

GS Crash Course & Mains Test Series 2023**Test 3****Time Allowed: 1 Hour 30 Minutes****Max Marks: 115**Name: AakshitiTest Submission Date: 11/7/23

Email Address: _____

Mobile: _____

Instructions:

1. All questions are compulsory.
2. Question 1-7 **10 marks each & Word Limit 150.**
3. Question 8-10 **15 marks each & Word Limit 250.**
4. Answers must be written in the medium authorized in the admission Certificate, which must be stated clearly on the cover of the booklet in the space provided.
5. Content of the answer is more important than its length.
6. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
7. All parts of the question should be written at one place itself.
8. **Filling all the details in BLOCK LETTERS is mandatory.**

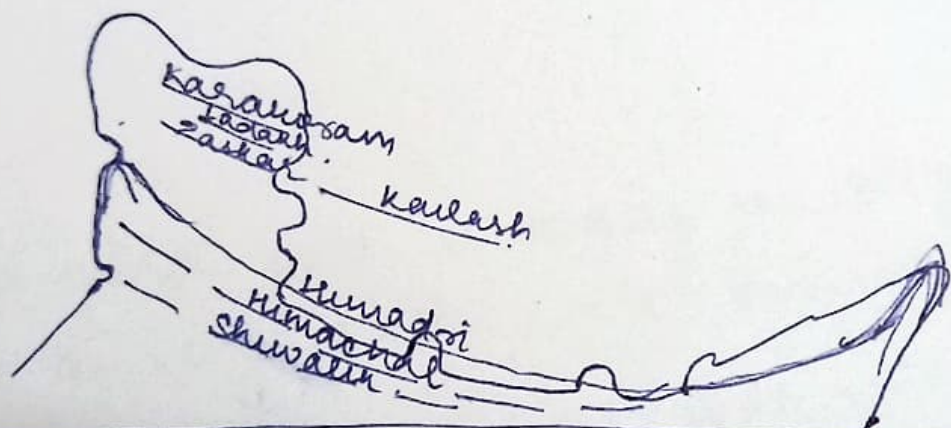
Q. No.	Marks	Q. No.	Marks
Q1		Q6	
Q2		Q7	
Q3		Q8	
Q4		Q9	
Q5		Q10	
Total Marks:		Evaluator Code:	

For any issue related to GS Test Series, write only at gs@shubhrranjan.com

Que.1

Why is the Himalayan Mountain often referred to as the "Third Pole"?
(10 Marks, 150 Words)

Himalayas are a tertiary fold mountains that were created by the convergent motion of Eurasian and Indian plate.



They are often referred to as the third pole →

- ① Glaciers & ice bergs of largest quantity outside north & south pole.

② similar ecosystem & biodiversity eg. ex. frigid zone

③ Impact on climate from melting of this third pole is very high

④ Role in reflecting insolation ⇒ cooling effect

⑤ Feeding of perennial rivers. eg. Himalayan rivers - Ganga,

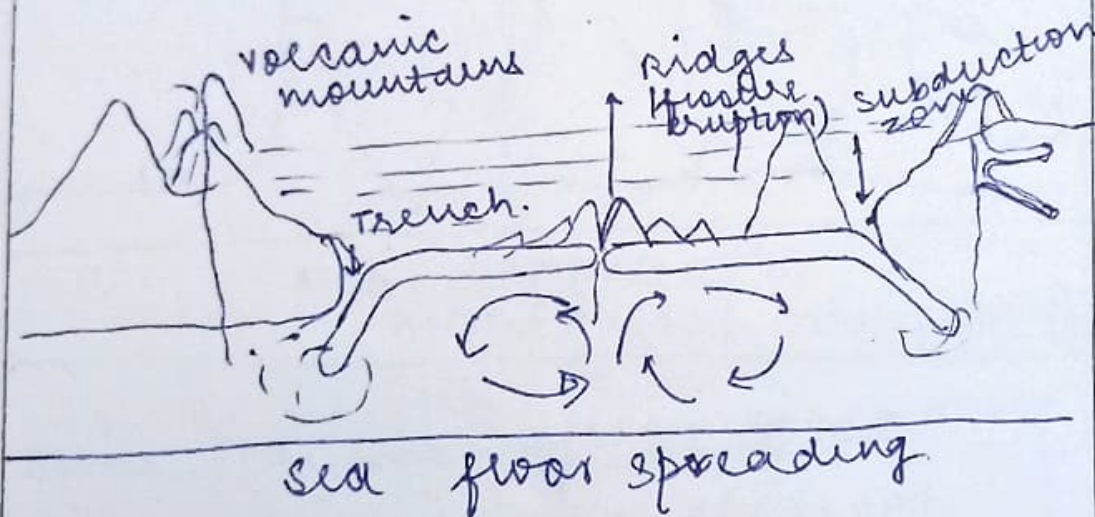
This third pole is today melting at a very fast rate owing to the rapid global warming thereby creating a risk of food & water crisis in the South & South East Asian region.



