. in Equatorial rain fall in India.

② Upon shift of STWJ northward, the monsoon rainfall bursts.

* Kateswaram's theory is related to gen's STWJ as the coupling of Tibetan low & Rossere high in atmosphere causes monsoonal winds movement.



The monsoon is also impacted by Elvino & Indian Ocean Dipole, MJO that impact intraseasonal variability.

Remarks

Section - B

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

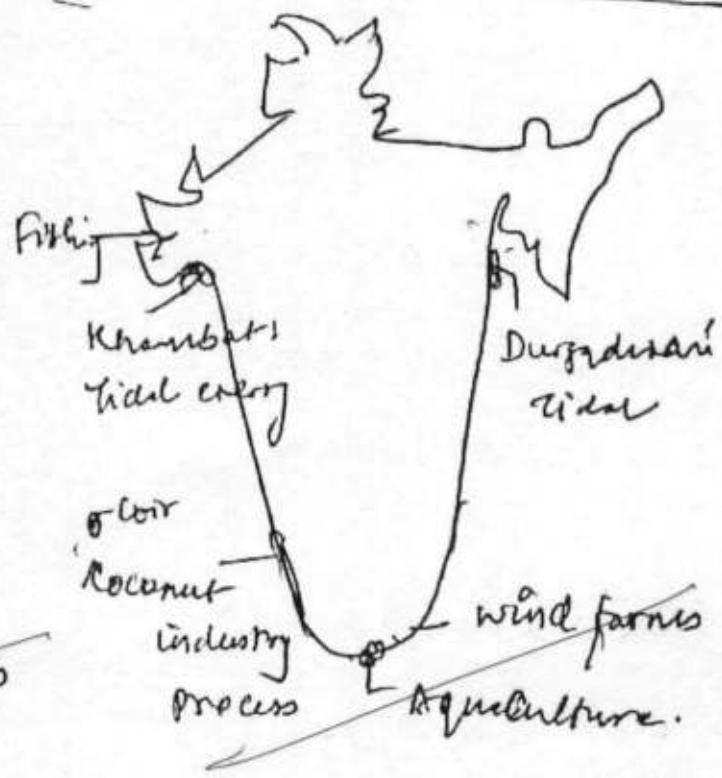
4.5

Blue revolution in India aims to capitalise the 7500+ km long coastline & aquatic resource of nation for socio economic & welfare of people

Blue revolution

① Economic:

- Marine fishing,
- to Aquatic sports & Cruise tourism
- Continental shelves minerals exploration



Exp. to Oil & Natural gas: Khambat

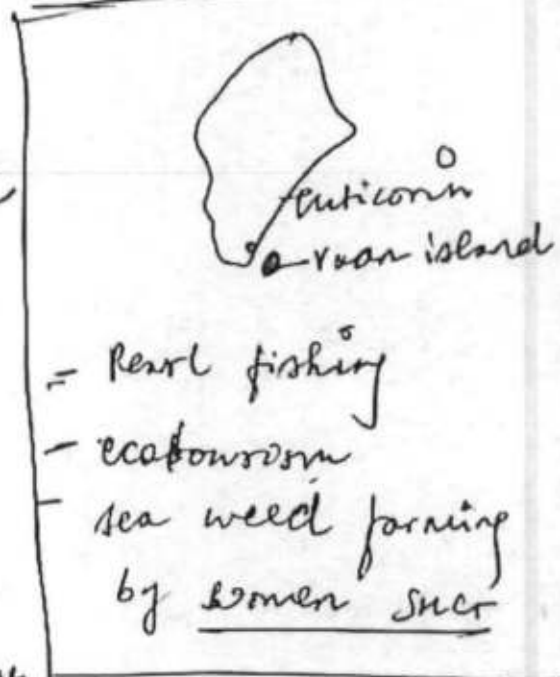
Remarks

Prospect - young population of India
 - Nutritional security
 - Income security for small & marginal farmers.

Social development

- train fish farmers
(PMA Matsya Sampada)
- use digital techno,
(GPS, satellite
imaging etc)

Case



Good case study

Prospects :

① Coastal development

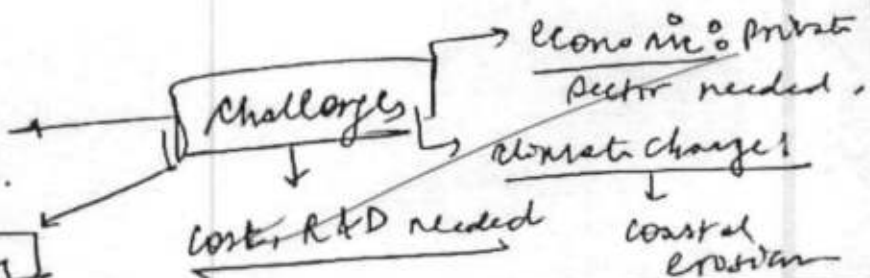
- port led, export oriented development

② Backward forward linkage: ^{Fish} Processory
industries

③ Marine minerals: Deep sea mining,

Give equal weightage in explaining it with more writeup

① Social:
Women inclusive.
Connectivity



Remarks

Including various examples, facts, case studies etc.

