

PHYSICAL GEOGRAPHY (WORLD AND INDIA)

Time Allowed: 3 hrs.

Max. Marks: 250

Q.	Marks	Instructions to Candidate
1.	4	<ul style="list-style-type: none"> There are 20 questions; all questions are compulsory. The number of marks carried by a question is indicated against it. The paper contains 3 Sections; First Section has direct questions for NCERT text books, while Second Section has questions from wide range of books and study material and the Third Section has inter-disciplinary and application based questions that require knowledge and information of other subjects as well. Answers to questions no. 1 to 5 should be in 150 words, answers to questions no. 6 to 15 should be in 200 words, whereas answers to questions no. 16 to 20 should be in 250 words. Keep the word limit indicated in the questions in mind. Answers must be written within the space provided. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.
2.	—	
3.	4	
4.	4½	
5.	½	
6.	5	
7.	—	
8.	4.5	
9.	5.5	
10.	5	
11.	5.5	
12.	4.5	
13.	5.5	
14.	—	
15.	4	
16.	5	
17.	—	
18.	6	
19.	5	
20.	4½	

73

1. Invigilator Signature

2. Invigilator Signature

Rohit
Rohit Laddha

Name MADHUMITA

Roll No. _____

Mobile No. _____

Date _____

Signature Madhumita

Dear Candidate

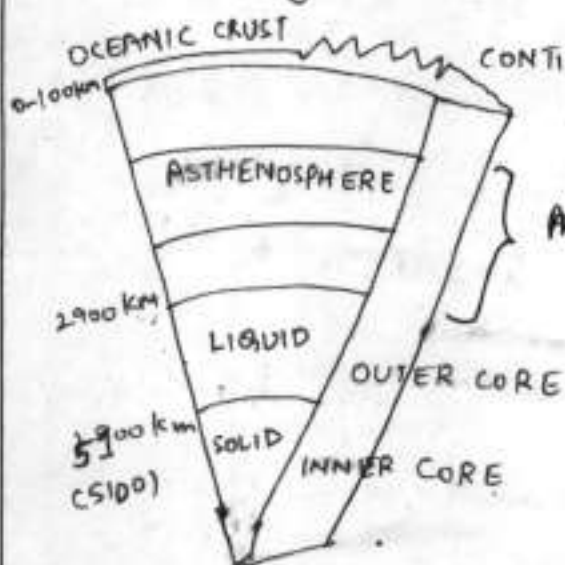
Following are the ~~weakness~~^{areas} where you need to improve

- Read Question carefully. Understand each subpart of Question.
- Statement of Question should not be answered more than one paragraph.
- Either write in bullet form or small paragraphs.
- Avoid writing answer in flow chart form.

Section - A (NCERT)

Q1. The interior of the earth can be understood only by indirect evidences as neither anyone has nor anyone can reach the interior of the earth. Elaborate. (10 Marks)

Ans! The earth's interior structure comprises several layers: Core, mantle, crust.



* VERTICAL PROFILE OF EARTH'S INTERIOR.

Discuss the limitations in using direct sources

INDIRECT EVIDENCES ARE NOT THE ONLY SOURCE TO KNOW EARTH'S INTERIOR STRUCTURE

These are infact, direct sources, also to know the interior structure of earth. For Example - (1) Study of Meteors that reach the earth as they have similar composition.

Remarks

(ii) Deep Ocean Drilling Projects also reveal the interior structure to certain extent.

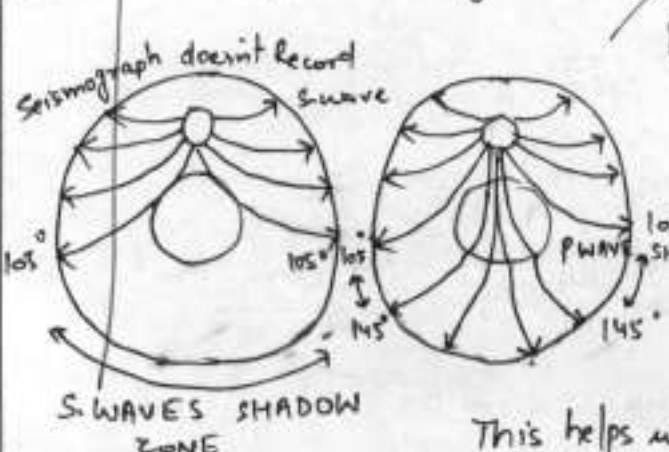
INDIRECT SOURCES

4
Also add
magnetic survey
Gravitational field
Volcanism

These include the study of 'Seismic waves' generated during earthquakes. Based on the nature of these waves, an accurate estimate of the various layers of earth's Interior can be known.

For Example, SHADOW ZONES of Prim. (P) & secondary waves (Body waves generated during earthquakes)

- (1) P waves can pass through all - Solids, liquids, gases.
- (2) S waves pass through Solids only.



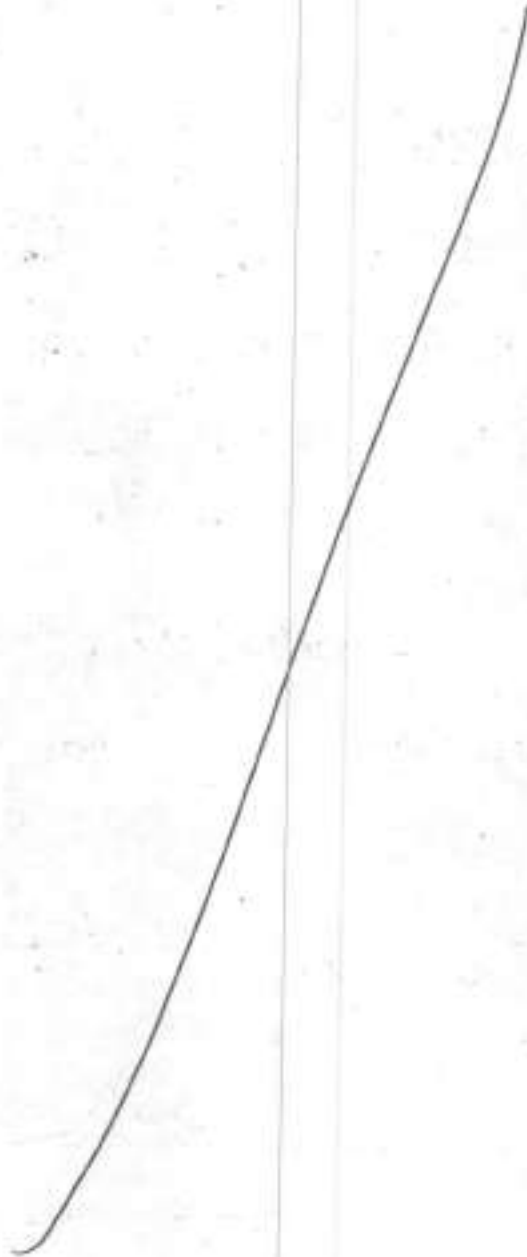
Between 105° & 145° from epicentre, both waves are not reported on seismograph. While within 105° from epicentre, both are reported.