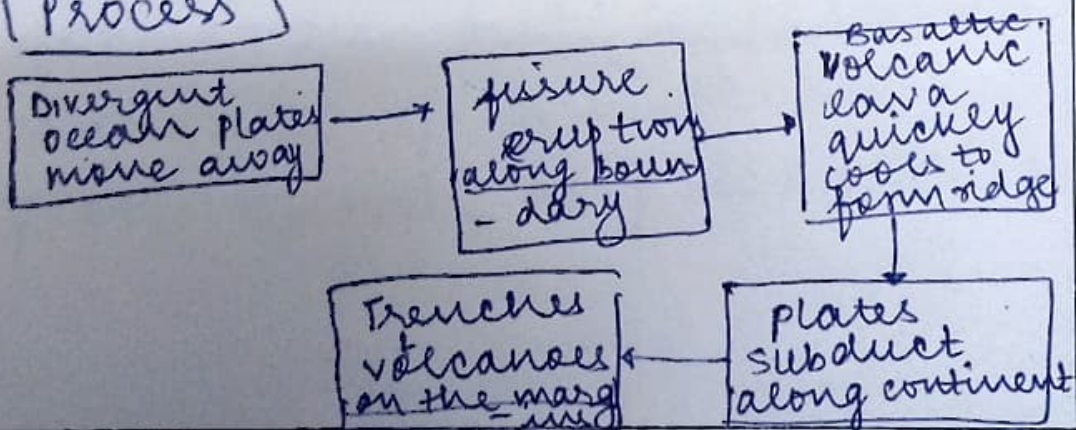
Que. 2

Explain the process of sea floor spreading leading to the formation of mid-ocean ridges. (10 Marks, 150 Words)

The sea floor spreading theory was proposed by Harry Hess. It is created along the divergent boundaries

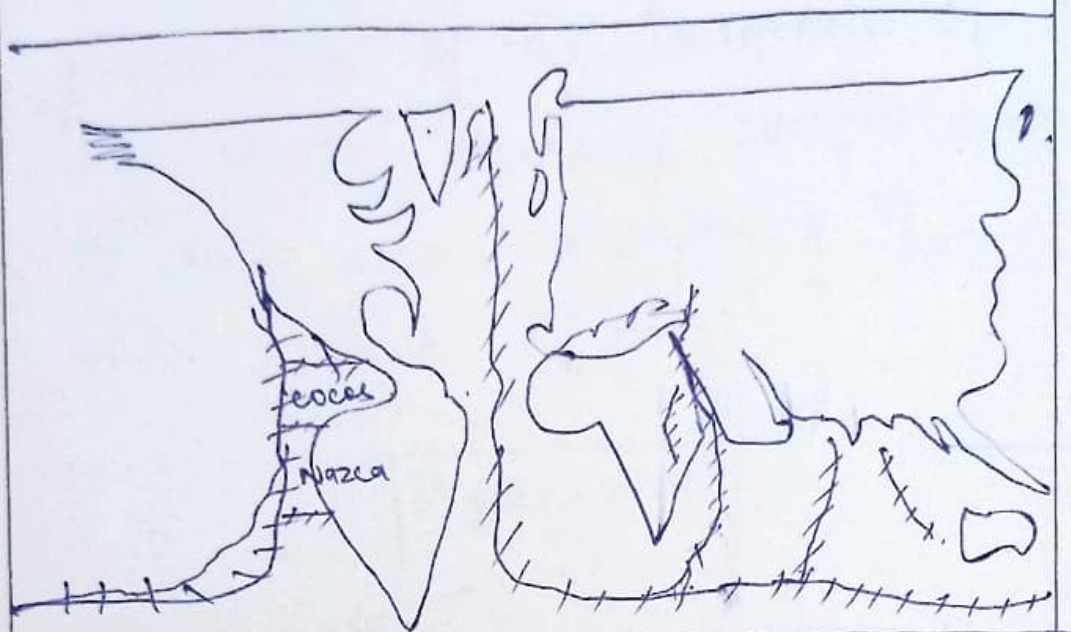


Process





This process has given rise to a 65000 km long unbroken chain of mid-oceanic ridges



MID-OCEANIC
RIDGES. (15% earthquakes)