5. (b) Write a short note on Zero Budget Natural Farming;

(150 Words) (10)

4:5
Zero Budget natural farming is ^{type of} natural farming that takes no chemical inputs

4 tries ~~cost effective~~ agri-practices for high productivity.

Zerobased Natural Farming

② Method

① Beej
Teevamrit: seed be free from insects/pest infection

② Mulching: ~~Acetone~~
→ cover soil for nutrient replenish.

Case
Kara Dantewada district: Used District mineral fund for organic ZBNF → Millet cultivation.

good case study.

③ mention all the components of ZBNF

Remarks

i.e. Beejamifra, mulching, Teevamrit & Wapsha.

→ use diagrams to show various prospective diagrams in brief & where ^{ZBT had} potential for **EVOLVE IAS** development. Actualize your potential

③ Natural fertiliser: mixture of Jaggery, cow dung, cow urine for ↑ soil nutrient.

④ Natural insecticides.

⑤ Irrigation be in noon time: water use efficiency

Benefits

① Cost effective: local raw inputs / Jaggery / cow dung

② Climate smart: Adoptive: ↓ soil degrade

Govt's effort of green organic corridor along Ganga is step in right direction.

Challenges

① Extension services train farmer R&D.

② Agri yield is compromised @ Regional variation

Remarks

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

Land degradation resource in India is

limited with 730% being degraded

(ISRO's land atlas report)

H'S

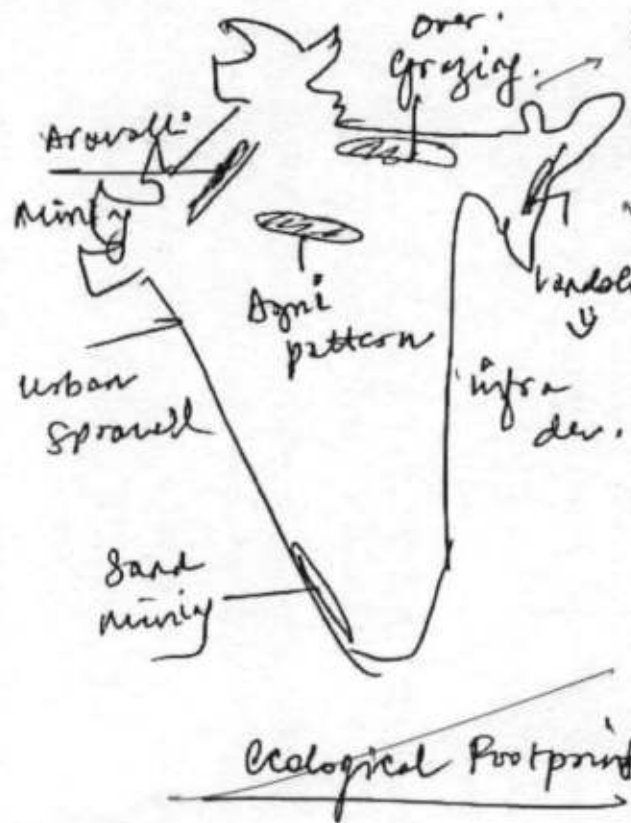
Growing Eco-footprint

SPATIAL PATTERN

①. Land Use Changes

↓ Forested lands

↓ (Dense forest area) ↓ (ISFR 2011)



good diagrams with various prospects

②. Wasteland ↑ ∴ Overgrazing ⇒ ↓ soil fertility ↓ ∞

③.

Remarks

① Agricultural pattern:

* 710% of GHG emission (Methane) Nitrogen emission ⇒ flood irrigation, rice

② Industrial land use & settlement: Non Agri

land use ⇒

⇒ encroachment: Wetland destruction (eg Chennai)



③

Way ahead

① National Land

use policy ⇒ Framework solutions

② Land banks & drone based

land monitoring ⇒ illegal land encroachment

③ Forestation & reclaim wasteland

Remarks

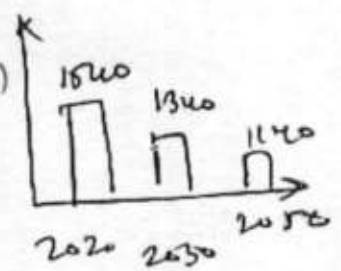
* Add how urban land, de-forested land etc.. have different ecological footprints.

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

4.5

Groundwater depletion has been on rise due to overexploitation & rising water demand availability

fair presentation of data.

