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GENERAL STUDIES (TEST CODE : 1452)

Name of Candidate	NAUSHEEN		
Medium Eng./Hindi	ENGLISH	Registration Number	734212
Center	ONLINE	Date	2/12/2019

INDEX TABLE		
Q. No.	Maximum Marks	Marks Obtained
1	12.5	
2	12.5	
3	12.5	
4	12.5	
5	12.5	
6	12.5	
7	12.5	
8	12.5	
9	12.5	
10	12.5	
11	12.5	
12	12.5	
13	12.5	
14	12.5	
15	12.5	
16	12.5	
17	12.5	
18	12.5	
19	12.5	
20	12.5	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न–पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are **TWENTY** questions printed in **ENGLISH & HINDI**
   इसमें बीस प्रश्न है अंग्रेजी और हिन्दी में छपे हैं।
3. **All questions are compulsory.**
   सभी प्रश्न अनिवार्य है।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए है।
5. 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 medium other that the authorized one.
   प्रश्नों के उत्तर उसी माध्यम में लिखे जाने चाहिए जिसका उल्लेख आपके प्रवेश पत्र में किया गया है और उस माध्यम का स्पष्ट उल्लेख प्रश्न–सह–उत्तर (क्यूसीए) पुस्तिका के मुख्य पृष्ठ पर अंकित निर्दिष्ट स्थान पर किया जाना चाहिए। उल्लिखित माध्यम के अतिरिक्त अन्य किसी माध्यम में लिए गए उत्तर पर कोई अंक नहीं मिलेंगे।
6. Word limit in questions, if specified, should be adhered to.
   प्रश्नों में शब्द सीमा, जहाँ विनिर्दिष्ट है, का अनुसरण किया जाना चाहिए।
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.
   उत्तर पुस्तिका में खाली छोड़ा हुआ पृष्ठ या उसके अंश को स्पष्ट रूप से काटा जाना चाहिए।

EVALUATION INDICATORS

1. Contextual Competence
2. Content Competence
3. Language Competence
4. Introduction Competence
5. Structure - Presentation Competence
6. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

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Answer all the questions in NOT MORE THAN 200 WORDS each. Content of the answers is more important than its length. All questions carry equal marks.
12.5X20=250

1. Explain what a watershed is. What do you understand by watershed management? Giving suitable examples, discuss its significance in water resource management in India.

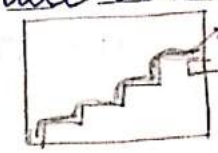
जल-संभर (वाटरशेड) की व्याख्या कीजिए। जल-संभर प्रबंधन से आप क्या समझते हैं? उपयुक्त उदाहरण देते हुए, भारत में जल संसाधन प्रबंधन में इसके महत्व की चर्चा कीजिए।

(1) 'Watershed' refers to the area drained by rainwater or rivers. Watershed Management refers to the practices that can be undertaken for proper & careful utilisation of water resources :-

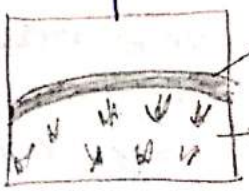
Significance in water resource management :-

(1) Water Conservation : According to NITI Aayog Report 2019, 600 million people in India live in water stressed region. Thus, there is an urgent need to conserve water resources. Methods that can be used :-

(i) Terrace Farming :→ Constructing terraces prevents rapid run off.

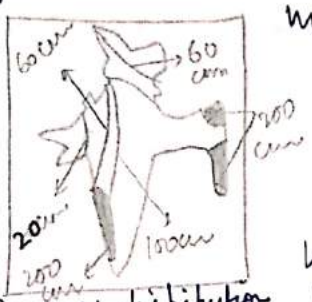


(ii) Contour bunding :- It refers to the construction of contour 'bunds' across the fields to prevent water from leaving the cropped area.



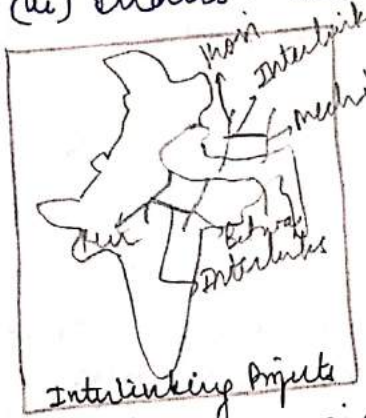
(2) Proper Water Distribution : Monsoon in India has wide regional variations.

While some places like N-E India & Western Ghats receive 200 cm of rainfall; areas like Rajasthan only 20 cm. Therefore, rain deficit areas must be supplied water from rain surplus areas. For this, methods that can be used are :-



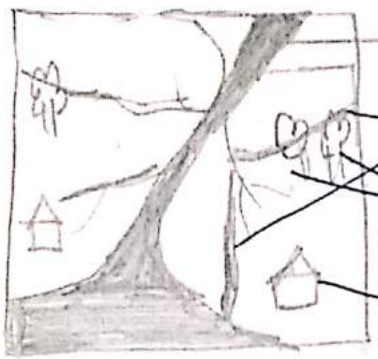
Rainfall distribution

(1) River Interlinking Projects :- Government has taken several river interlinking projects in India that can be used for proper management of water resources. Some of them are :-
(i) Ken - Betwa (ii) Kosi - Mechi (proposed)
(iii) Indus - Ganga.



Interlinking Projects

(3) Disaster Management
In order to prevent areas receiving surplus rainfall from getting flooded; water planners can transfer water from surplus regions to areas where there is a deficit / drought areas.
→ It can also support agricultural activities in the area concerned.
→ Can be utilised for household purposes.

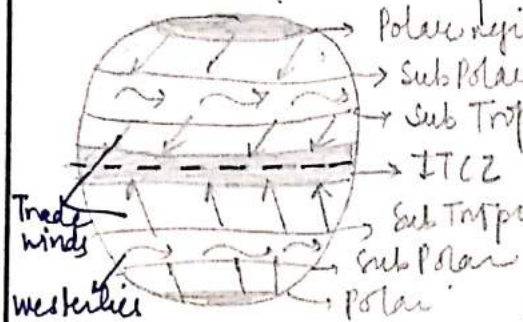


Thus, water shed management has huge significance in our country for proper management of water resources of our country.

2. What is inter-tropical convergence zone? How does it influence the Indian monsoon?

अंतः-उष्णकटिबंधीय अभिसरण क्षेत्र क्या है? यह भारतीय मानसून को किस प्रकार प्रभावित करता है?

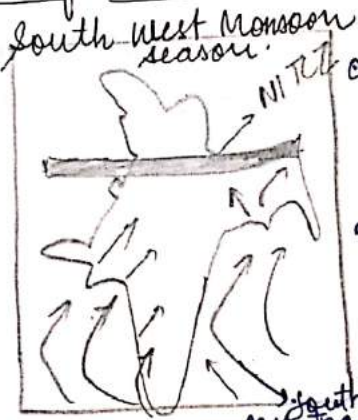
(2) Inter Tropical Convergence zone refers to the low pressure area that develops due to intense heating from the sun. This zone has great impact on the monsoon season of India.:-



Pressure belts of Earth.

Due to the formation of low pressure zone near the equator, a system of wind sets in covering the whole of the earth.

Influence on Indian Monsoon:-



- During late summers, the Inter Tropical Convergence Zone forms at the bottom of Himalayan region known as North Inter Tropical Convergence Zone (NITCZ)
- This low pressure zone attract South East Trade winds & it turns due to Coriolis force

This sets in South West Monsoon season during which monsoon advances & brings rain to most parts of India.

⊙ Almost 3/4th of total rainfall in the country is received during this season.

⊙ Supports agricultural activities.

North East Monsoon season / Retreating Monsoon

⊙ After late October, this low pressure zone begins to withdraw from Indian subcontinent due to heating of Tropic of Capricorn.

⊙ This low pressure zone south of India attracts N-E trade winds which brings rainfall to the Tamil Nadu coast of India which receives very during S-W Monsoon seasons.

Therefore, Inter Tropical Convergence zone plays a huge role in Monsoon season of India which supports almost all the agricultural activities in India. It also help those farmers who cannot afford

irrigation facilities for their fields.

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3. Highlight the reasons behind high concentration of Jute mills in West Bengal. Also give an account of the problems that the jute industry of India is confronted with.

पश्चिम बंगाल में जूट मिलों के अति संकेंद्रण हेतु उत्तरदायी कारणों पर प्रकाश डालिए। साथ ही, भारतीय जूट उद्योग के समक्ष व्याप्त समस्याओं का भी विवरण दीजिए।

(3) Jute mills are amongst the oldest industries of our country that are present ~~from~~ since the medieval times. Reasons for its high concentration in West Bengal are :-

(i) Availability of Raw Material :- West Bengal is one of the largest producer of Jute in India & thus can be easily made available to the Jute mills of the region.