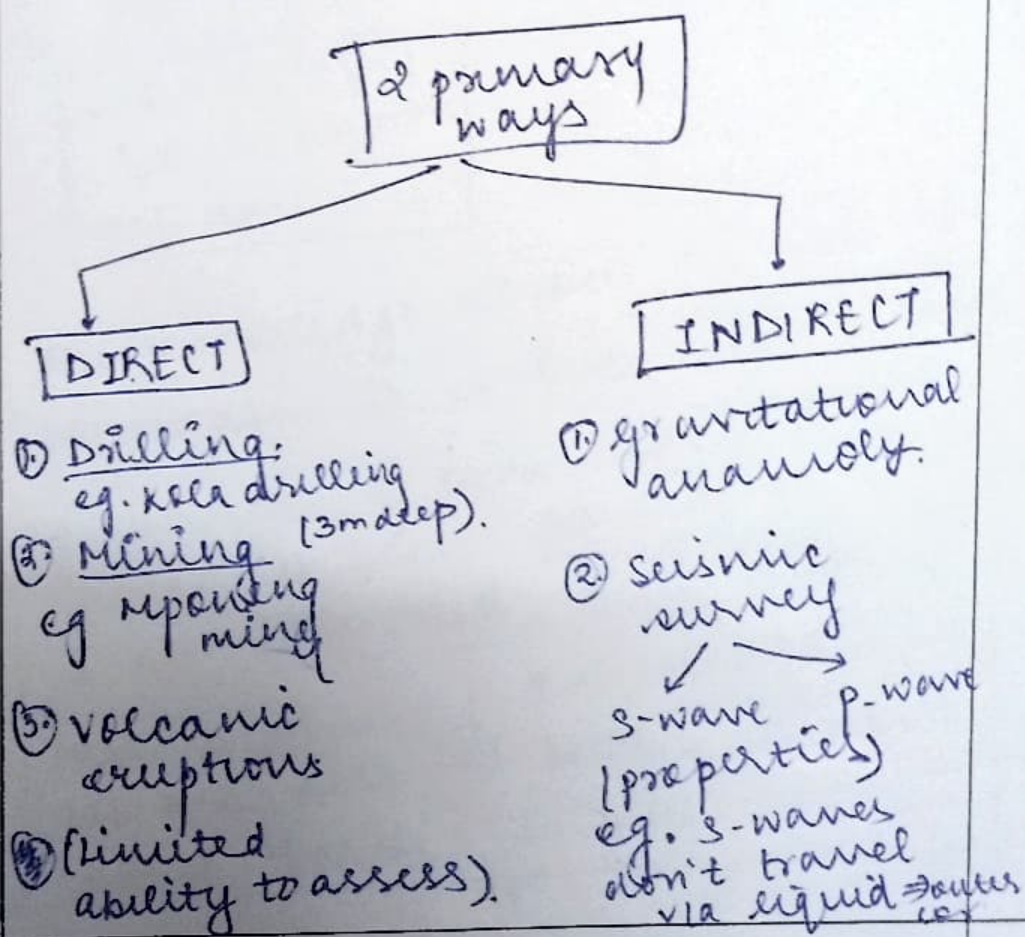
Thus the sea-floor spreading has created a geological formation that supports renewal of the oceanic plate as well as biodiversity

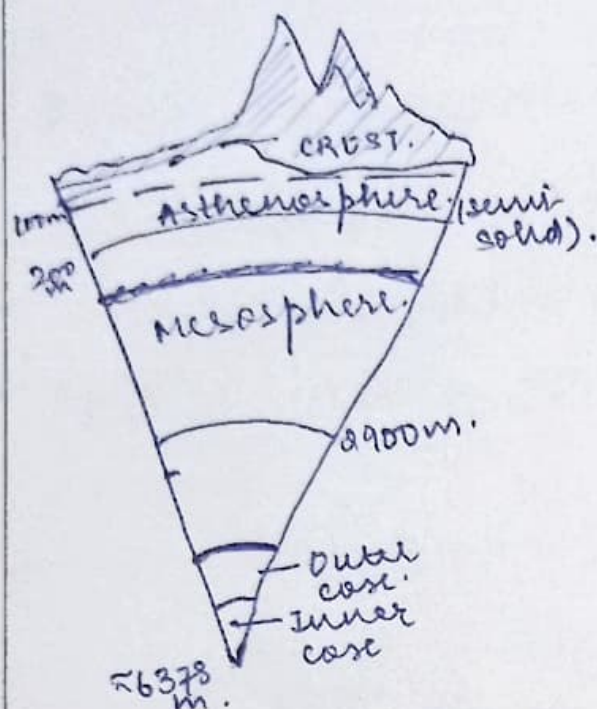


Que.3

How do scientists study the properties of the interior of the Earth despite it being inaccessible to direct observation? (10 Marks, 150 Words)

Geologists have found a variety of ways to study the properties of the interior of the earth; thereby contributing to our understanding of our planet "earth"





Interiors of
Earth known
till date

③ Magnetic
survey to
understand
distribution of
minerals

④ studying the
changes in
pressure &
temperature
with depth.