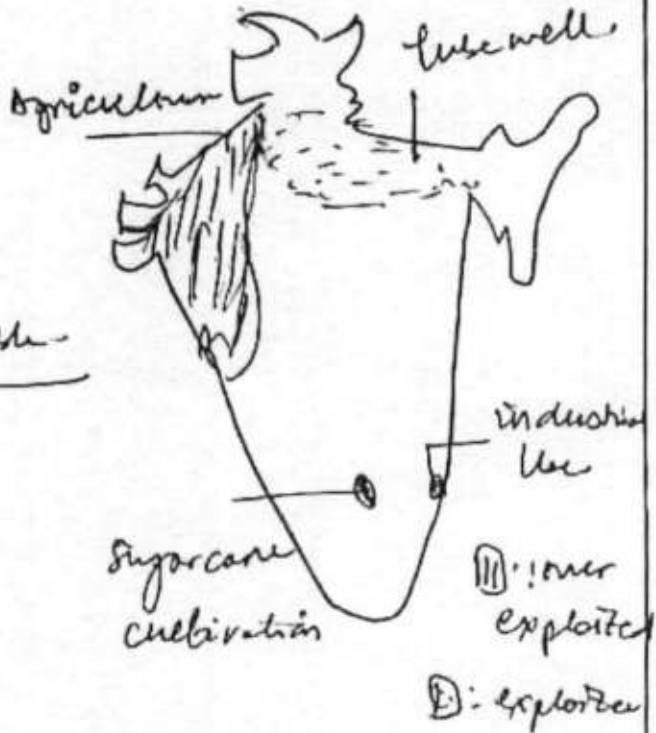


per capita water available

Main causes

① Agriculture
tubewell
→ Direct irrigation &

per water pump due to cheap electricity ⇒ exploitation (eg Punjab)



Remarks

→ mention more on role of how misplaced MSP, cropping patterns have been cause for ground water depletion in India.

② Industrial activity

→ Not strict admin regulate.

③ Domestic use:

- Non regulated by CGWA,

~~insistent misuse~~

④ Deforestation:

- Loss of percolation &
+ surface drain

Way Ahead:

① Atal Bhujal Yojana's
aquifer mapping to
whole
expanded country

② Sensor based water level monitoring

③ Agriculture be included under penal
action of CGWA regulations.

CASE

NGT scrapped the
CGWA 2013 guidelines
as it was toothless
& not regulated
industrial ground
water use

→ good
case
study.

Remarks

→ mention role of water harvesting,
command area development programmes in
recharging ground water & Increase the
potential.

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

(150 Words) (10)

West flowing rivers are ~~the~~ rivers flowing in the Arabian Sea.

① Drainage basin:

largely smaller basins, travel less distance.

② Less sediment load, thus no delta formed,

estuaries (eg. Narmada)

③ Structural controls of Drainage

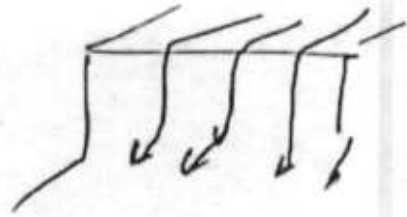
pattern. :

western parts ~~steeper~~ shallow steep slope gradient.



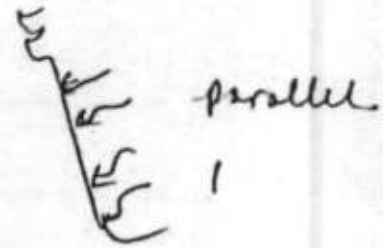
Remarks

→ Trellis pattern of Drainage



→ parallel Drainage

(eg. Sharavati, Mandoni)



⊗ Have Hydro projects potential

eg. Sardar Sarovar, Linganamakki

⊗ Rift valleys of Narmada & Tapi
have geothermal potential.

⊗ Fisheries,

(eg. Mandoni Goa)

⊗ Non perennial nature ⇒ Intertit
disput (eg. Mhadayi)

* Waterfalls formed in upper reaches:

(eg. Duhsagar, Jog falls)

Thus west flowing rivers have high
ecological & economic importance.

Remarks

* Speak more on the river regime of these rivers, drainage pattern of these rivers.

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. (250 Words) (20)

9

India's Himalayan region due to its geo-climatic and geological uniqueness has vast natural resources.

Natural resources : Economic opportunity

Western Himalayas :

1) Mineral mining :

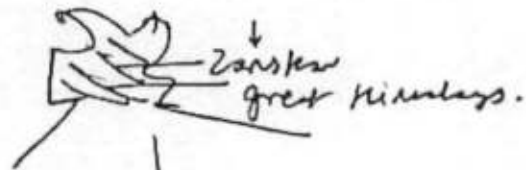
gold, good quality

coal

help boost industrial

location near

raw material (weber)



(Minerals)
Anthracite
Coal, gold,

2) Medicinal plants → pharma industry

eg. Nimmthal sea buckthorn

mention more on the places deposition

Remarks

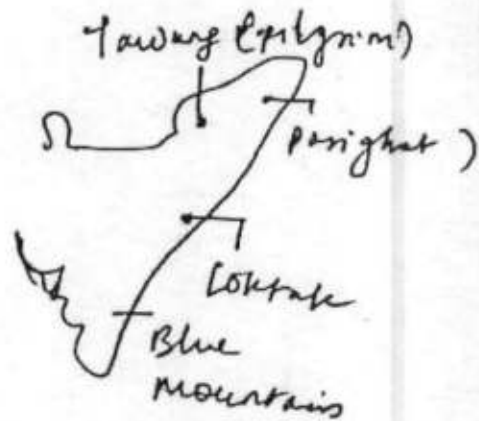
→ mention more on how Saffrogandhi, lavender etc. can be used for medicinal development.