(ii) Availability of labour :→ West Bengal receives migrant labourers from U.P, Bihar and local labourers from West Bengal itself.

(iii) Capital :- During colonial times, rich landlords of the region provided capital to jute mills of the area. Now, due to expansion of banking institutions all over the region capital can be made readily available to the owners.

(iv) Market :→ West Bengal has well developed port facility at Kolkata which can transfer jute to other areas. Moreover, local as well as

markets in other adjacent states also provide them incentive.

Government Policies :- (i) Policies of the government like development of Medium & Small industries can promote the development of jute mills.

(ii) Other government incentives like promotion of traditional industrial products of our country.

For e.g. Google displayed a wide range of traditional products online to highlight this industry & other such industries.

Transport Facilities :- In order for smooth transaction of raw material & finished products between mills & markets & agricultural farmers, West Bengal has huge expanse of railway lines and well developed ports & roads.

Jute mill in India, today are computed with problems like :-

① Availability of cheap synthetic Clothes

Due to the expansion of Nylon & Polyster industries, the business of expensive jute mills are on a halt.

(2) Lack of Government Incentives

Over the years, Government has not provided adequate structural & non structural incentives for the development of jute mills. This has led to their degradation.

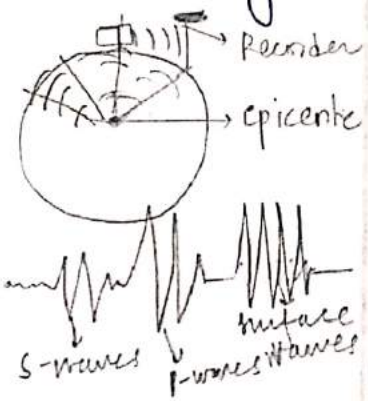
Jute Mills are one of the most valued traditional industries of India and thus, various measures must be undertaken to protect these industries.

4. Explain how earthquake waves are used as an indirect source for understanding the structure of the interior of the earth.

व्याख्या कीजिए कि पृथ्वी के आंतरिक भाग की संरचना को समझने के लिए एक अप्रत्यक्ष स्रोत के रूप में भूकंपीय तरंगों का किस प्रकार उपयोग किया जाता है।

(4) Earthquake waves are the waves that are formed during the movement of tectonic plates. There are ~~two~~ three types of earthquake waves :-

(i) S-waves
(ii) P-waves.
(iii) Surface waves.

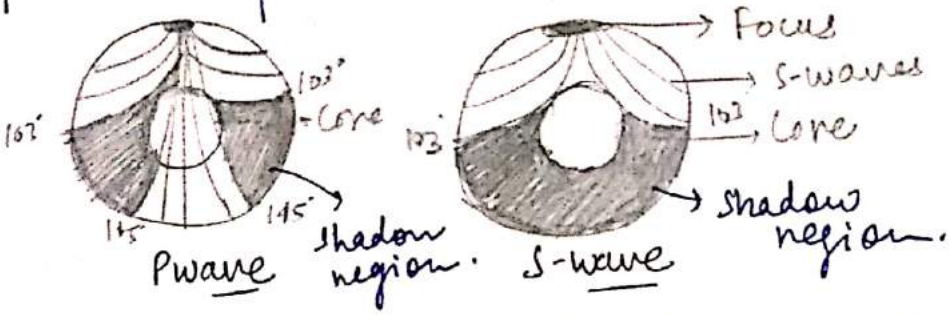


P-Waves
- These waves travel through all mediums — solid, liquid, gas
- They move parallel to the direction of movement of waves.

S-Waves
- These waves travel only through solid medium.
- They travel in the direction perpendicular to the direction of movement of waves

Surface waves
- These are strongest of all & last to get recorded on a seismograph.
- They are formed due to interaction of earthquake waves with surface objects.

After a careful analysis of areas where P & S waves are present, the structure of interior of the earth can be understood.



From the above record of P & S waves following things/references can be derived at :-

① P-waves – that can pass through all the medium can easily be recorded at the opposite side of focus but S-waves that can travel only through solid media cannot reach opposite side of the focus.
∴ Core of the earth is made up of liquid material or material in semi molten state.

② Since S-waves are present between 0° – 103° of the focus, it means the outer portion of earth → crust & is made up of solid material.

③ Similarly, Mantle → is in liquid / semi molten state.

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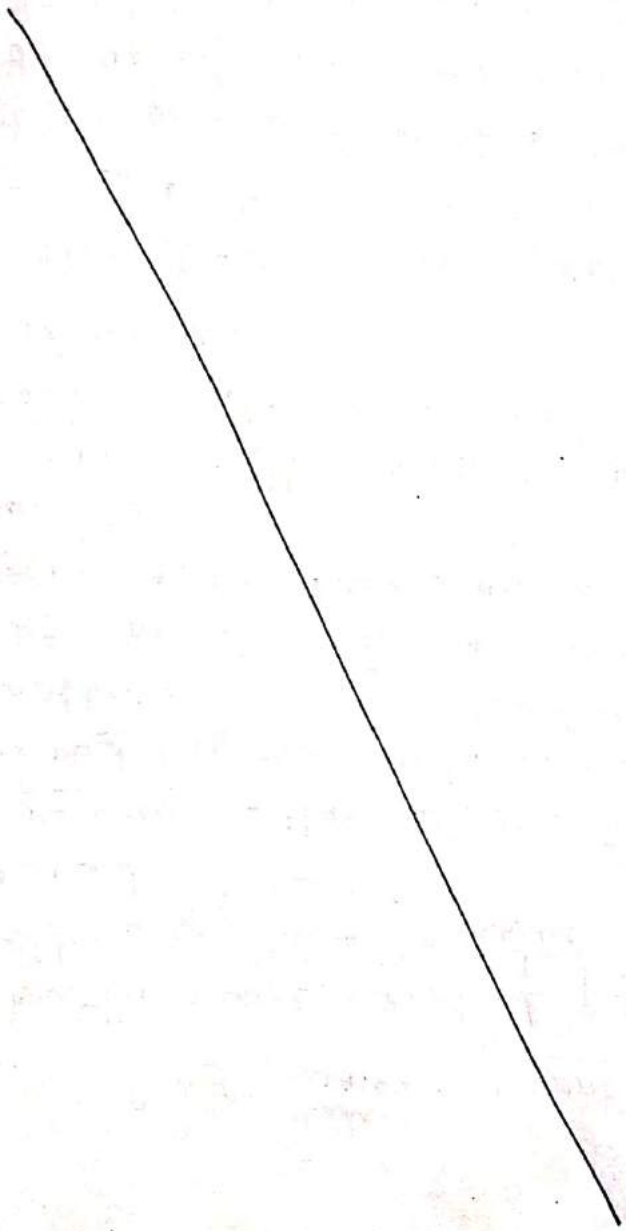

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5. Giving an account of land use changes in India, mention various factors driving them in the last few decades. Also discuss the consequences of changing land use pattern.

भारत में भू-उपयोग में परिवर्तन का विवरण देते हुए, विगत कुछ दशकों में इसके लिए उत्तरदायी विभिन्न कारकों का उल्लेख कीजिए। साथ ही भू-उपयोग पैटर्न में हो रहे परिवर्तनों के परिणामों की भी चर्चा कीजिए।

(5) Shift in the use of land from its traditional use is known as land-use change. There can be several factors behind this change. Some of them are:-

(i) Agricultural Needs :- With the rapid growth of population in our country, there is a growing need for agricultural production in order to support them. For this, large scale deforestation has been taking place.

(ii) Also, some of the practices of tribal population which are still continuing like- Shifting Agriculture destroy present forested area. In this type of agriculture; a piece of land is cleared for agricultural activities; sown, cleared & again burnt to leave it fallow. This has led to the increase in Wasteland area of the country too.

(2) Developmental Needs :- Since the beginning of industrialisation, there is a rapid demand for land area that can be used for planting or setting up of industries.

This too has resulted in rapid deforestation and acquisition of coastal areas which are not safe for inhabition.

(2) Urbanisation :- Rise in population & changes in lifestyle of Indian population resulted in a rapid land use change. New areas are cleared for housing activities both on land & near coasts.

Changes in land-use of the country has resulted in following :-

(i) Increase in the instances of disasters

(a) Flood :- With inhabitation of coastal areas, the hazard of flood has increased rapidly.

⊙ Moreover, deforestation prevents the rainwater from flowing outside the catchment area & result in floods downwards.

⊙ Urban Floods :- Like the one in Tamil Nadu & Mumbai in 2019, was a clear result of landuse change without careful planning.

(b) Earthquake :- Rapid development of buildings & industries put pressure on land & this result in frequent instances of earthquakes.

(c) Landslides → due to building activities in hazardous regions.

(ii) Threatening of livelihood of Tribal population :- they derive their means of livelihood from forested areas.

(iii) Environmental Pollution :- Due to deforestation & increase in industrial wastes ; urbanisation & household waste etc.