This helps us to know the solid, liquid nature of various layers in earth's Interior.

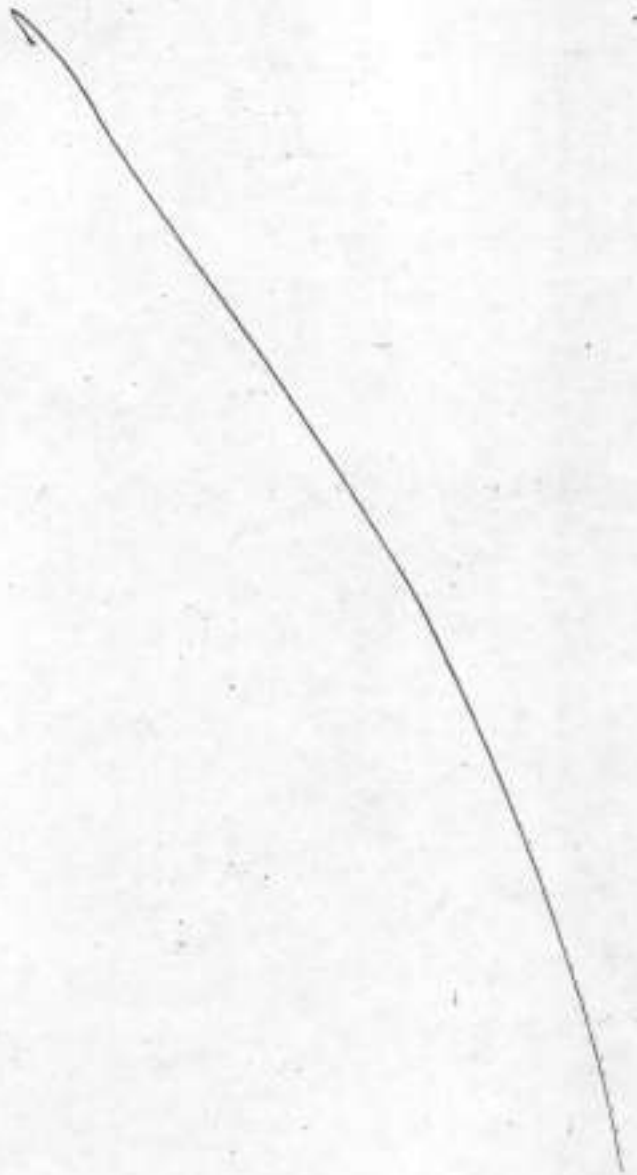
Remarks

Q2. Give a detailed account of different type of atmospheric circulations. Explain the associated mechanism and their influence on global weather and climate. (10 Marks)

Ans:



Remarks:

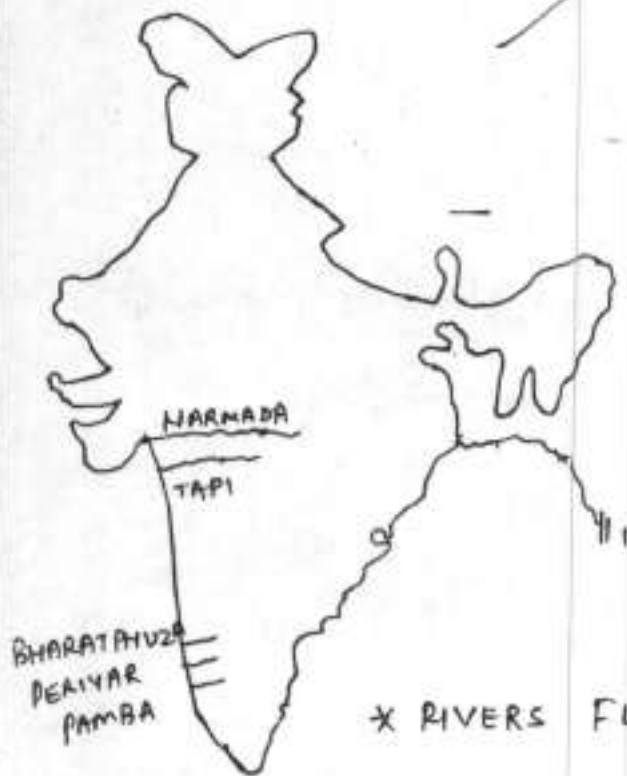


Remarks

Q3. Briefly discuss the drainage of India's west flowing rivers. Also discuss their importance in their drainage basin region. (10 Marks)

Ans: The peninsular block of India is slightly tilted to the southeast. Hence majority of rivers in the region drain in the Bay of Bengal to the east.

However, few rivers like Narmada, Tapi, Bharatpuzha, Periyar and Pamba flow to the west - in the Arabian sea.



REASONS FOR WESTERN FLOW

In case of Narmada & Tapi rivers, it is the rift valley system.

* RIVERS FLOWING TO THE WEST.

good
Also discuss important features of these rivers

Remarks

This resulted from the subsidence of the western flank of Peninsular block during the mid Pleistocene era.