③ Ecotourism: → Also mention on various endo-chronic lake formed here which have tourism potential i.e. Pangtso lake, Tsomgo lake etc.
 → by Chardham project in Uttarakhand → promotes livelihood, local people development.

Eastern Himalayas

① Economic

→ Mineral oil & Natural gas through Digboi,,
 → Vandana : Arunachal.



Tourism & Hill stations

② Tribal area Development:

- ethnic culture → assimilation (eg. Adivisi)
 - local infra development: Ecotourism & hill stations (eg. Ziro Valley)

③ ?

Remarks

Economic opportunities → mountain salt
 → various HEP potential
 → prospect for development of horticulture

Issues :

① Social issues :

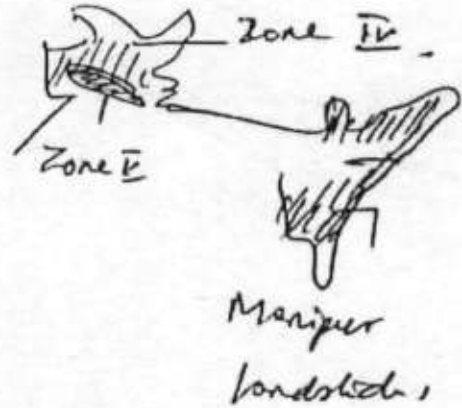
Elaborate these
don't just
mention these.

- + ① Tribal culture erosion (by Bodo)
- ② Regionalism to protect ethnicity.

② Ecological fragile ecosystem

①. Earthquake prone

②. ~~Endemic~~ Endemic species



③ Disaster vulnerability

①. Landslide

④ Security issues

- ① Maoists, terrorism, → impact economical utility (eg. J&K resource and → ~~NO~~ industries)

~~Chin~~

Remarks

7. (b) Geological, geophysical and inherited tectonic factors imprint on the climate and contrasting geomorphology of the Indian peninsula. Explain. (200 Words) (15)

Indian peninsula has a long geological history from breaking away from

Gondwana blocks to its collision

with Eurasian plate in Tertiary period.

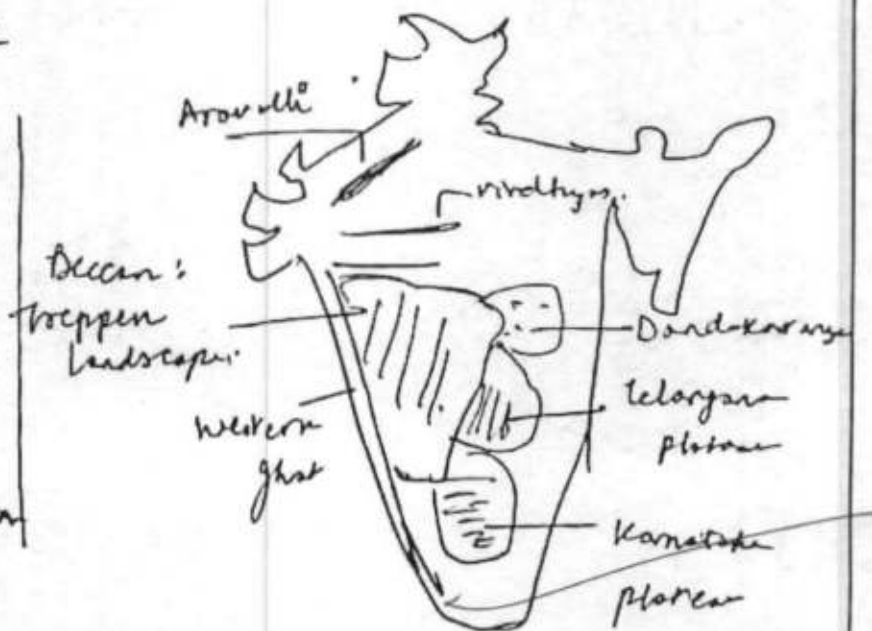
Geological, geophysical & tectonic factors imprint on climate :

Rainfall
① Pattern:

Aravallis
because
parallel
to

Arabian monsoon
see branch

Fair dimension



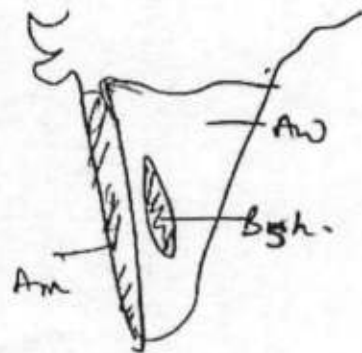
7

Remarks

→ less rainfall → Thar Desert on west of Aravalli & Dry conditions on east coast (marwar & region)

② peninsular plateau of south being on leeward side of western ghats is & receive ~~etc to~~ 1700mm rainfall
→ Drought prone: Marathwada, Rayalseema, Karnataka plateau.