(iv) Wildlife :- Due to developmental activities, the flora & fauna of the region had to undergo rapid transformation. As a result, many of them have gone extinct or are endangered.

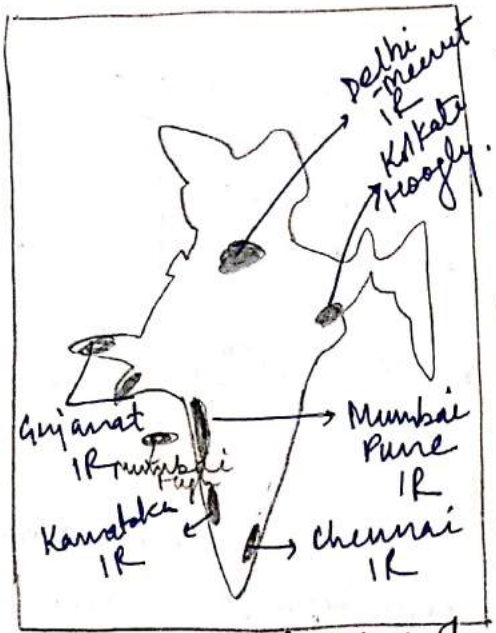
Thus, there is an urgent need for careful planning of land use management. Proper mapping of ~~hazard~~ hazards associated with land use change must be taken into consideration.

6. What are the major industrial regions of India? In this context, identify the factors that made Mumbai - Pune region as a major industrial hub of the country.

भारत के प्रमुख औद्योगिक क्षेत्र कौन-से हैं? इस संदर्भ में, मुंबई-पुणे क्षेत्र को देश का प्रमुख औद्योगिक क्षेत्र बनाने वाले कारकों की पहचान कीजिए।

(6) Major industrial regions of India are the regions which have developed rapidly as a result of industrialisation. These regions are :-

(i) Mumbai Pune Industrial Region
(ii) Karnataka Industrial Region.
(iii) Kolkata - Hoogly Industrial Region
(iv) Gujarat Industrial Region
(v) Delhi - Meerut Industrial Region
(vi) Chennai Industrial Region.



Industrial Regions of India.

- Mumbai Pune region is one of the oldest & most prominent industrial regions of India. Several factors can be attributed to it :-

① Historical factors :- Being one of the Presidencies during colonial times, it underwent rapid industrialisation.
- Had good availability of capital.

② Presence of Minerals :- Since the discovery of mineral oil in Mumbai High & its utilisation. Mumbai has developed rapidly in industries.

③ Population :- Mumbai-Pune owes local population & migrants of other areas provide labour for its industries.

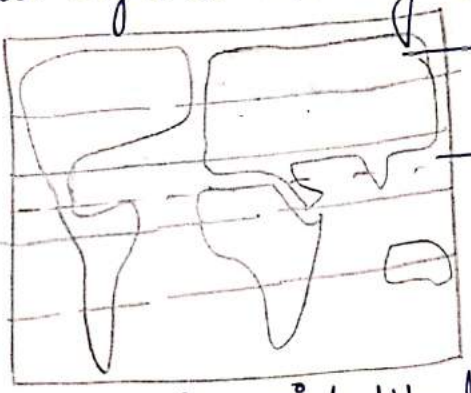
④ Black soil :- useful for cultivation of Cotton → earliest industry.

However,
These industrial regions must undertake developmental activities keeping in mind the environmental issues & Government must provide incentives for development of other regions as well.

7. Illustrate the vertical and latitudinal distribution of temperature in ocean waters along with factors responsible for such a distribution.

महासागरीय जल में तापमान के ऊर्ध्वाधर और अक्षांशीय वितरण के साथ ही इसके लिए उत्तरदायी कारकों को उदाहरण सहित समझाइए।

(7) Heating of ocean water that increases the temperature of ocean unevenly is balanced by the ocean currents and thus prevents tropical areas from warming excessively or mid latitudinal; polar regions cooling down much.



→ These regions do not recieve much of direct sunlight.

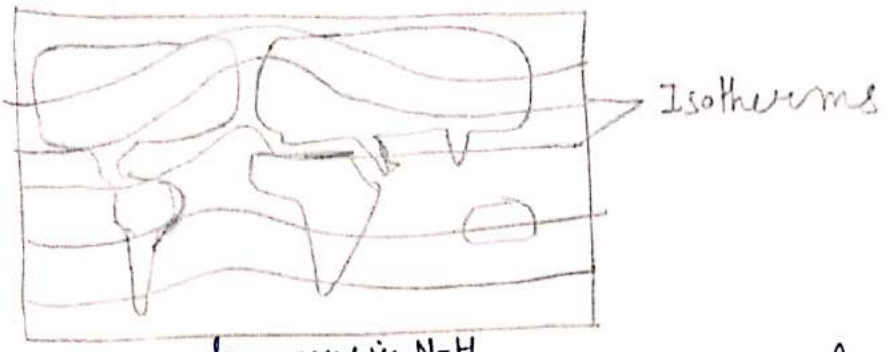
→ equitorial regions gets heated excessively.

→ At 0°-30° latitude → Sun shines overhead once in a year, this results in rapid warming of ocean water.

→ Above 30° latitude North & South → Sun never shine directly & therefore temperature here is lower than the equator regions.

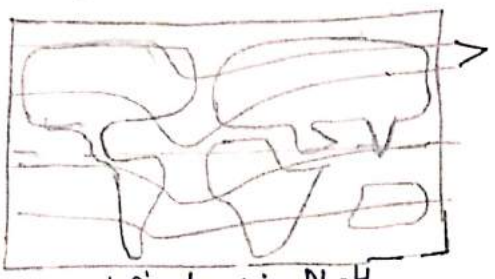
Vertical distribution

Ocean currents distributes excess heat from tropical waters to higher latitudes.



Summers in N-H

→ Due to the distribution of heat through ocean currents, isotherms which are areas having equal temp. bends towards north.



Winter in N-H

→ Due to greater land area in N-H, which cools down rapidly & ocean waters at higher latitudes cool slowly. Isotherms bend towards south to distribute equal temp throughout world.

Ocean currents, thus, play huge role in balancing temperature & prevents major halting of activities anywhere in world.

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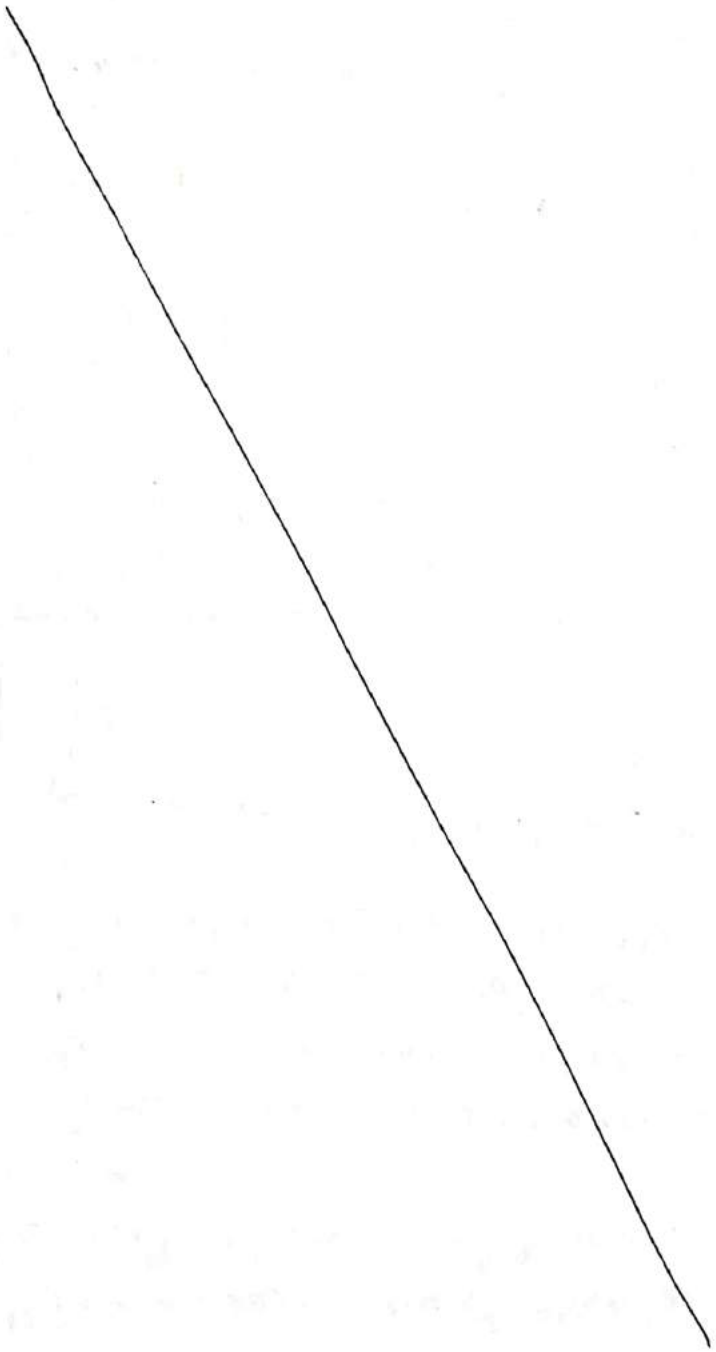

8. What were the major geological events that have shaped the present day drainage system of Peninsular India? What role has been played by geographical factors in the peninsular drainage pattern?