Importance of their drainage Basin in the region :

4

Discuss economic & environmental significance of these rivers

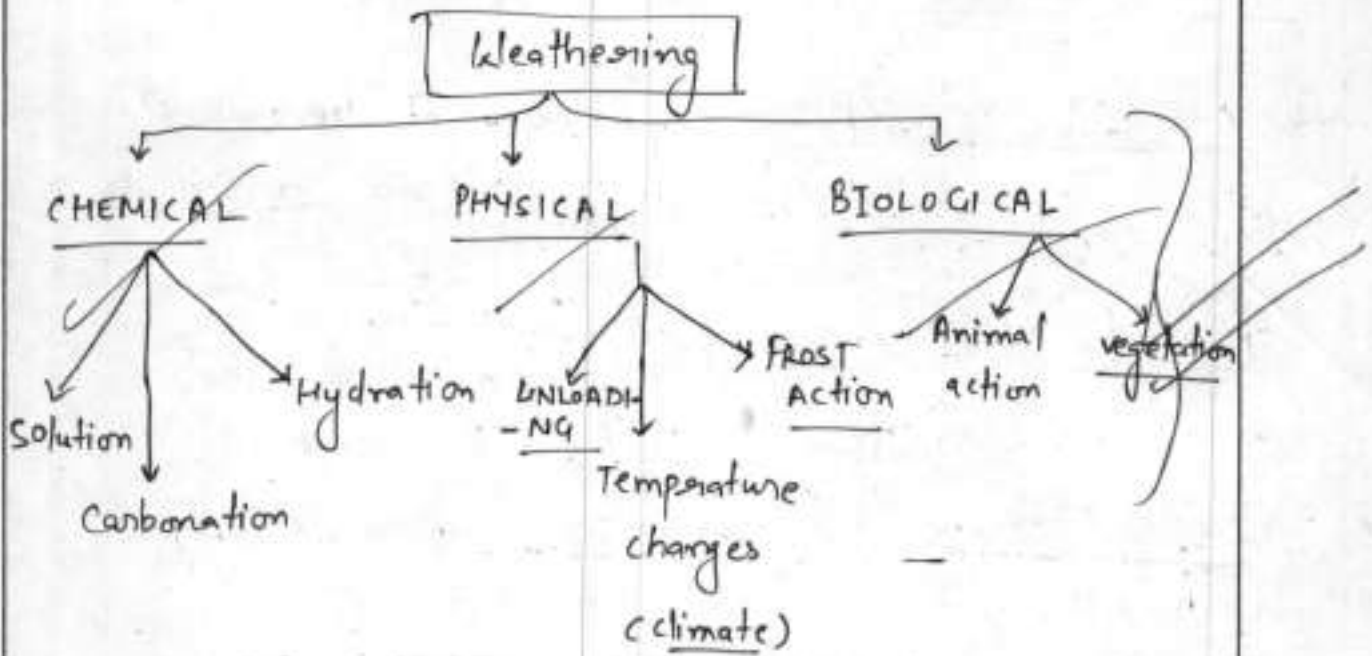
(1) Agriculture : Water from the rivers is used for irrigation purpose. For Eg. Sardar Sarovar Dam on Narmada river, caters to the irrigation needs of Rajasthan, Gujarat and MP farmers.

(2) Religious Significance : River Pamba is worshipped as goddess in Kerala. Similarly 'Namami Narmada' festival was organised in MP very recently.

Remarks

Q4. Weathering processes are conditioned by many complex geological, climatic, and topographic and vegetative factors. Explain. (10 Marks)

Ans! Weathering is the mechanical disintegration and chemical decomposition of rocks due to actions of climate and weather.



① chemical weathering: Solution; dissolution of minerals in water/other substances that decomposes the rocks. Potash dissolves in water.

Carbonation: Mineral reaction with

Remarks

Carbonates to break rocks, for Eg Feldspar.

(3) Hydration: Mixing / saturating with water to decompose rocks.

(4) Oxidation: builds up stress in rocks to break them apart.

PHYSICAL WEATHERING / Geological factors.

① Unloading and expansion: Release of pressure from the underlying material by unloading the above lying material causes vertical expansion. stress that ultimately weathers the rock.



② Thawing & freeze: Alternative thawing & freezing weakens the rock and breaks it apart.

③ TEMPERATURE changes: frequent hot & cold temp. change too weakens the rock.

BIOLOGICAL / vegetative factors: Roots of trees

exert tremendous pressure on rocks and break them apart. Burrowing animals like earthworms, termites also do the same.

Remarks

Q5. Soil is a dynamic medium in which many chemical, physical and biological activities go on constantly. Soil is a result of decay; it is also the medium for growth. Elaborate.

(10 Marks)

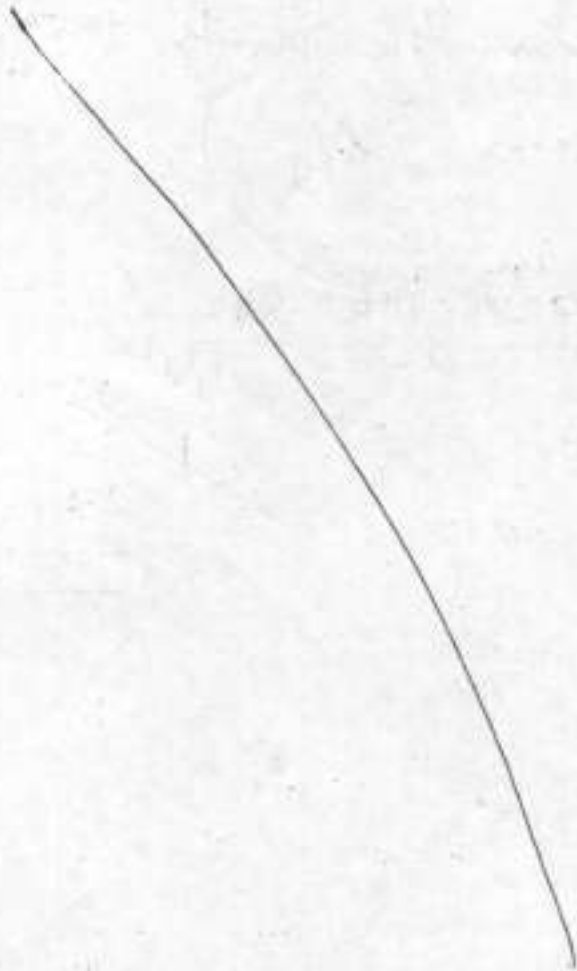
Ans! Soil is top most layer of earth's crust comprising humus, ~~water~~, ~~air~~ etc. Most of the foods that we consume & clothes we wear are derived from the plants that grow in the soil.