③ Faults & lines & rift valleys due to tectonic fracturing & precambrian & Gondwan shield impacts Hydrological cycle → less underground water.



Hopper's climatic change

Remarks

Contrasting geomorphology

①. Rock system :-

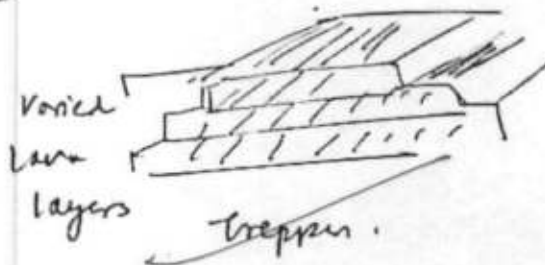
Due to Gondwana land structure,

↳ Chotanagpur plateau has high reserves of coal, minerals.

②. Purana & Cuddappah rock system have gold, iron, manganese (eg. Cuddappah region)

③. Trepper landscape :-

Decent plateau due to pressure volcanic flows



④. Channel morphology :-

→ Hard bed rock, a straight courses, mature stage of peninsular rivers due to tectonic stability.

Remarks

7. (c) Discuss the ecological significance of increasing desertification in India and suggest measures to control it. (200 Words) (15)

7.5

As per ISRO's land atlas report, >30% of India's land is degraded and may reach 50% by 2050.

Ecological significance of ↑ Desertification

①: loss of

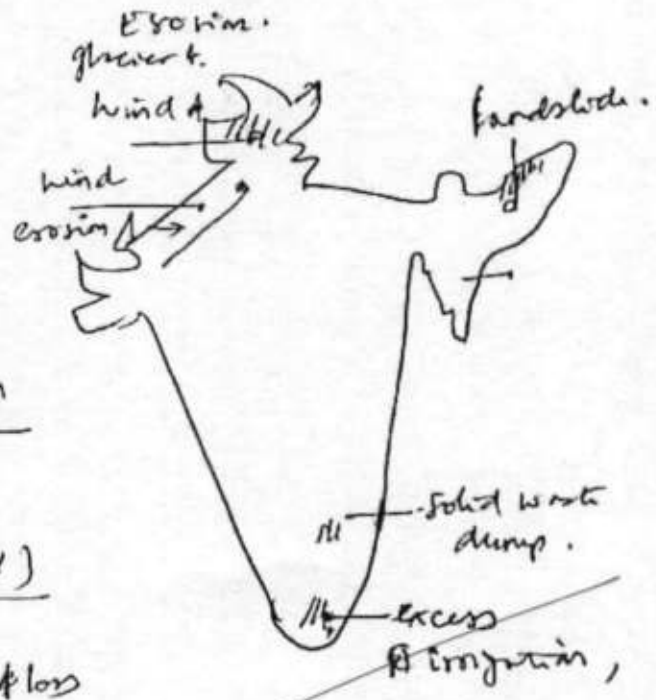
Biological productivity

impacts
natural vegetation
growth.
(eg. Banni grassland)

②: soil fertility loss

impacts

mention how loss of moisture is leading to fertility loss.



Good example

Remarks

* mention how desertification has ~~lead~~ led to
loss of ecosystem provisioning

Agricultural development

① Habitat destruction :

① invasive species introduction

②

② Water security :

① water percolation ↓ affected

(eg Morwar region of Rajasthan)

↳ Pipelines blockage

③ Disaster

→ Dust storms ↓

④ As a result of land desertification increase

(eg Aravallis biological zone conservation)

} Give some
examples
where there
loss of species
is seen.

Remarks

mention how some of India's commit-
ment such as Bonn challenge, UNCCD

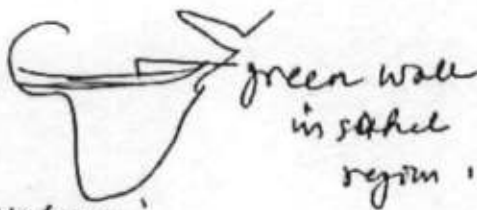
UNCCD etc.. helps in addressing desertification.

Measures to control

① Nature based solutions

Afforestation & reforestation

in wastelands (eg).

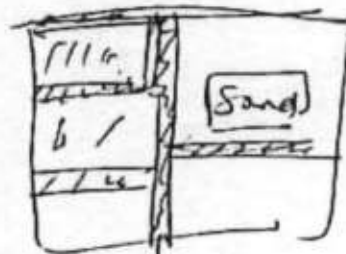


Carbon:

② Waste Disposal

② Sand dune stabilisation

CAZRI has studied
grid based stabilisation ⇒



③ Watershed Development

① local participation to

③ Agri pattern:

⇒ Diversify to agroforestry & forest system
Dry land cropping system

CASE

Vivaro Bazar:

Ahmednagar: water shed development

helped & agri
productivity in
drought prone region

→ good case study.