प्रायद्वीपीय भारत के वर्तमान अपवाह तंत्र को आकार देने वाली प्रमुख भूवैज्ञानिक घटनाएं क्या थीं? प्रायद्वीपीय अपवाह प्रतिरूप में भौगोलिक कारकों द्वारा क्या भूमिका निभाई गई है?

(8) Major geological events that have shaped the drainage system of Peninsular India are :→

(i) Tectonic movements before the movement of Indo Australian plate – India towards it.

(ii) Major Block faulting that resulted in the formation of Narmada, Mahanadi rivers.

(iii) Submergence of western Ghats during hitting up of Indian plate with Eurasian plate.

Geographical factors that shape the peninsular drainage pattern are :–

(i) Rainfall :– ~~not~~ much rainfall; most of the rivers are perennial.

(ii) Steep Slope of western ghats :– This prevents peninsular rivers from forming deltas.

(iii) Hard Peninsular Rocks :– This prevents peninsular river from carrying sediments with it & also fail to form deltas.

Thus both geological events & geographical factors shaped peninsular drainage pattern.

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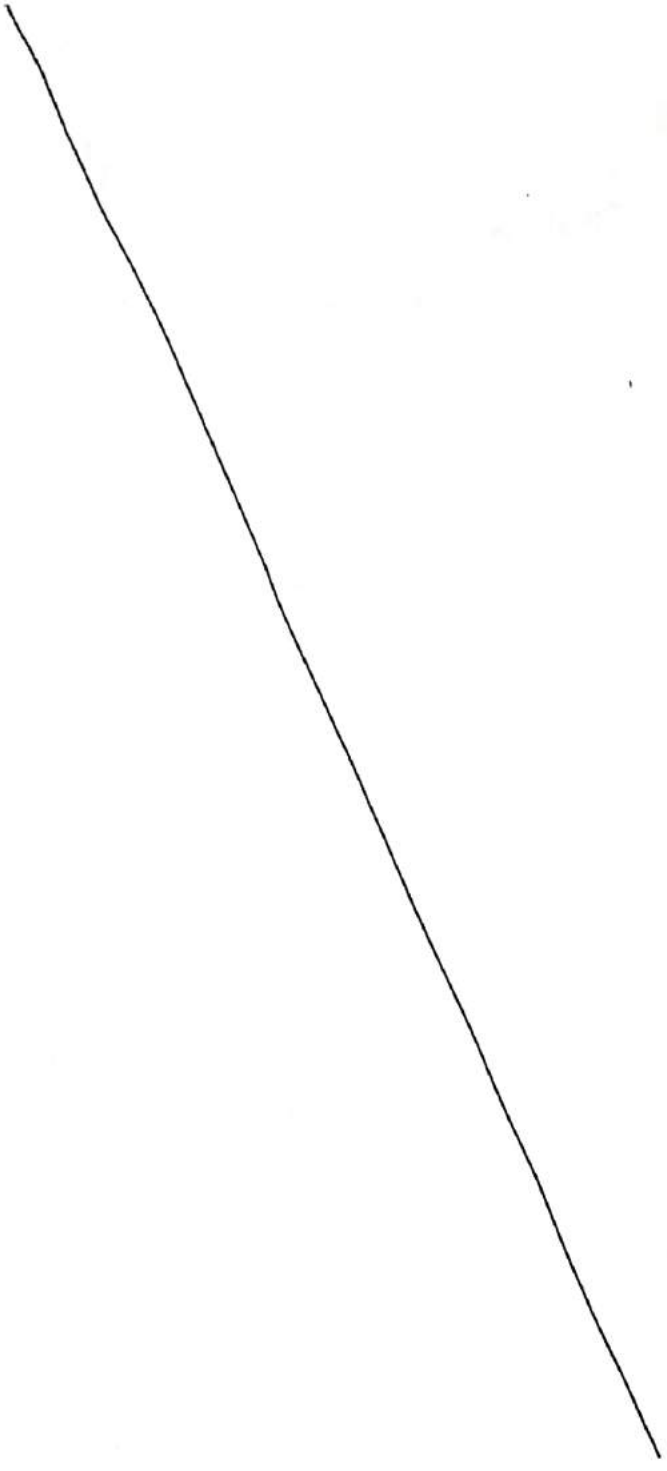

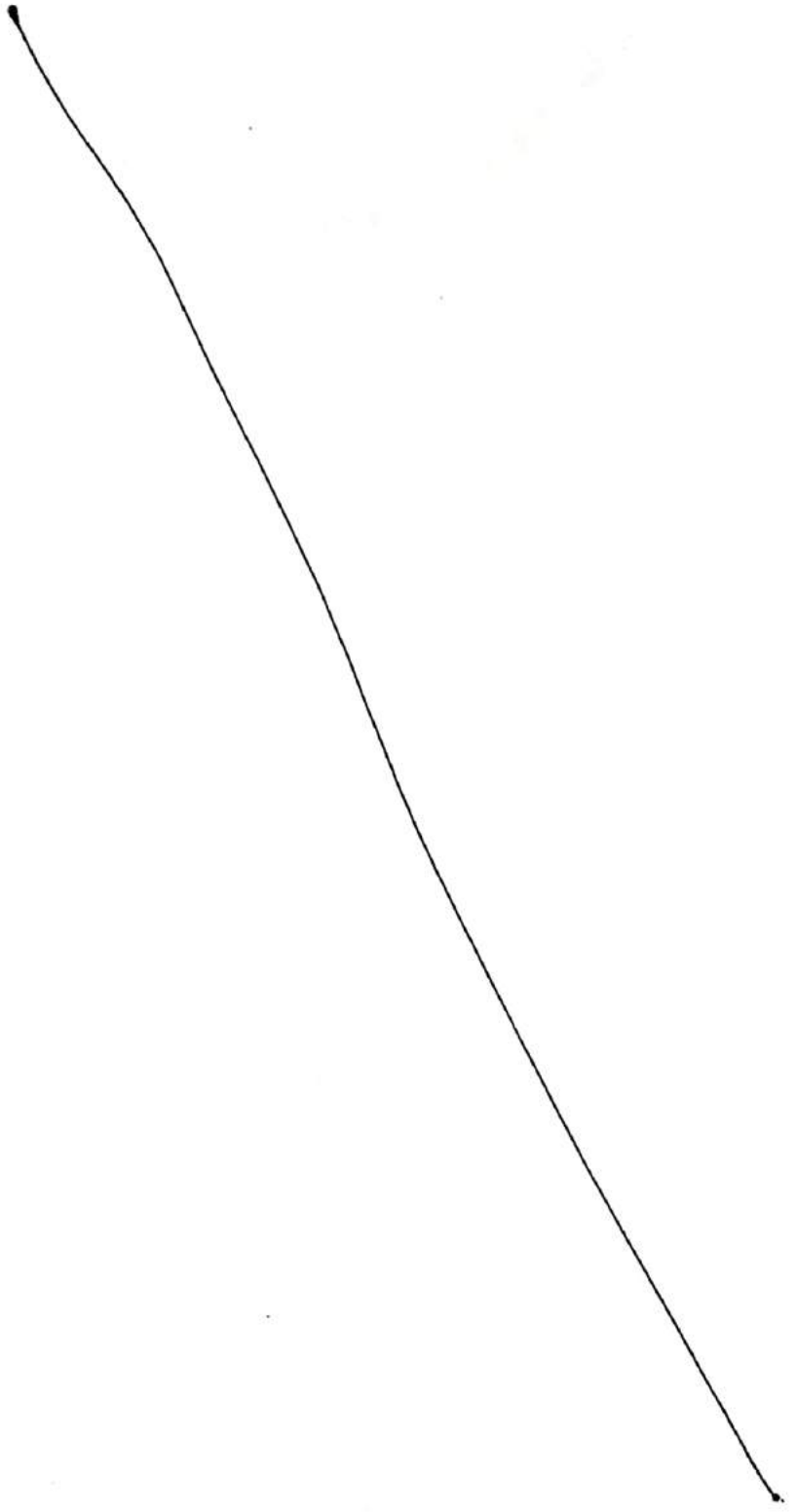

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9. Why are Himalayan regions vulnerable to landslides? What steps can be taken to check frequent landslides in the region?