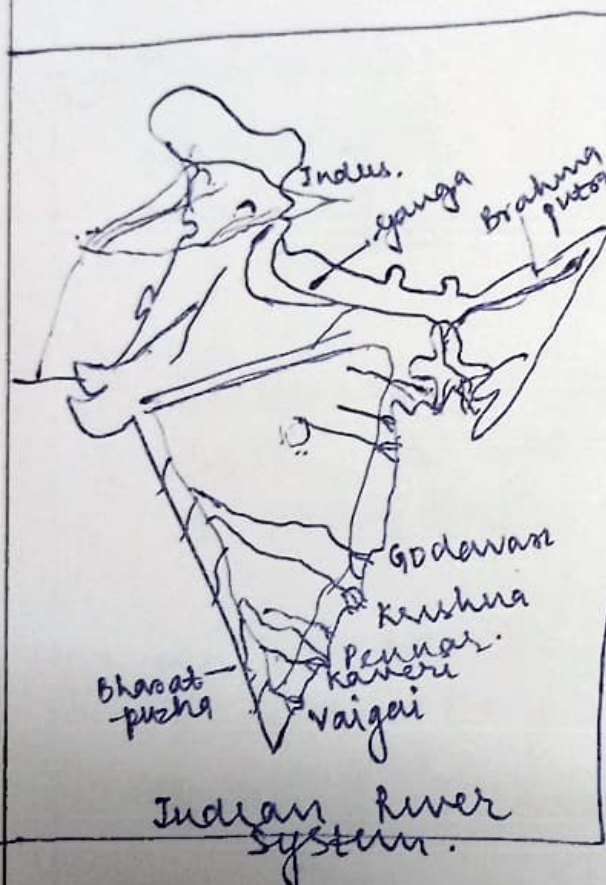
⑤ Meteorite
study.

The knowledge about the interior
continues to evolve even today
eg. inner of inner core has
recently been found as
a metallic solid. Thus, with
this expanding knowledge,
we are able to better underst-
and Earth's origins

Que.4

Bring out the differences between the Himalayan and the Peninsular drainage system. (10 Marks, 150 Words)

Drainage system refers to a network of the river channels along with its origin, flow properties & catchment.



Himalayan rivers
 → origin from Himalayas
 eg. Ganga
 Peninsular rivers → originate from Peninsular India
 eg. Godavari, Krishna.

Differences



Himalayan

① Perennial; watershed-Himalayan

② Form expansive deltas. (Arcuate).

③ Primarily terraced drainage pattern

④ Volume of water carried is very high

⑤ Major catchment → Bay of Bengal.

Peninsular

① Seasonal watershed - Western Ghats

② Deltas are less in extent, also forms estuaries

③ Primarily rectangular drainage pattern

④ Volume is relatively less

⑤ Catchment → Arabian & Bay of Bengal.

Both, river drainage systems are economically, ecologically & socially important sustaining life & livelihood of India.



Que.5

How does India's rising forest cover help in mitigating the impact of climate change? Discuss the challenges in conserving India's forest resources. (10 Marks, 150 Words)

According to India State of Forest Report 2022, India has a forest cover of 24% occupying 50th position worldwide and 3rd position in terms of the rate of increase of forest cover.

Mitigating impact of climate change (i.e. preventing rise in global warming & associated changes)

① Provide for carbon sequestration e.g. tropical forests of Kerala & Tamil Nadu sequester large amounts

② Sustain the water cycle.

③ continued livelihood of the



forest dwelling communities

- ④ Sustaining the associated biodiversity & ecosystem services
eg. air filtration, Oxygen release, source of food etc

Challenges

Security concerns

eg. Removed clearance to requirement for 100 km stretch along border to clear forests

→ Rapid & unplanned urbanization

→ Agriculture encroachment
eg. Teraï A & C
landscape cleared

→ unholy nexus of land mafia & politician → clearance permitted

→ Illegal timber trade

These challenges can be overcome by carefully strategising balance between ecology & development using clearance laws effective implementation



Que. 6

What are the primary factors contributing to the persistent reliance of the Indian economy on coal? Suggest ways to foster a just transition from coal. (10 Marks, 150 Words)

While India occupies the third position for renewable energy capacity, its reliance on fossil based energy sources continue to be in majority (~60%). This can be attributed to some factors →

① Lack of a reliable renewable energy source & supply ecosystem. due to import & supply chain dependence on materials requisite for the same (eg lithium, beryllium etc).

② coal sector employs major workforce ⇒ shift can result in high unemployment & other social issues. (uncertainty).

- ③ India is still developing → coal sector important for India to transition to developed economy
- ④ lack of financial & technical resource to make a smooth transition

Ways for 'Just' transition

- ① Climate justice
The historically responsible developed nations must leave greater carbon budget for India & provide finances & technology
- ② Hybrid energy mix → India must develop renewable energy while slowly "phasing down" from coal
- ③ Climate finance
Financial institutions must direct money to green & efficient infrastructure
- ④ Green jobs
Youth should be employed more in renewable sector.