Remarks

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. (250 Words) (20)

Interlinking of rivers of Himalaya & peninsular was first proposed in National perspective plan to address the water deficit & surplus basin mismatch.
 * mention who gave the concepts envisaged in the plan.

Need of interlinking

①. Drainage basins &

① low discharge & non perennial - peninsular

② Hard bed topography in peninsular:

underground water recharge low

③ surplus waters in Himalayan:

- youthful stage

Complete the sentences don't leave some space in between & quote example

Remarks

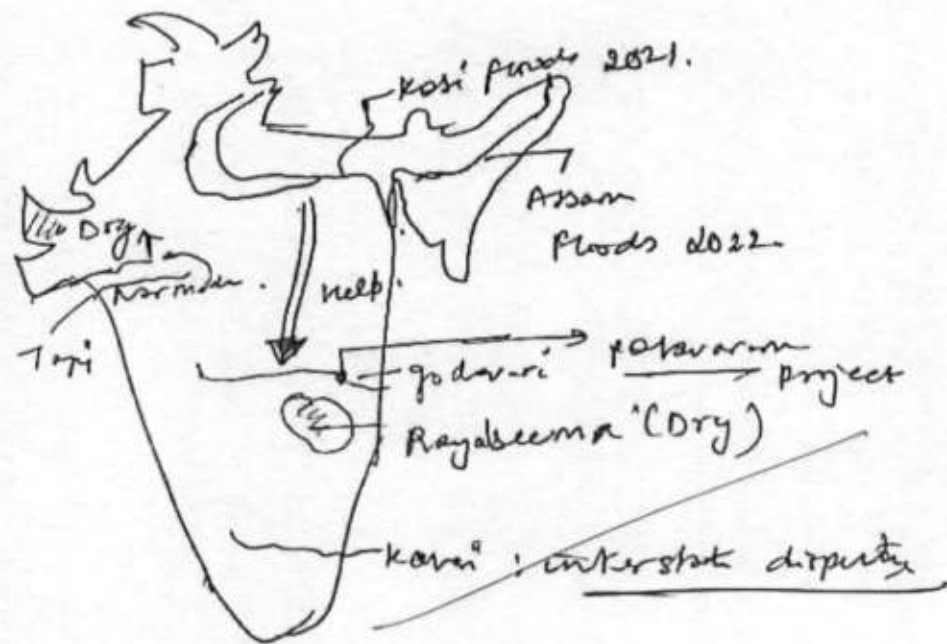
- * mention a) helps in development of Inland waterways
- b) Energy security
- c) Irrigation potential

for your argument.

causes river shifting, flooding, river capture :

these due to high discharge .

⇒ can be diverted to peninsular .



Issues

①. Drought prone areas : get water
Security & irrigation (by Vidarbha)

Remarks

② Navigation :

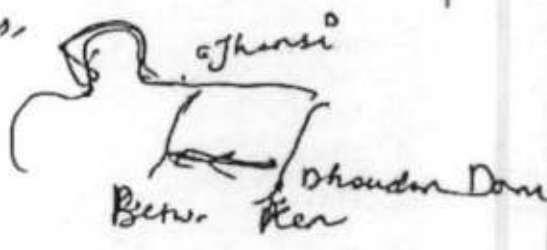
- Waterways → industrial development
- Connectivity improve regional development
(eg Bihar to Andhra via Waterway)
Agri export ↗

③ Challenges

① Capital is high

→ mention some monetary value lost in the process.

→ Dams, the check dams, canal system etc
is is costly



Ken between link project

② Natural flow
impacted :

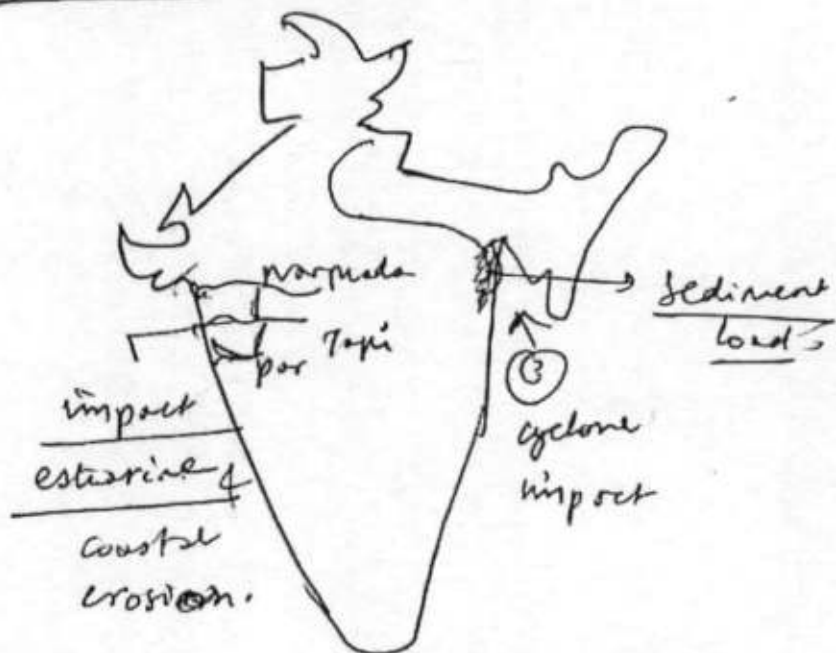
→ Drainage basin affected by
low minimum ecological flow.