1/2

PHYSICAL ACTIVITY GOING IN THE SOIL

Incomplete

Remarks

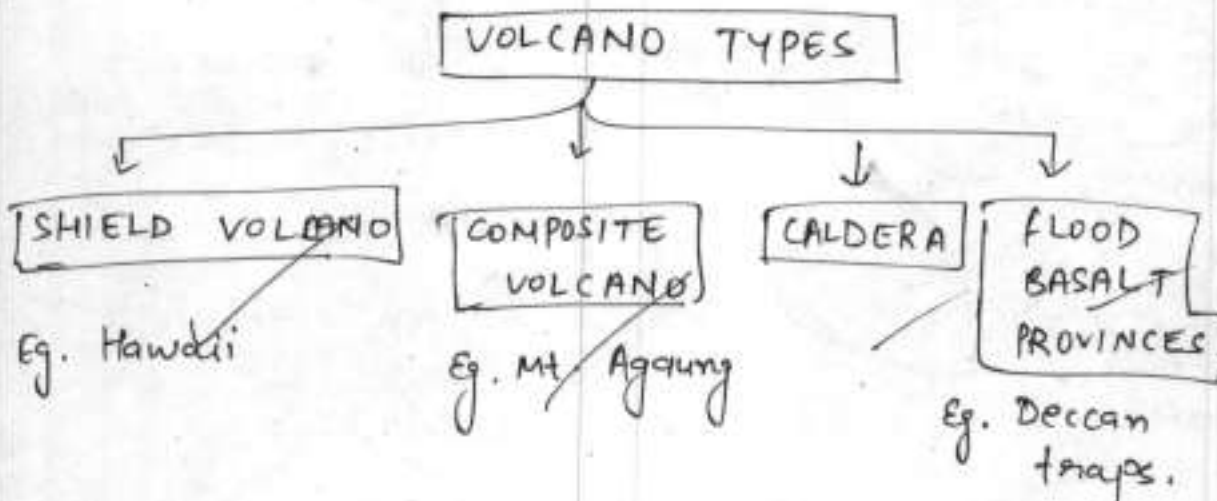


Remarks

Section - B

Q6. Volcanoes are classified on the basis of nature of eruption and the form developed at the surface. Elaborate. Also, discuss the volcanic land forms? (12.5 Marks)

Ans Volcano is any place where the molten magma from the Asthenosphere escape to the ground accompanied by volcanic dust, ashes, gases, pyroclastic material etc.



shield volcano!: The largest & least explosive. Have ^{not so} viscous lava, doesn't travel much far, appear like shield on the ground. Become explosive, if water enter their vent, (warrior's)

composite volcano!: Tend to form several layers from the viscous lava that gathers in the vent's vicinity.

Remarks

(3) Caldesig : Very explosive
 erupt like a fountain
 collapse on themselves rather than
 building a tall structure.

Add
 cinder
 cone

(4) Flood Basalt Provinces : The lava tends to travel
 thousands of square kms.

VOLCANIC LANDFORMS



* The igneous
 rocks formed
 within the earth's crust
 from magma includes:-

① Sills : Horizontal rocks

② Dykes : Vertical Rocks

③ Lacolith : An umbrella shaped intrusive
 rock

④ Batholith : An ^{inverted} umbrella shaped intrusive
 rock.


volcano releases ash, dust (volcanic),
 etc which gets deposited miles away, adds to soil fertility.

5
 Explain
 these
 more
 elaborately

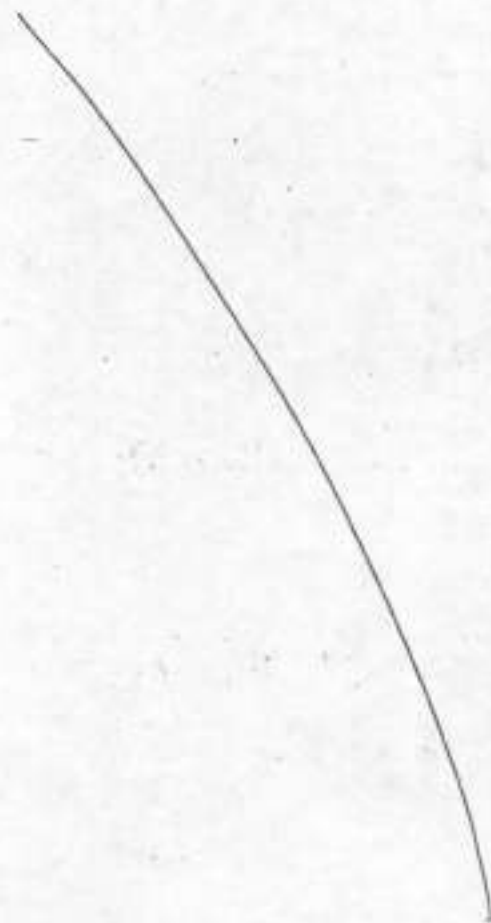
Remarks

Q7. 'It is desirable to consider relationships between climate and human settlement in different climatic regions of the world'. Illustrate. (12.5 Marks)

Ans !:



Remarks

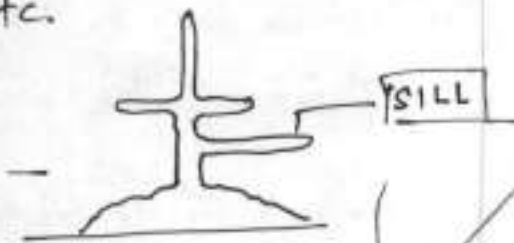


Remarks

Q8. Discuss the intrusive landform of igneous intrusion in volcanic region while enumerating their examples. (12.5 Marks)

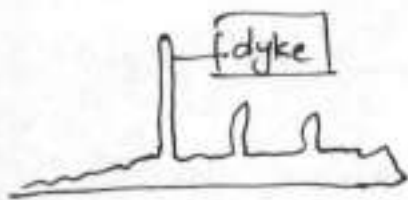
Ans: Igneous rocks are formed from the magma that is released on account of tectonic activity. Upon cooling & solidification, magma becomes crystalline rock. This cooling can take place inside earth's crust or outside it.

Intrusive landforms ∴ formed inside the earth's crust. Examples. Sills, dykes, Batholith, Lafolith etc.



SILL

It freezes in a horizontal shape within the crust.

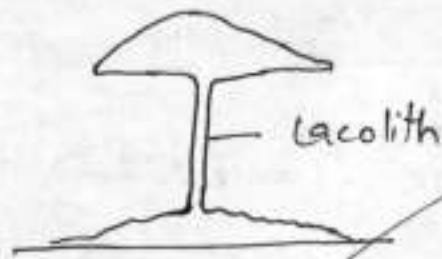


dyke

magma solidifies within the crust in vertical chambers.