Given the present context of rapidly growing global warming India must focus on making a smooth & just transition.



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Que.7

Examine the geographical factors influencing the spatial patterns of the shipping industry around the world. Discuss the environmental and socio-economic impacts of the shipping industry on coastal regions. (10 Marks, 150 Words)

the shipping industry. build on the geographical blessings of the present arrangement of the continental tectonic plates



[spatial pattern of shipping Industry]

shipping industry's location is closely linked to ~~the~~ the global maritime routes & ~~intercontinental~~ connecting routes

[Factors]

eg. INSTC → (Suez Canal - Asia-Europe route) or. Trans-Atlantic route

- ① Isthmus & Straits eg. Panama.
Isthmus & Malacca Straits ⇒ shipping hubs
- ② Coastal area eg. Mumbai ports, or. Shanghai port (includes bays, ~~reefs~~ & lights eg. Gabon, Benin etc)
- ③ Seas eg. Mediterranean sea & Black sea littoral states → major shipping hubs.
- ④ Rift valleys eg. Rhine & Rhone valleys. important shipping industry.

Environment & socio-economic impact

→ Air pollution high	→ economic growth eg. coastal economic hubs
→ changes in water electric properties	→ employment generation.
→ sulphur release	→ migration to econ. hubs eg. in Hong Kong coast.
→ waste disposal	
→ oil spills	

Thus, the shipping industry needs to grow sustainably in line with global goals.

Q. 5.8 Change in the cropping pattern in India from cereal to high value crops will have its own pros & cons. Critically examine with regards to factors influencing shift in cropping pattern (15m)

The area under cultivation of high value & high potential crops has surpassed the overall area under food crops like cereals. These crops contribute approximately 11% to over export earnings from agriculture sector eg fruits, flowers, medicinal herbs, vegetables, chillies etc.

Factors influencing cropping pattern →

- ① minimum support price regime
- ② state government policy &

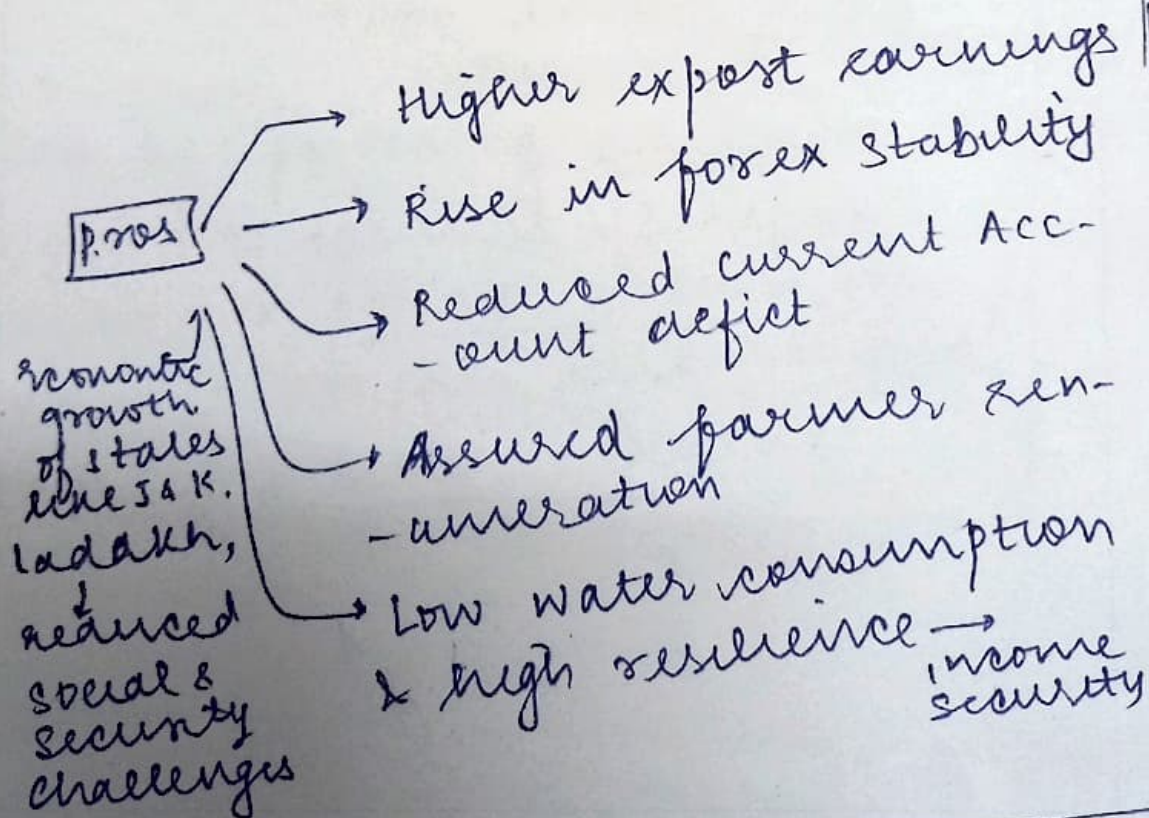
national policy, loans, technical support etc.