Remarks

③ Habitat & forest def destruction

eg panna tiger reserve → relocation of tigers

④. Coastal delta formation, sediment
load imbalance



⑤. social - tribal

displacement →

rehabilitation & cultural & social

loss → jobs, living standards.

Remarks

* mention loss of deforestation, loss for rehabilitation of displaced people.

8. (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. (200 Words) (15)

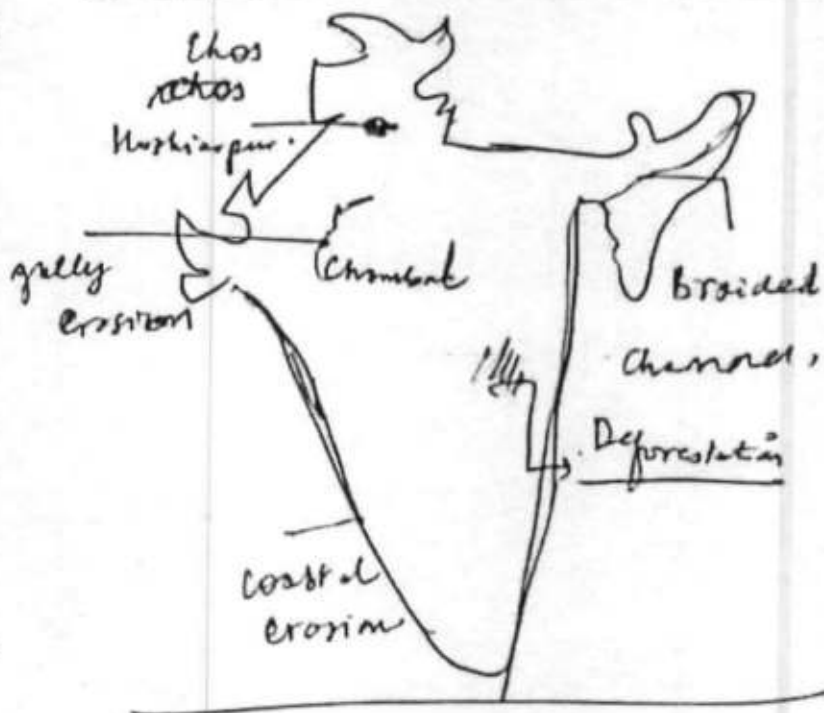
Soil erosion is removal of top layer of soil due to erosive agents like glaciers, rivers, wind etc.

Main Causes:

① Natural causes:

② Erosive agents →

sheet, splash, rill erosion by river.



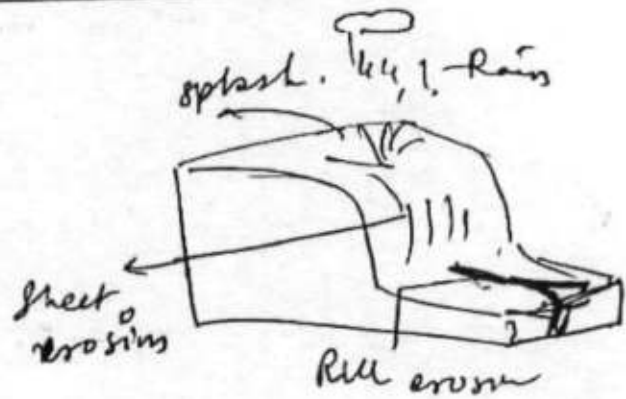
③ glacial erosion, in hills.

④ gradient change / stop change suddenly.

* mention different types of soil erosion happening
* Also mention some regional trends of soil erosion

Remarks * mention factors influencing the formation of soils.

Chos formation at
foot hills of
Shivaliks.
(Nohiarpur)



Man Made causes → * Dam construction
+ Desertification etc.

① Deforestation
→ due to industrial development or
mining.

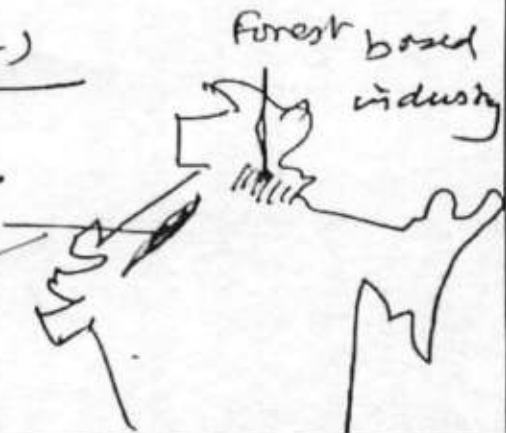
② shifting cultivation: causing clearing forest
(eg. Mizoram)

③ Infra development
tunnels,

(eg. char Dham project)

④ Overgrazing:
(eg. Banni grassland)

Asavalli
mining



Remarks

7

Measures

①. Afforestation :

- increase tree cover & ↓ soil erosion.