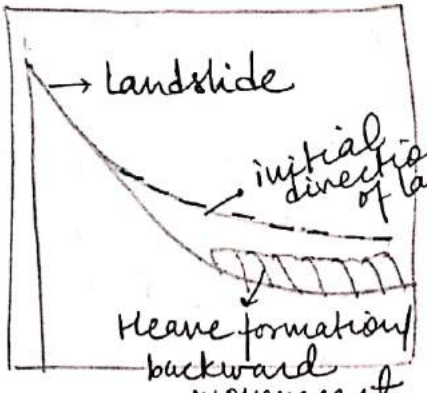
हिमालयी क्षेत्र भूस्खलनों के प्रति सुभेद्य क्यों है? इस क्षेत्र में बार-बार होने वाले भूस्खलनों की रोकथाम हेतु क्या कदम उठाए जा सकते हैं?

(9) Landslides are the events in which rapid movement of land takes place from higher regions to lower regions.
Himalayan regions are vulnerable to landslides due to following reasons :-

(1) Tectonic Activities :- Himalayas are tectonically active regions. This results in frequent events of landslides.

(2) Young Rocks :- Himalayas constitute of young & newly formed rocks that increases the vulnerability of landslides.

(3) Formation of Heat Island :- Due to rapid developmental activities, urban areas get excessively heated and during correctional rainfall & landslides take place.



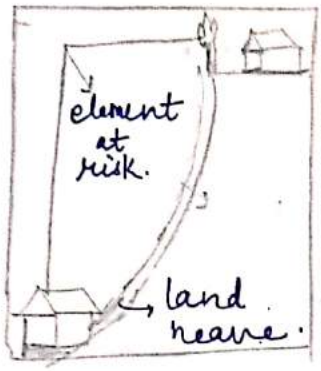
Landslides can result in major losses of life & property & therefore requires proper setup to check its happening. However, landslides are result of activities that might be related to local level land

use and thus, is difficult to forecast.

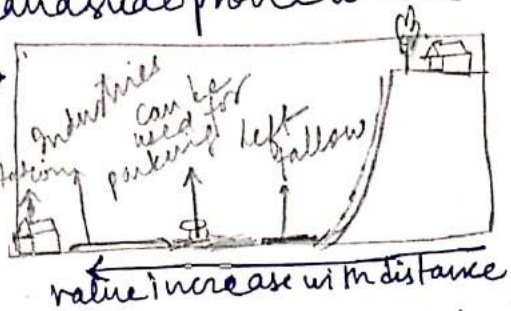
∴ Therefore, landslide prone area need careful measures to be taken in advance :-

(i) Landslide Hazard Zone Mapping

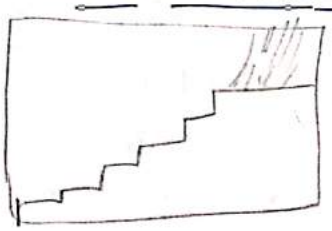
(ii) Preventing developmental activities in landslide prone areas.



(iii) Planning land use in landslide prone areas.



(iv) Terrace farming → It prevents rapid downpouring of rainfall & thus prevents most major landslide loss.



(v) Increasing awareness amongst local population about the risk & ways to mitigate them.

Landslides are major hazardous events in our country and proper steps must be undertaken in order to ensure that major loss of lives & properties do not take place.

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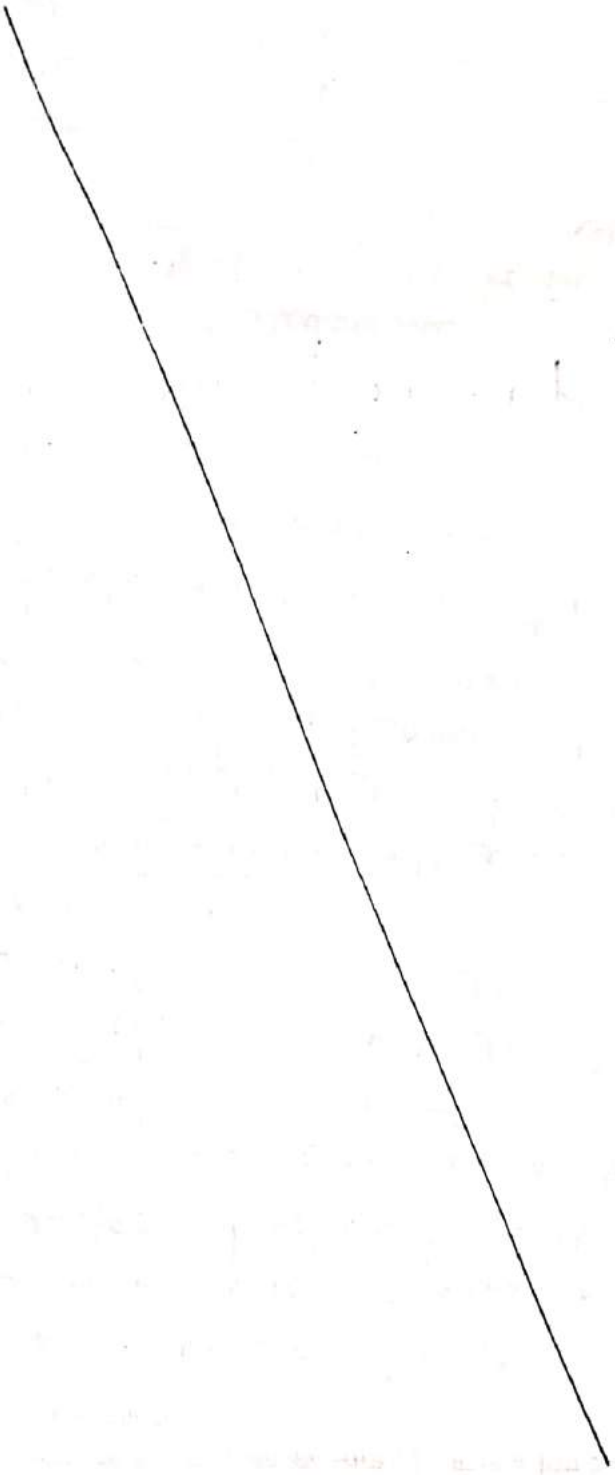

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10. What do you understand by social forestry? Highlight its socio-economic significance for India.

सामाजिक वानिकी से आप क्या समझते हैं? भारत के लिए इसके सामाजिक-आर्थिक महत्व पर प्रकाश डालिए।

(10) Social forestry refers to the practice of conserving present forest cover and undertaking afforestation simultaneously. There are several types of social forestry. Some of them are :-

(i) Farm forestry → Under this, farmers use part of their fields for planting trees.

(ii) Agro-forestry → Under this, agricultural fields are planted with forests & after the trees shed leaves, agricultural activities are undertaken.

Afforestation & conservation of present forest cover has following socio-economic significance for India :-

(i) Protection of Tribal Population :- Tribal population in India are spread across 18 states. There main source of livelihood are forests. Conservation of their habitat & management of their access to resources under Protection of Traditional Dwellers Act, 2006 provides them major incentives.

(ii) Protection of Wildlife Population :- After an increase in instances of species getting extinct or endangered. There is an urgent need for their protection.

(iii) Tourism :- Along with conservation of forests, we preserve the scenic beauty of the area that can be used to attract tourists to our country. Moreover, wildlife enthusiasts & photographers too can get major areas for themselves.

(iv) Traditional Manufacturers :- Some of the traditional manufacturers like bamboo ~~or~~ basket makers can also be allowed to carry their manufacturing activities.

Conservation of forests & afforestation, thus can help in promoting both Society & economic of our country. Government must undertake major planning activities for this.