Remarks

③ Lacolith

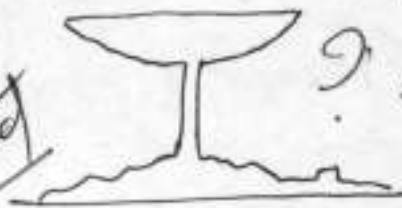


↳ magma solidifies within the earth's crust in Convex type.

↳ the shape of an Umbrella or

④ Batholith

It is same shaped



The magma solidified in the shape of an inverted Umbrella within the earth's crust.

Extensive landforms : When the magma comes out of the vent and then solidifies above the earth's crust, it creates extensive landforms like

Flood Basalt provinces - Deccan traps in Peninsular India

- lakes like Caldera in the form of the wide vent formed after collapsing on itself.

Remarks

Q9. What happens in the asthenosphere plays a powerful role in life on the surface. Explain. (12.5 Marks)

Ans The earth's interior comprises several layers. - core, mantle, Crust. Within the mantle, there is a semi-molten layer called Asthenosphere. This layer contains molten.

Magma



According to Convective Current theory

by Arthur Holmes, the layer is constantly in motion due to radio activity & residual heat-generating currents of magma.

POWERFUL ROLE IN LIFE ON SURFACE

During Diverging activity in Plates (Lithospheric plates moving above the Asthenosphere), the molten magma escapes to the surface / Crust - this forms "MID OCEANIC RIDGES".



largest system of interconnected

Remarks

mountain chain across all the oceans in the world, which causes the sea floor to spread.

② Earthquakes : Since the asthenosphere supplies the base for lithospheric plates to move, it also is the reason for tectonic uplift of Himalayas (Indian plate colliding with Eurasian plate)

and the consequent 'DEVASTATING EARTHQUAKES'

in Himalayan states like J&K, Uttarakhand, Himalayas and north east. (Loss of life, property, infrastructure, loss of economy etc)

③ Volcanic eruptions : too are an implication of the mobile asthenospheres & Eruptions are accompanied by ash, volcanic dust, which causes migration of people from the Area.

But the eruptions also release Aerosols which cool the earth's atmosphere by deflecting the Sun's rays.

Hence, Asthenosphere activity has wide ranging impact on life on earth's surface

Remarks

Discuss their importance for life on earth

52

Q10. Discuss the genesis and impact of western disturbances and highlight its role in influencing the India's climate and agriculture during winters. (12.5 Marks)

Ans! Western disturbances are cyclonic circulations that travel to India in the winter, in its North and Northwestern plains.

Cyclonic : These are cold winds generated over the Mediterranean sea. They travel to India under the influence of Westerly winds during winter season.

Explain how they are generated

Role in Influencing India's climate

Western disturbance arrival to the northern plains is marked by rise in Night temperature in the region.

They bring rains to the North & Northwest India. Since they are quite mobile, it rains as far as the eastern extent of Gangetic plains.

Also discuss snowfall

Remarks

Q11. Discuss the importance of oceans and also mention some of the anthropogenic activities and human activities that had severely affected the marine life of the oceans. (12.5 Marks)

Ans! Oceans occupy around 71% of the earth's surface. There are several major oceans - Pacific, Atlantic, Antarctic, Arctic, Indian Ocean etc.

Importance of oceans

① Economic Importance :- (a) Extraction of minerals

* Petroleum extraction, for Eg. Bombay High for India

* Polymetallic nodules like Copper, Molybdenum etc found in oceans - crucial to Industrial manufac.

② Trade : for Eg. 80% of the oil trade of the world transits through Indian ocean choke points - strait of Hormuz, Malacca, Bab-al-Mandeb.

③ Livelihood :- Fishing is a major occupation in coastal states of India. Prawn culture, crabs

Remarks

help earn livelihood for millions across the world. Japan is totally dependent on ocean for its economy with majority of its population involved in fishing, sea weed farming etc.

(D) Fertilizers : Sea weeds, sea grass etc can provide good fertilizers for organic agriculture after being processed.

(E) Tourism : Cruise tourism is also a major economic activity.

HUMAN ACTIVITIES DETRIMENTAL TO MARINE LIFE

(1) OIL SPILLS : Collision of oil carrying ships. Eg. ENCORE OIL SPILL remained there for months, choked oxygen supply to marine living beings, killing them or causing migration.

(2) BOTTOM TRAWLING : Used for fishing, it destroys the corals also as by catch.

(3) Coral bleaching :- Global warming of oceans by release of pollutants causes the corals to end symbiosis with algae-shoreline reefs

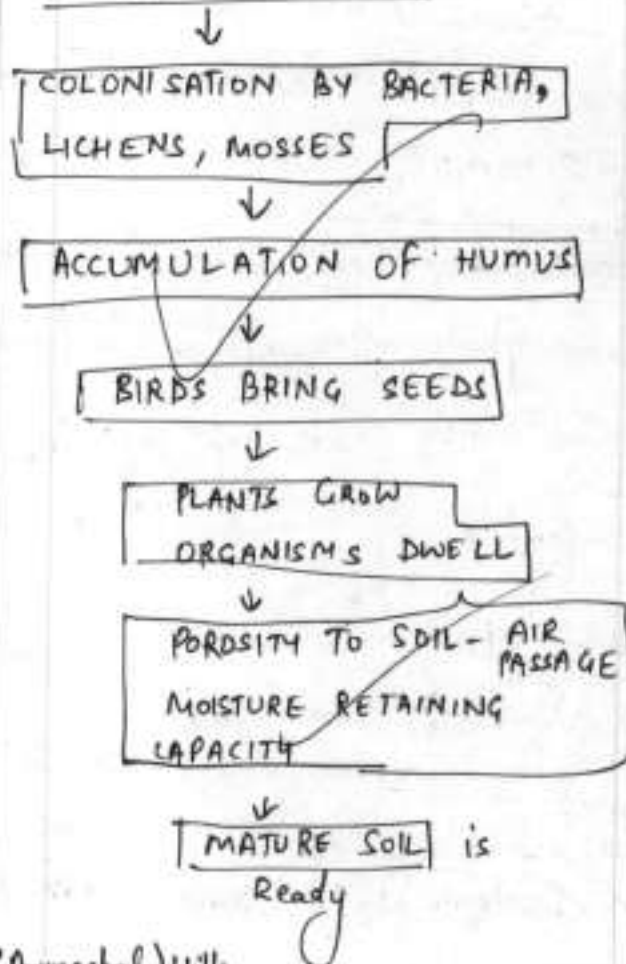
(4) GREAT PACIFIC GARBAGE PATCH : too choked O₂ supply killing marine life.