③ climate change related output & earning potential changes

④ decline in demand due to factors like raised earnings

⑤ water availability & climate resilience of crops

The shift in cropping pattern has its own pros & cons →

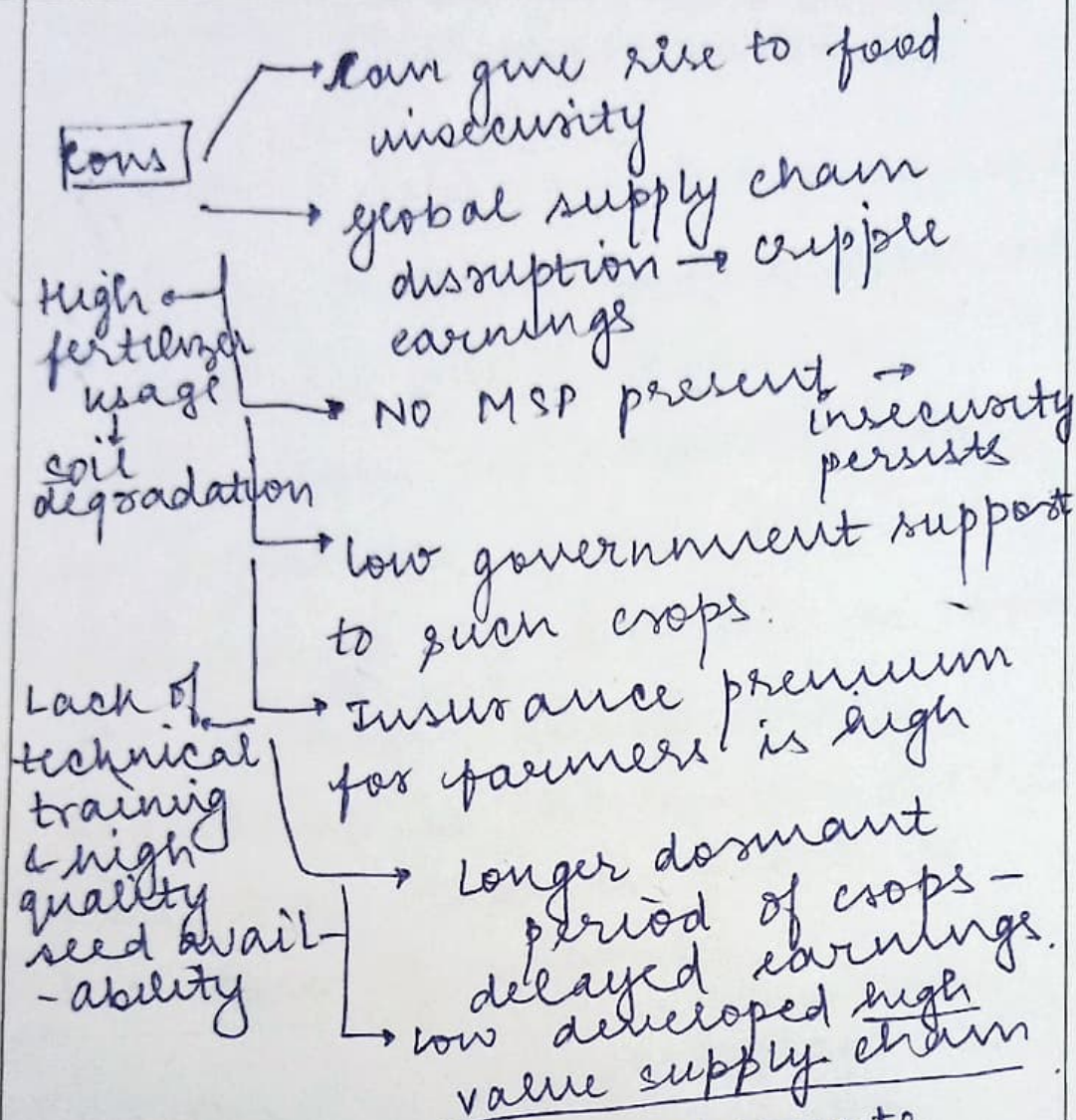




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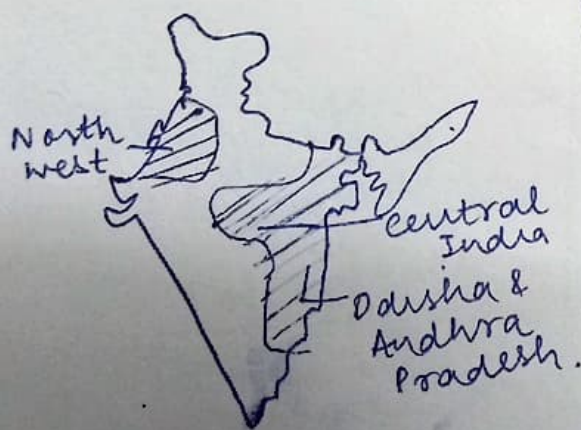
Thus, by providing adequate support to farmers & carefully creating a policy action, the government can balance food security & better earnings.