②. Decentralised planning & watershed management

③. Agricultural practices: sustainable

↓
Cropping pattern:
Water use efficiency

↓
Livestock separate ranching area &

Fodder crops.

Case

Pani Panchayat :
Koraput District

farmers manage
water supply → ↓
flood irrigation

→ Good Case Study.

④. ~~landscape~~ ~~deserts~~ Idiographic approach: region based management

↓
hill area: slope stabilise

↓
Desert
sand dunes

↓
coast
afforestation

Remarks

* mention various methods like terrace farming, shelter belt, social & Agro forestry etc..

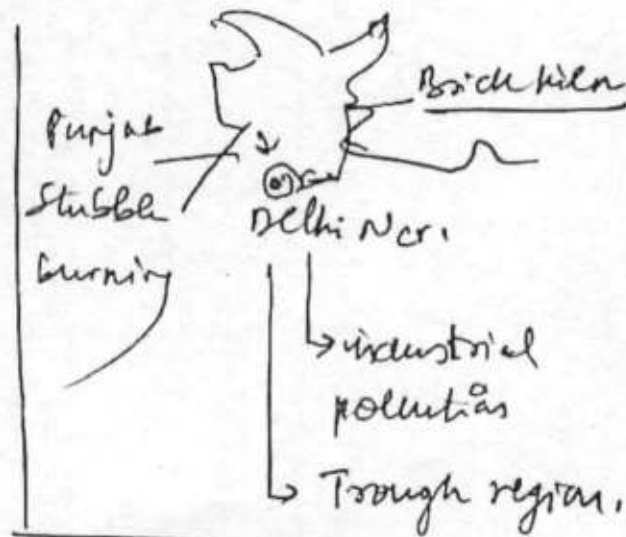
8. (c) Discuss the rising problem of air pollution in Delhi NCR also write about the initiatives taken by central and state governments to curb the menace. (200 Words) (15)

Delhi NCR is the most polluted capital of the world as per World air quality report IQ Air.

Rising problem of air pollution

(i) Geographical conditions

forms a trough region which with polluted air from



surroundings converge in NCR.

(eg) stubble burning in Punjab,

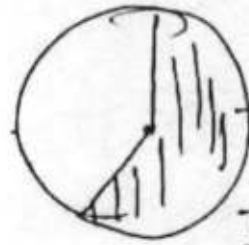
Remarks

brick kiln of uttarpradesh. etc

② Rising population. Migration &

↑ personal vehicles:

→ congestion with
ill planned routes &
urban connectivity
impact concr.



air pollution

60%
transport

Fair
presentation
of
Idea.

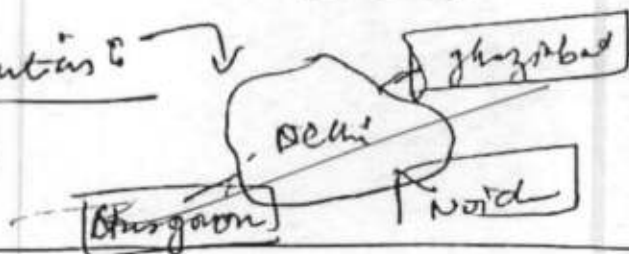
③ Admin.: illegal construction &

use
full
words

lack of regulation of CPCB norms
for air pollution mitigation (eg
dust suppressants in construction)

④. Industrial pollution:

CPCB regulation
work



Remarks

* mention the role of vehicular emission,
construction, thermal power generation etc.

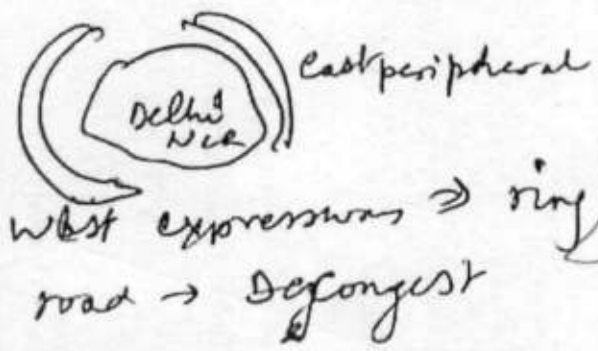
+ mentions role of some measures like smog tower, a pen court wing of avoiding diesel vehicle older than 10 years age etc.

Initiative of govt

Central

① CAQMA act: Commission for air quality management ⇒ statutory body to regulate ^{norms} pollution.

② East & west peripheral expressway



③ National green highway mission, & NAPCC are some of steps to ensure Right to clean environment

State

① Odd-even Rule: to regulate vehicular pollution & less private vehicles on roads.

② Smog towers
→ installed to ~~absorb~~ adsorb pollutants from nearby region (IIT Delhi + govt)