Add Pollution
Remarks
acidification
→ overfishing

Q12. Discuss the importance of soil forming factors in determining the soil types in different parts of India. Elaborate with suitable examples. (12.5 Marks)

Ans: Soil is the upper most layer on the earth's crust. It comprises humus, water, air etc. It provides the medium for plants to grow and thus ensure food security to living beings.

SOIL FORMATION PROCESS: WEATHERED MANTLE



Factors affecting soil formation in different parts of India

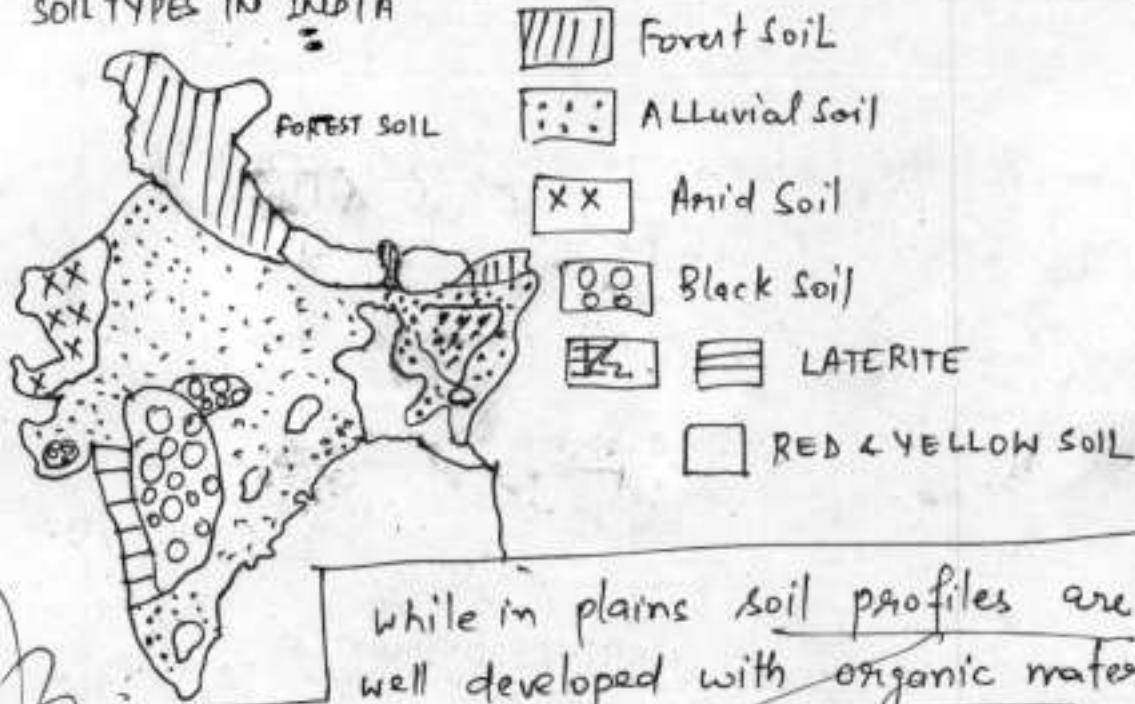
① Topography:

Depth of the weathering mantle → J&K, North East (Assam) Hills.

→ Soils have shallow profiles, low organic content, acidic in nature

Remarks

SOIL TYPES IN INDIA



while in plains soil profiles are well developed with organic material

Rivers deposits fertile alluvium in Gangetic plains, Bihar, UP, Bengal, Narrow Corridor of Gujarat & Rajasthan

Biological/Chemical activity: Laterite soils formed in the western ghats area of high temperature, high rainfall,

bacterial action eats up the humus, rendering the soil infertile.

for the formation of Khadar (alluvium soil) young - poorly developed profiles.

Climate: Intense rains in the peninsular plateau cause leaching of silica, lime from laterite soils in Western ghats, cause infertility.

Remarks

Q13. Oceans are suffocating as dead zones have been quadrupled in size since 1950s. In this context, discuss the causes and effects of Ocean Dead Zones on marine ecosystem.

(12.5 Marks)

Ans: Dead zones in Oceans refers to the region where Oxygen supply has depleted considerably that either no or very low number of aquatic animals survive there -

CAUSES OF DEAD ZONE FORMATION IN OCEANS ↓ EFFECTS

- ① Release of pollutants in the ocean.
- ② Release of Nitrogen, Phosphorus, Potassium remains from agricultural fields via rivers - "Eutrophication"
i.e. Algal boom in oceans - causing shortage of oxygen supply & excessive CO_2 release - killing marine life.
- ③ Release of oil spills ∵ oil continues to float over ocean surface being lighter in density - killing marine life by choking oxygen supply.

Remarks

④ GREAT PACIFIC GARBAGE PATCH

predominantly the floating garbage comprises plastics. Plastics cut off oxygen supply to the marine life.

Also discuss the natural causes behind the sea death zone straying of whales, their being washed dead are some of the reminders to humanity to end or regulate the 'toxic releases' into oceans.

Impact of DEAD ZONES ON Humans

Sustainable development goals (SDG)

52 also include taking care of LIFE BELOW WATER

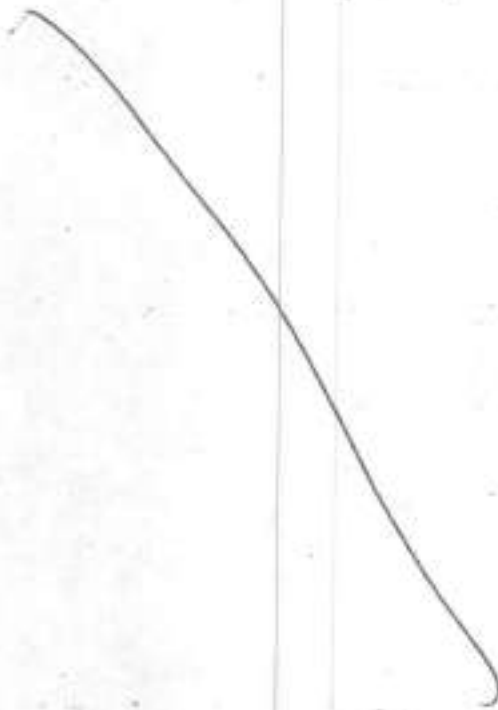
∴ SDG-14. The reason is -

- ① depleted fish stocks - fishermen livelihood in danger
- ② food security of Island nations like Japan - a fish economy in danger.
- ③ Ecological Balance gets disturbed.