Que.9

What is a heat wave? Examine the multi-dimensional impact of heat waves on humans and the environment. (15 Marks, 250 Words)

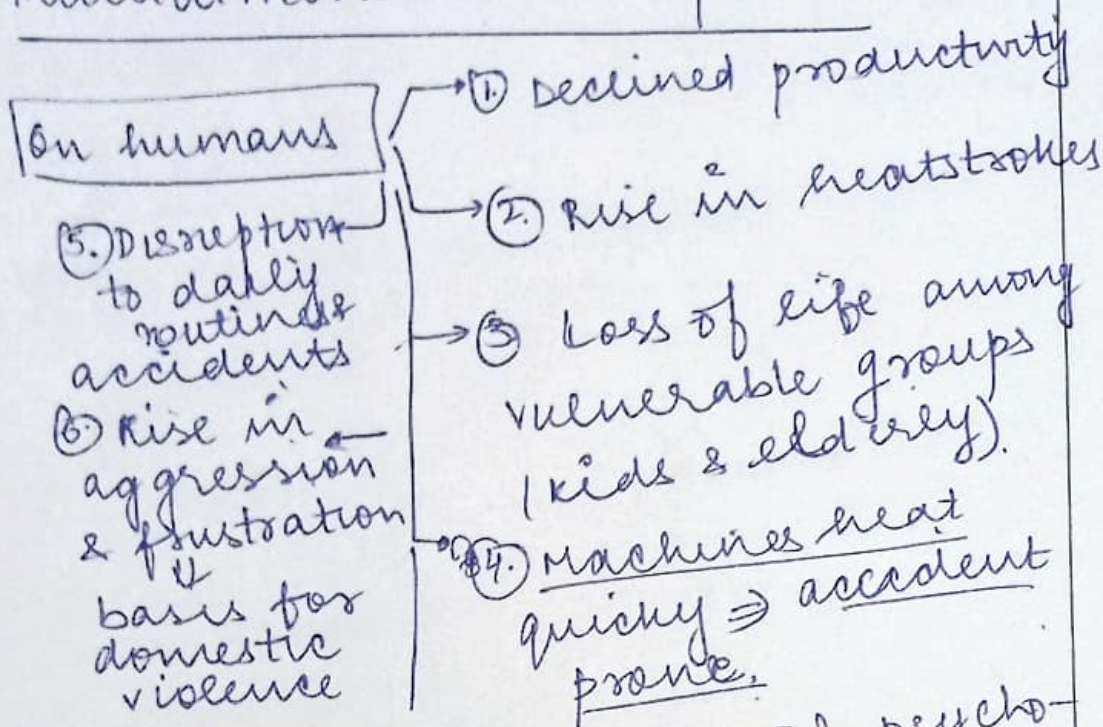
Indian Meteorological Department defines heatwave. quantitatively based on either absolute maximum temperature ($>45^{\circ}\text{C}$) or departure from normal maximum by 4.5°C to 6.4°C or more, for 2 ^{consecutive} days. Qualitatively, heatwave is the ^a temperature condition that is fatal to humans if exposed.