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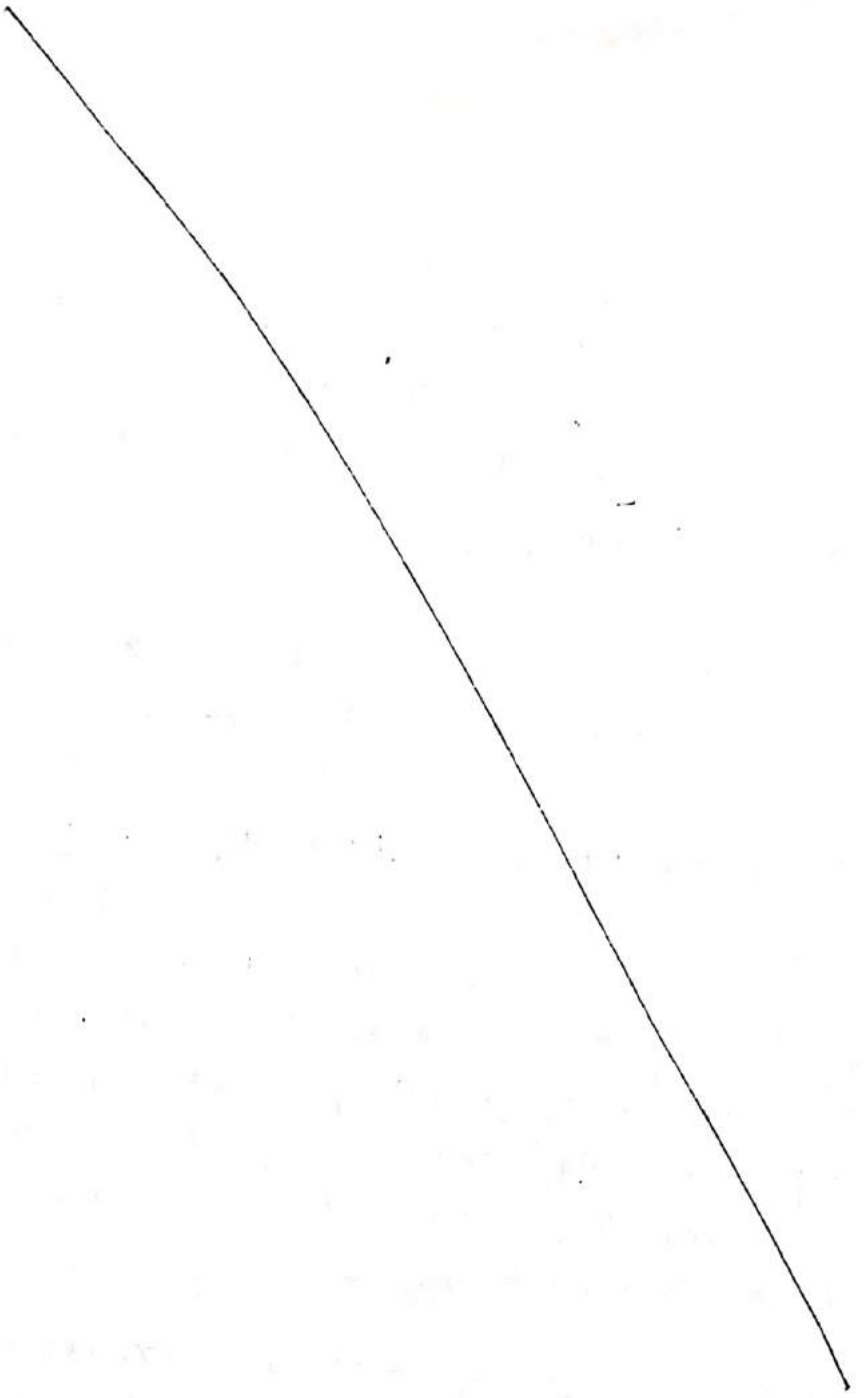
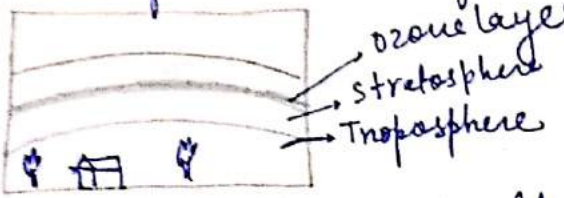


11. Differentiating between good and bad ozone, write a brief note on ozone pollution. Also, highlight the initiatives taken to mitigate ozone pollution.

अच्छे एवं खराब ओजोन के मध्य अंतर स्पष्ट करते हुए, ओजोन प्रदूषण पर एक संक्षिप्त टिप्पणी लिखिए। साथ ही, ओजोन प्रदूषण के शमन हेतु उठाये गए कदमों पर भी प्रकाश डालिए।

(11) Good Ozone refers to the ozone layer present in Stratosphere that protects earth from harmful solar radiation.



Bad Ozone refers to the ozone molecule (O_3) present in the atmosphere which is a major greenhouse gas (GHG). This blocks outgoing terrestrial radiation from earth surface & result in rapid warming of atmosphere.

Bad Ozone (O_3 molecules) in atmosphere is thus a major concern for the environment. Several sources of Ozone (O_3) are :→

(i) Pesticides (ii) Air Conditioners & Refrigerators

Increase in bad ozone & corresponding temperature increase can result in following :—

(i) Rapid Melting of Glaciers & flooding of coastal areas :→ Polar glaciers are

melting rapidly due to increase in temp, this results in increase in volume of water in rivers and frequent flooding of coastal regions take place. According to Intergovernmental panel for climate change (IPCC) report 2019 - "Ocean & Cryosphere" → ⊙ "2 cm increase in river/ocean water has taken place after 1993"
→ ⊙ Instances of floods have increased 2 folds.

(ii) Destruction of Agricultural land area due to frequent flooding & increase in salinity.

⊙ Ozone, moreover, is hazardous to health of human beings when inhaled in large quantities. According to IPCC report, "2% of world's death are caused due to air pollution".

In order to mitigate ozone pollution; following measures have been undertaken

(i) Ozone layer Protection Act, 2003
(ii) Kyoto Protocol :- to decrease the production of Green House Gases & hence protect ozone layer.

Since, India generates huge amount of waste, large amount of electricity can be generated through this process.

- Huge amount of resources are wasted in waste management. These waste to energy plants will reduce the cost.
- It will solve the problem of landfills. This will provide additional areas for inhabitation & other developmental activities.

Challenges

1. No major research have been undertaken in this field as yet. This poses a major challenge before government to properly undertake the programme.
2. The construction of Bio-Gas Plants are major obstacles. These plants are very costly.
3. Harmful fumes from bio-gas plants can harm nearby plants & animals. Large scale mitigation measures would be needed to solve this.

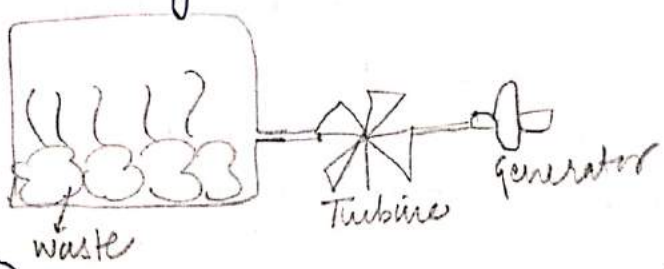
Given the urgent need of shift from non-renewable to renewable sources of energy, Government must invest

12. What are various techniques of recovering energy from waste? Highlight the potential and challenges associated with Waste to Energy plants in India.

अपशिष्ट से ऊर्जा पुनर्प्राप्ति की विभिन्न तकनीकें क्या हैं? भारत में अपशिष्ट से ऊर्जा उत्पादन संयंत्रों से जुड़ी संभावनाओं और चुनौतियों पर प्रकाश डालिए।

(12) India generates 250 million tonnes of waste every year. In order to prevent the formation landfills of waste there is a need to convert waste into renewable energy. Several techniques for this are:-

(i) Bio Gas Plants : In this, energy is generated through household waste.



Process

waste is burnt in bio-gas plant which in turn is used to drive turbine & generate electricity.

(ii) Pyrolysis : direct burning of waste product.

Potential of waste to Energy Plants :-

(i) In order to fulfill Nationally Determined Contributions (NDCs) in accordance with Paris Agreement 2015; India needs to reduce energy production from non-renewable sources.

Since, India generates huge amount of waste, large amount of electricity can be generated through this process.