Remarks

Q14. Gulf Dust storm is considered as one of the contributing factors (apart from stubble burning) behind the smog that had smothered Delhi and its neighborhood, as per Scientific Assessment of Delhi Winter Air Quality Crisis Report by SAFAR. Elaborate on the factors that increase dust storm and analyze its impacts? (12.5 Marks)

Ans :-



Remarks



Remarks

Q15. Rising sea level will have an adverse impact on flora and fauna particularly the small island countries. In this context, discuss what are the remedial measures required to address this issue. (12.5 Marks)

Ans! According to IPCC's 5th report, the global ocean average temperature has risen by 0.85°C between 1880 and 2012. Rising sea levels are direct result of this temperature rise.

Breaking up of LARSEN ICE shelf from Antarctica in 2017 shall too contribute to sea level rise.

Impact on flora & fauna : Rise in sea level shall cause 'CORAL BLEACHING' - As corals would not get sunlight if submerged beyond certain depth. Algae - Zooxanthellae won't photosynthesize, leading to expulsion by corals and their eventual death.

Corals provide shelter to numerous sea creatures. They too shall suffer.

Statement of the Question need not be explained more than one paragraph

Remarks

IMPACT ON ISLAND NATIONS

- ① Nations like Bangladesh, Fiji, Vanuatu, Maldives are facing the threat of submergence, owing to sea level rise.
- ② Mass migrations → Refugee crisis → BREXIT like situation.
- ③ Scarcity of land in island → Unemployment → Crimes → civil wars.

Remedial measures to address the issue

- ① Climate vulnerable forum by Island nations to shift to 100% Renewable energy ^{by 2050} needs to be supported financially by World Bank, New development bank.
- ② Technology transfers by developed countries to poor island nations to mitigate green house gas release, Replace fossils by renewables.
- ③ PARIS CLIMATE DEAL (2015) → with aim to restrict the temperature rise to 2°C by 2100 needs to followed in letter & spirit.
- ④ Kyoto protocol eliminating CFC, HCFC use etc needs to be signed & ratified by all.

Remarks

Section - C (Inter-disciplinary and Applied Question)

Q16. The oceans influence the weather from local to global scales; while changes in climate can fundamentally alter many properties of the oceans. Elaborate. (15 Marks)

Ans: Oceans account for nearly 71% of the earth's surface area.

Influence of Ocean on weather

① North Atlantic drift keeps the ports of (ocean current)

Norway ice free - & also provides relief from chilly conditions. amid winter (too harsh)

② 15° - 30° N & S of equator is the Area of trade wind deserts because of cold ocean currents on the western side of continents.

③ Meeting of the Cold & warm ocean currents bring fog at the meeting place. Eg. foggy Area off Newfoundland Coast.

how ocean influence the climate of global give example

Remarks

④ Monsoon in India too are a result of differential heating of the land & the ocean. During Summer, the cold ocean has high pressure - the landmass of India has low pressure. The monsoon winds flow from south of equator to fill in the low pressure area. Hence the "GREAT MONSOON PHENOMENON" in entire Southeast Asia.

⑤ El-Nino in the eastern equatorial Pacific as a result of replacement of cold Peruvian current by the warm current weakens monsoons, causes droughts in India, Australia while bringing intense rains in South America.

ALTERATION OF OCEAN PROPERTIES BY CHANGE IN CLIMATE

① Global climate changes → Rise in Average temperature of oceans.

Remarks

↓

CORALS DIE, OXYGEN DEPLETION CAUSE
LARGE SCALE FISH MORTALITY.

② GLOBAL CLIMATE CHANGE

5

↓

MELTING OF GLACIERS
(LARCEN C BROKE OFF ANTARCTICA)

↓

OCEAN AREA TO INCREASE NOW.
(geographical expanse ↑)

write either
in
bullet form
or
paragraph
form

③ Global climate change

↓

temperature rise

↓

marine life not accustomed to extreme
temperature

↓

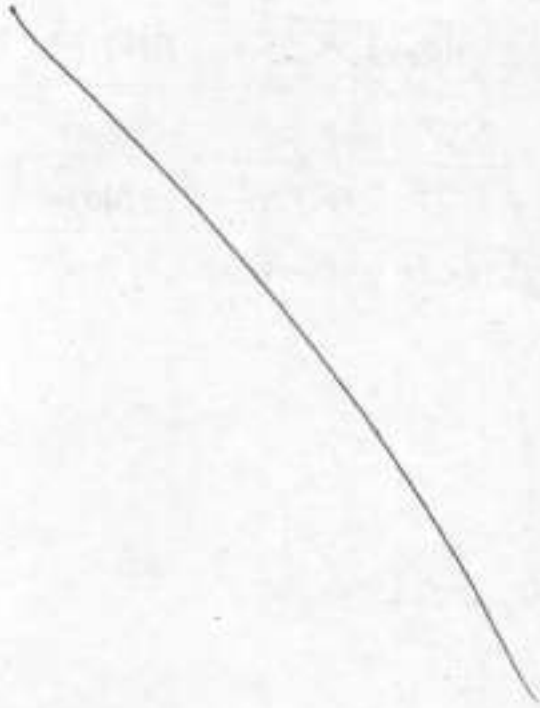
Large scale marine mortality

↓

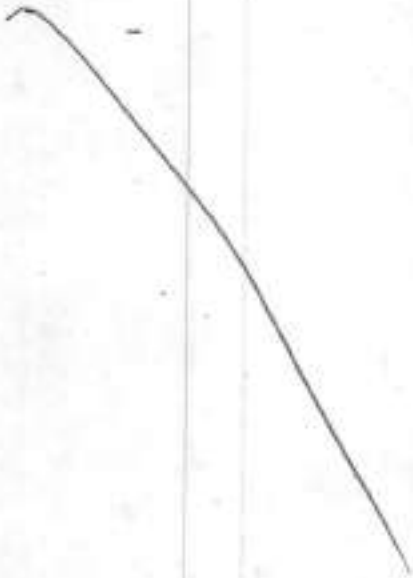
Corals shall bleach, eventually die.
Aquatic life shall undergo huge change.