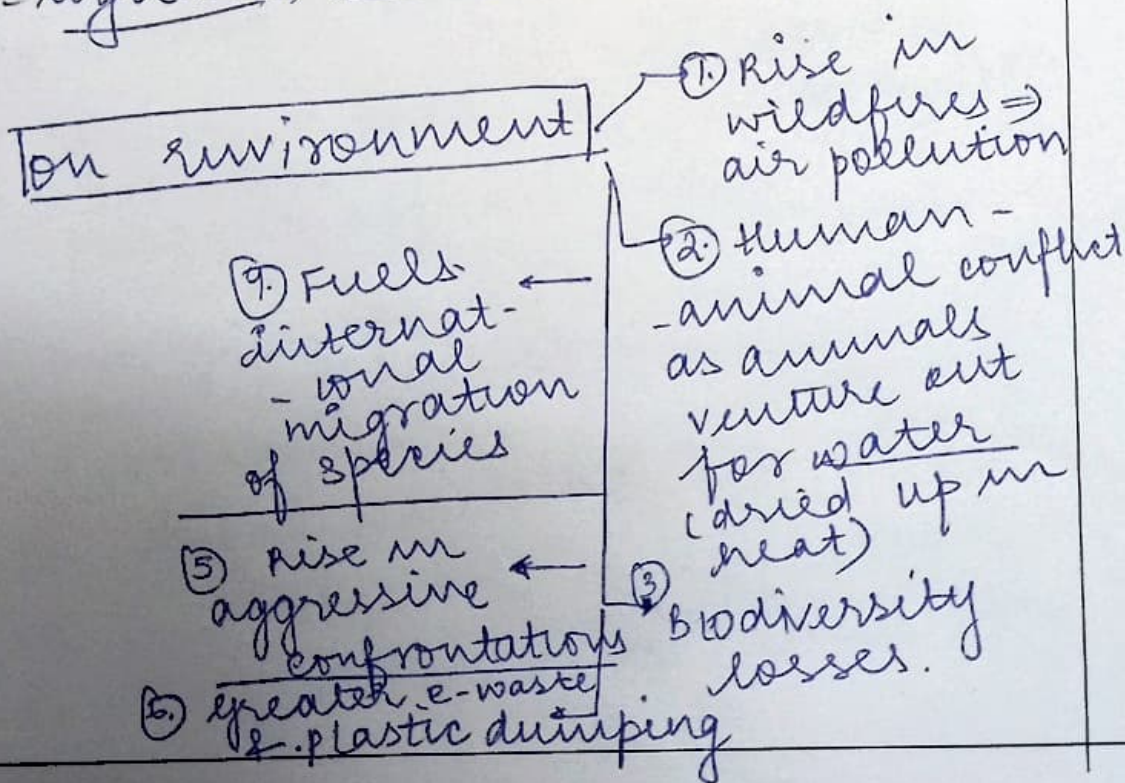
core heatwave zone.

geographical conditions
→ plains $\rightarrow >40^{\circ}\text{C}$.
→ coast $\rightarrow >37^{\circ}\text{C}$
→ hills $\rightarrow >30^{\circ}\text{C}$
IMD using color coding based warning system.

Multidimensional Impact →



Thus, humans experience social, psychological & economic impact.





Thus the impact on environment
can be in terms of degradation.
loss of life

Ways to beat the heat

Prevention

- Solar management
(eg. Silver Iodide in stratosphere)
- High Albedo surface painting
- Reduce deforestation & promote afforestation
- Provision for public shelters (cool spaces)

Prepare & response

- Stay at home
- Drink cool drinks
- Wear summer suitable clothes
- Stay hydrated

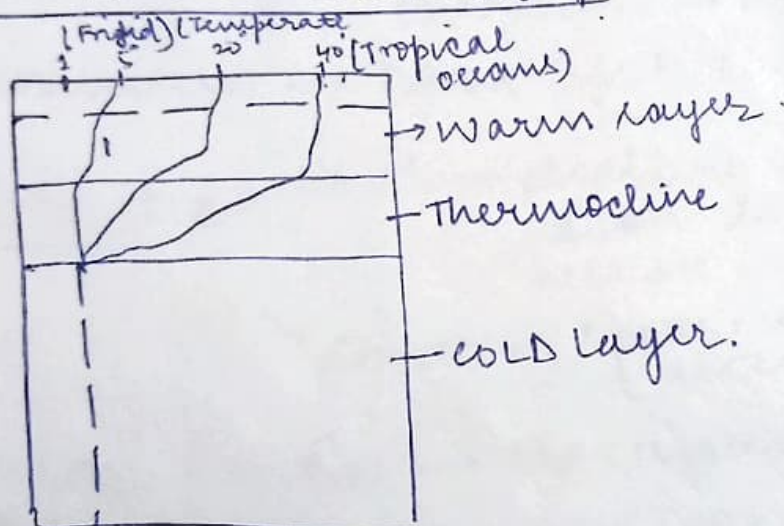
As global warming increases,
it's important to take steps
in time to prevent catastrophes

Que.10

Discuss the horizontal and vertical variations of temperature in various oceans around the world. How does this variation in temperature is being impacted by climate change? (15 Marks, 250 Words)

Ocean temperature refers to a measurement of coldness - hotness of oceans as recorded by standard instrument

Vertical distribution



Horizontal distribution

There is a general decline in temperature from equator to the poles but there are variations owing to factors like



Impact of Climate change

① Rising temperature of Arabian sea → rise in tropical cyclones.

② Rising El Niño event frequency → warming of central eastern pacific ocean; ~~along Africa & Brazil~~

③ Greater temperature around the arctic → causing ice melting → giving rise to a large high pressure system along Kara & Barents sea

④ Rising Antarctica temperature

Given the impact of ocean temperature on the coastal economies, it is important to clutch these irreversible oceanic temperature change associated with climate via urgent global collaborative action.