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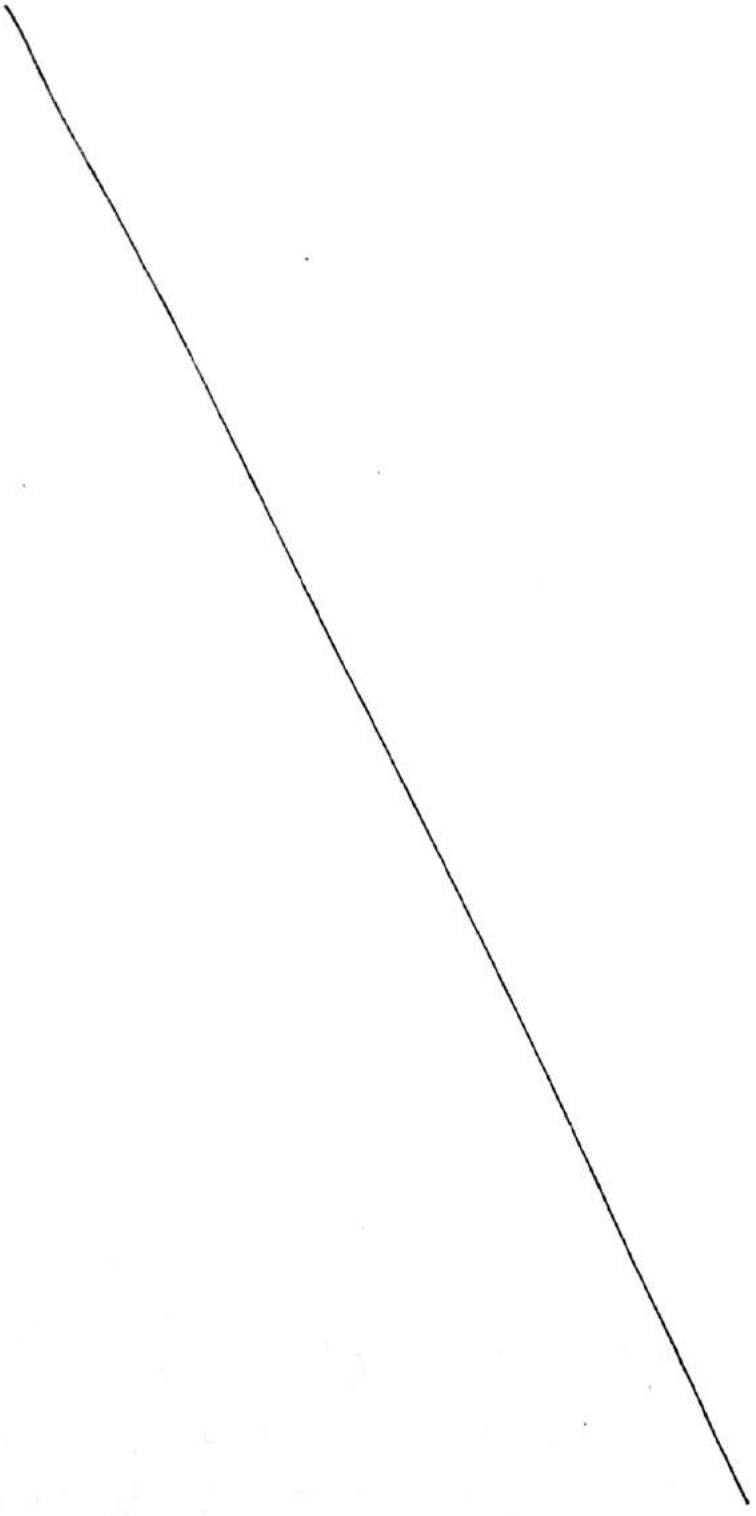
Given the urgent need of shift from non-renewable to renewable sources of energy, Government must invest

more to research & development of waste to energy plants. Also, industries promoting such plants should be provided other incentives.



13. In context of waste management, what do you understand by Extended Producer Responsibility? Mention the challenges in ensuring its compliance in India.

अपशिष्ट प्रबंधन के संदर्भ में, विस्तारित उत्पादक उत्तरदायित्व (Extended Producer Responsibility) से आप क्या समझते हैं? भारत में इसका अनुपालन सुनिश्चित करने में आड़े आने वाली चुनौतियों का उल्लेख कीजिए।

(13.) Extended Producer Responsibility (EPR), according to Waste Management Rules, 2016 & E-waste Management Rules, 2016 refers to the responsibility associated with user or supplier of waste products.

According to EPR,

(i) It is the responsibility of companies that use single-use plastics for the packaging of their products to ensure their proper disposal.

(ii) It is the responsibility of the user of electronic items to ensure its proper disposal after it gets dead.

(iii) It is the responsibility of waste generator at home to divide the generated waste into biodegradable & non-biodegradable & dispose it to proper bins or kabadiwalas.

(iv) It is the responsibility of market vendors not to give plastics along with their product.

(v) It is the responsibility of construction companies to properly dispose waste products.

Major challenges associated with its compliance in India are :-

(i) Tracing & Tracking ; Due to major technological challenges, it is difficult to trace the actual producer of waste.

(ii) Lack of Awareness :- Majority of the people are either unaware of the rules or are unaware of the distinction between biodegradable & non-biodegradable waste. This prevents their proper disposal.

(iii) Extended Producer Responsibilities for Companies : Since, there is no alternative to single use plastic, they are not able to shift its usage to other products. There members are also not trained to undertake such collection activities from the supplied products to the customers.

(iv) Lack of legal measures :- There are no strict provisions for punishment for non-compliance of the waste management rules. Thus, it fails to produce major response.

Formation of rules & its compliance has major gaps between them. Government must strengthen the implementation of rules through various legal measures. This can only solve the problem of waste generation in India.

14. India has witnessed increased instances of human-wildlife conflict in the recent years. Stating the reasons behind it, mention ways in which it can be averted.

हाल के वर्षों में भारत में मानव-वन्यजीव संघर्ष की घटनाओं में वृद्धि देखी गई है। इसके पीछे उत्तरदायी कारणों का वर्णन करते हुए, उन तरीकों का उल्लेख कीजिए जिनके द्वारा इन्हें टाला जा सकता है।

(14) Increase in Urbanisation & Industrialisation has resulted in an increase in the instances of human-wildlife conflict. Several reasons can be attributed to such conflicts. These are :-

(i) Developmental Activities :- (a) These activities require more & more land area. Now, since, land area is fixed in the country. A shift in land use pattern is taking place.

⊙ Large scale destruction of forests is taking place. This destroys habitat of wildlife.

For e.g. Kaziranga National Park had several instances of elephants getting out from the area & destroying habitats of humans.

(b) These developmental activities also result in large scale production of pollution which causes many animals to go extinct.

(ii) Increased instances of poaching :- Wild Animals are being hunted on a large scale for their skin, hairs, teeth etc. These items having high value are being traded extensively. Due to this, Tigers → hunted for skin, are endangered now. Elephant → hunted for ivory too is endangered. This has resulted in an increase in human-wildlife conflict in recent years.

⊙ In order to reduce the risk of human-wildlife conflicts and ensure that both of them live peacefully together. Measures that can be undertaken are :-

(i) Specifying Land use :→ Government must specify areas that can be used for human activities & areas that are meant for wildlife. No deforestation must be undertaken in areas meant for animals.

(ii) National Parks & Wildlife Sanctuaries In order to preserve endangered or vulnerable animals, special areas must be earmarked as National Parks (natural habitat) or Wildlife

Sanctuaries.

(iii) Regulation/Prohibition of Poaching

Wildlife must be protected from increasing greed of humans. For this, Convention on International Trade in Endangered Species (CITES) or Wildlife Protection Act, 1972. must be complied with.

Biodiversity of India is one of its most valuable resource. This must be preserved & human activities must be regulated to preserve both wildlife & human.

15. Provide arguments both in favour of and against adoption of Genetically Modified (GM) crops on a large scale in India.

भारत में वृहद् पैमाने पर आनुवंशिक रूप से संशोधित (GM) फसलों को अपनाए जाने के पक्ष और विपक्ष में तर्क प्रस्तुत कीजिए।

(15) Genetically Modified (GM) crops are the crops grown by seeds that are added with genes in order to develop resistance in them against pests.
For e.g. Bt Cotton → added with 'Cry1Ab', 'Cry2Ac' that helps it fight against pest attacks.
The use of genetically modified seeds are largely banned in India due to the possible adverse circumstances it may result in. However, there is an increasing demand from farmers to legalise its usage.
⊙ Recent instances of usage of HT-Bt Cotton & Bt Brinjal.

Arguments in FAVOUR :→
(1) Protection of Crops → GM crops protects crops from pest attacks.
(2) Increasing cost of Production → With increasing use of pesticides, cost of production is increasing, this pose a serious threat to farmers largely dependent on crops for their livelihood.

③ Increasing instances of Farmer Suicides
Farmers commit suicide in large numbers due to their failure to pay back money taken from bank & increasing indebtedness. These GM crops will prevent failure of crops.

④ No ban in foreign countries → Developed countries like Canada & USA depend upon GM crops & no ban has been imposed over its usage.

⑤ Import → Most of the food items are manufactured through GM crops, so chemical might already have reached our food chains.

Arguments AGAINST :-

① Inter Generational Impact :- The effect of some of the chemicals are felt only after few generation.

② Biomagnification → These harmful gene may go on multiplying with the food chain.

③ Fraud :- Some of the seed sellers in the name of GM seeds may cost huge amount to the farmers.

Government must undertake research in the field of GM crops in order to assess its impact or to come up with suitable alternatives.

16. The Paris Agreement addresses crucial areas necessary to combat climate change. In this context, identify some of the key aspects of the Agreement.

पेरिस समझौता, जलवायु परिवर्तन का मुकाबला करने हेतु आवश्यक महत्वपूर्ण क्षेत्रों को संबोधित करता है। इस संदर्भ में, इस समझौते के कुछ प्रमुख पहलुओं की पहचान कीजिए।

(16) Paris Agreement, 2015 was one of the Convention of Parties undertaken under United Nations Convention on Forest & Climate Change (UNFCC) of Earth Summit, 1992.

⊙ Under this Agreement, the contracting parties pledged to restrict the level of global warming to "1.5°C of the pre-industrial level".

⊙ Each country had to come up with "Nationally Determined Contributions" (NDC) to achieve this goal.

→ India's NDC was to increase production of renewable energy to 250 GW.