Q17. Global climate change has already had observable effects on the environment. Glaciers have shrunk, ice on rivers and lakes is breaking up earlier, plant and animal ranges have shifted and trees are flowering sooner. In light of this, discuss how climate change affects oceans? (15 Marks)

Ans:-



Remarks



Remarks

--	--

Remarks

Q18. Inter-linking of rivers will address economic, political and social issues, but pose threat to the ecological and environmental diversity. Comment and mention some alternative strategies in this regard. (15 Marks)

Ans: India is country that simultaneously faces droughts and floods. Around 40 million hectares of land mass is vulnerable to floods while 68% of the area is prone to droughts.

In this situation, River-Interlinking to transfer water from surplus regions to deficit region is of utility. Recently Ken-Betwa inter-linking was affected to provide irrigation facilities to the perennially drought suffering 'BUNDELKHAND REGION'.

Discuss
economic
+ social
benefit



River-Interlinking to
Cause → threat to ecologic-
cal & environmental
diversity

AREA SUFFERING FREQUENT DROUGHTS.

Remarks

① Submergence of the Panna national park in Ken-Betwa linking → Loss of habitat for wildlife.

② Land acquisition → Displacement of people → forced migrations → increase in slums → Urban population → more pollution in the air, water, soil mediums.

③ River interlinking As solution to

Economic issues: irrigation facility ensures
 good harvest → food security to nation
 → Good income to farmers.
 → food grain exports.

Social issues → NCRB 2015 - 3,00,000 farmers committed suicide owing to crop failure. Lack of access to irrigation is a factor. Families break up, women suffer 'insanitary conditions' during droughts. children die. River-interlinking solves water issues & hence relief

Remarks

to all

Political issues

- lack of access to irrigation

↓
crop failure

↓
inability to repay debt

↓
notebank politics by
leaders in Name
of "Loan waivers"

It will
promote
Cooperation
between
states

River-interlinking solves these political issues to certain extent.

ALTERNATIVE STRATEGIES IN THIS REGARD

6

① Focus on Basin approach → River Basin to be adopted as ~~area~~ unit of management.

② ~~Canal~~ → preventing exploitation by sand mafia etc
→ addressing pollution in the rivers.

→ Building Canals in vicinity, etc can be tried.

② Underground Canals on lines of metro trains to do away with land acquisition. - avoiding loss to farmers & farms - also avoiding people displaced. Eg. SABNI in Saurashtra from Narmada River

Also discuss
national
waterways
as
alternatives

Remarks

Q19. Discuss the disadvantages for those countries that lack access to international waters.
Examine in context to Central Asia. (15 Marks)

Ans: Central Asian republics include Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan etc. countries like Nepal also fall in the same category.

Disadvantages for the countries lacking access to International waters

① Central Asian republics are landlocked.

either write in bullet form or Paragraph form

↓
Have huge Resources - oil, minerals etc

↓
India wants to buy Resources

↓
Pakistan in the way from Land route
'denies access

↓
Despite Resources, they can't sell ^{Resources} or

purchase technology from India

↓
Net result ⇒ INDUSTRIAL UNDERDEVELOPMENT

Remarks

② High Cost of Trade via the Land routes

↓

Limit use maritime - cost effective mode of transport.

↓

Cost of production & transport vis-a-vis maritime nations - high - suffer current account deficits

Discuss in the context of Central Asia

③ Landlocked nations → away from the moderating influence of the sea → extremes of temperature → difficult for work force to be effective in extreme climatic conditions.

④ political dependence / bargaining chip for power games

Nepal → lacks access to international waters.

→ Uses Indian ports for Trade

↓

Now China developing 'Kyupkyu Rail link'
to enable Nepal to access Chinese ports

↓

India - feeling encircled & betrayed by
old friend & strategic ally.

↓

Political tensions heighten between
India & Nepal.

⑤ Lack of access to petroleum resources, Polymetallic
nodules - copper, molybdenum - crucial to economy
(manufacturing sector)

⑥ Overdependence on wheat & paddy - crop
failure → irrecoverable loss to economy. In
absence of international water access / ocean
access - limited fishing, aquatic economy develop-
ment or none at all.

India is fortunate to have it all and hence
the 6th largest economy tag in 2018 ahead of France.

Remarks

5
Discuss
in the
Context
of
Central
Asia


Q20. Why Bay of Bengal region is regularly affected by tropical cyclones? Examine why despite the regular occurrence, the region lacks the advance planning and institutional infrastructure. (15 Marks)

Ans: Bay of Bengal in the Indian Ocean is regularly affected by violent low pressure storms in the October-November months.



Conditions for Cyclone formation in Bay of Bengal are found ideal, hence Recurrent cyclones.

- ① Here, large sea surface temperature with 27°C and above is prevalent in $10^{\circ}-20^{\circ}\text{N}$ latitude
- ② Low level cyclonic circulation
- ③ Presence of Coriolis force
- ④ Low vertical disturbance.

x  8% of total Indian Area vulnerable to cyclones

Remarks

LACK OF ADVANCE PLANNING AND

INSTITUTIONAL INFRASTRUCTURE in the

region. is now being addressed by the nations in the region.

① INSAT 3DR released by ISRO in 2017 gives accurate position of low level cyclonic formation in advance. It enables early warning & evacuation the coastal regions of India.

② RIMES :: Regional Integrated multihazard warning information system developed by in the aftermath of 2004 Tsunami has all the littoral Indian ocean states as members. It also enabled early warning & quick response in case of disasters.

③ Mock Drills : Are organised by UN institutions from time to time to prepare people for rapid response in face of Calamity.

Insufficient
and the
demand
of
Questions

Remarks

Discuss
why
advance
planning
is not
there

④ National Disaster response force is deployed in advance in Coastal Areas, vulnerable to cyclones in the expected season of cyclone strike. Mock drills are organised (Hyderabad, 2017) involving local bodies, school students, NGOs etc

fail to understand the demand of Ques

⑤ National Disaster management authority at national level & state Disaster mgt authority are the institutions developed to ensure effective coordination of Disaster relief & rescue.

4/5

Despite all the planning & institutional infrastructure, the sheer magnitude of people living in the areas, their complete dependence on the ocean for survival and the limited resources available with governments make cyclones - a devastating experience for people in the region. Technological advancements with financial resources holds the key to - "Cyclone Preparedness".

$$\frac{120}{25} \quad \frac{160}{20} \text{ ①}$$

$$90 \quad \frac{25}{9} -$$

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