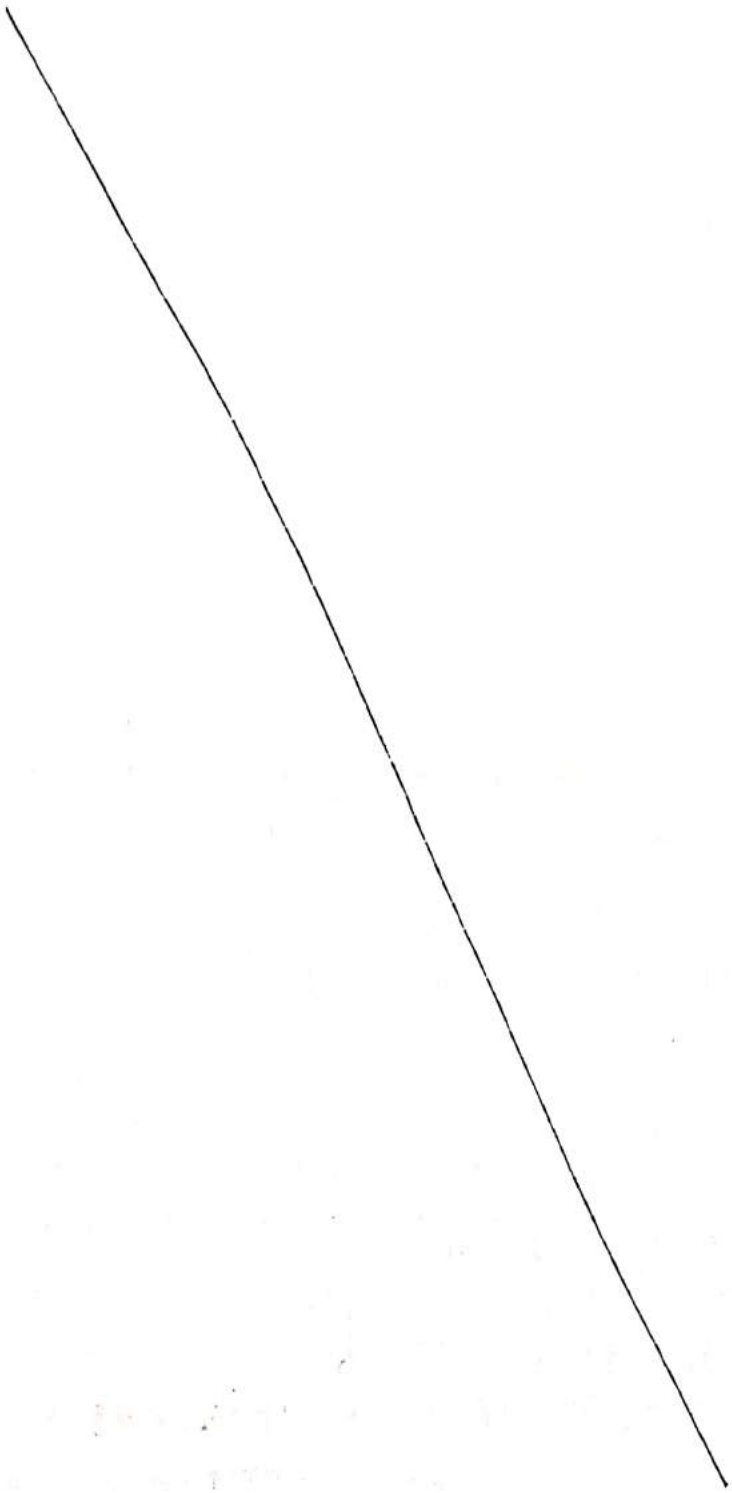
→ restrict use of plastic → under which Single Use Plastic are being increasingly targetted upon.

Earlier Convention of Parties (COPs) just took pledges from the country but never ensured its compliance. However, this agreement mangle

Nationally Determined Contribution (NDCs) ensure compliance too.

⊙ Carbon Trading :- Under this, countries generating less carbon that^n specified can trade off its remaining amount. This would ensure that developing countries producing less of the carbon is benefitted with the compliance of the norms.

Paris Agreement, 2015 was a major landmark in the history of environmental convention & UN must ensure its proper implementation to fight growing climate change.

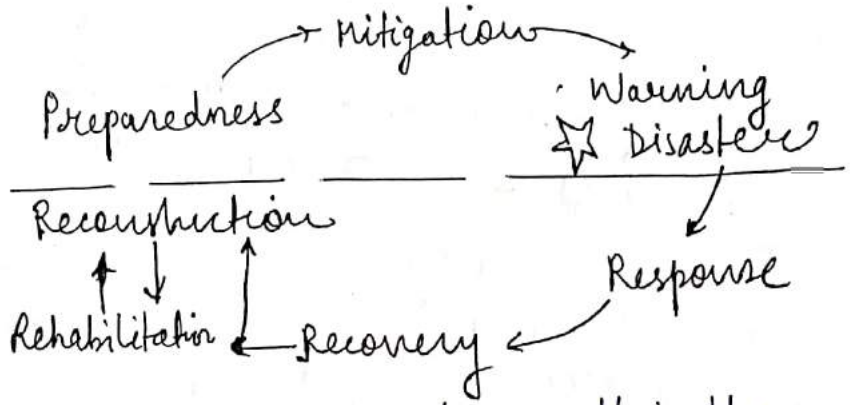


17. Elaborate on the different phases of the disaster risk management cycle.

आपदा जोखिम प्रबंधन चक्र के विभिन्न चरणों का सविस्तार वर्णन कीजिए।

(17) Disaster Risk Management Cycle

Are a set of steps taken to ensure that no major loss of life & prperty takes place due to disaster. These phases are :-



① Preparedness → Under this the Disaster Management Authority must prepare the local population about the disaster. ⊙ Hazard zone Mapping. ⊙ It prepares special forces for emergency response.

② Mitigation → In order to decrease the vulnerability of a disaster, various mitigation measures are undertaken → Structural Measures :→ Retrofitting of structure, coastal zone planning, rainwater management etc.

→ Non Structural Measures :- Making laws for the compliance of the structural measures.

(3) Warning :→ Disaster warning must be sent through all possible means in the area concerned.

(4) Response → Proper relief measures must be taken to save as many as lives as possible.
→ Special attention to women, children & differently abled people.

(5) Recovery → After a disaster, in the initial 15 days, recovery of most important useful services should be undertaken.

(6) Rehabilitation → (1) Physical Rehabilitation → Only done when there is an urgent requirement.
(2) Social Rehabilitation → Post disaster Trauma among people must be adequately addressed through Trauma centres.

(7) Reconstruction → within 3-4 years, total infrastructure of the place/area must be reconstructed

to ensure that life of the affected people goes on without major disruption. Thus, the Disaster Management Cycle is very important to ensure that no major loss of life & property takes placed.

18. Assess the vulnerability of India's forests to forest fires and suggest measures to tackle it.

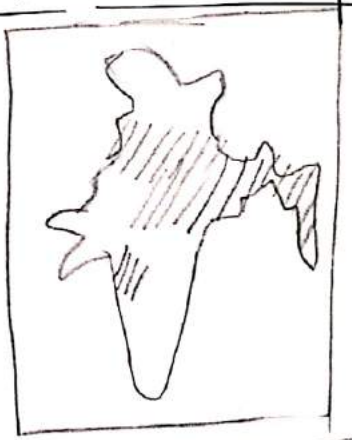
दावानल के प्रति भारत के वनों की सुभेद्यता का आकलन कीजिए और इससे निपटने हेतु कुछ उपायों का सुझाव दीजिए।

(18) Forest fires are the rapid burning of forested area. These can be caused due to both natural & anthropological factors :—

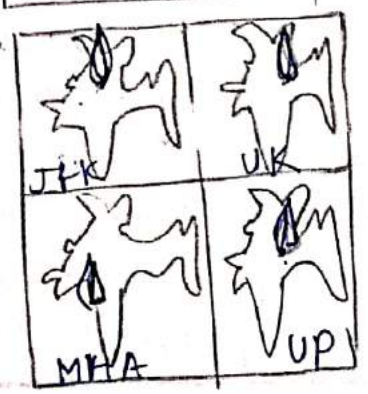
(i) Natural factors → Volcanic Emption; Lightening.

(ii) Anthropological factors → Flame, to undertake developmental activities. (like in Amazon forests, Brazil)

Vulnerability



- 21.4% of total land area in India is under forest cover.
- Most of North & Central states are vulnerable to forest fires.



4 major forest fires in last 50 years in India.

Measures that can be undertaken to tackle it :-

(i) Warning System :- As soon as forest fire begins, forest authorities must be informed to prevent its expansion.

(ii) Local communities must be trained to keep a check on the starting of forest fires.

(iii) Proper fire extinguishing facilities & fired fighting forces (who are the first to respond) must be provided to each area vulnerable to forest fire.

Forests provide us valuable resources & are home to huge number of wildlife population. Proper measures must be undertaken to preserve them from disasters like forest fires.

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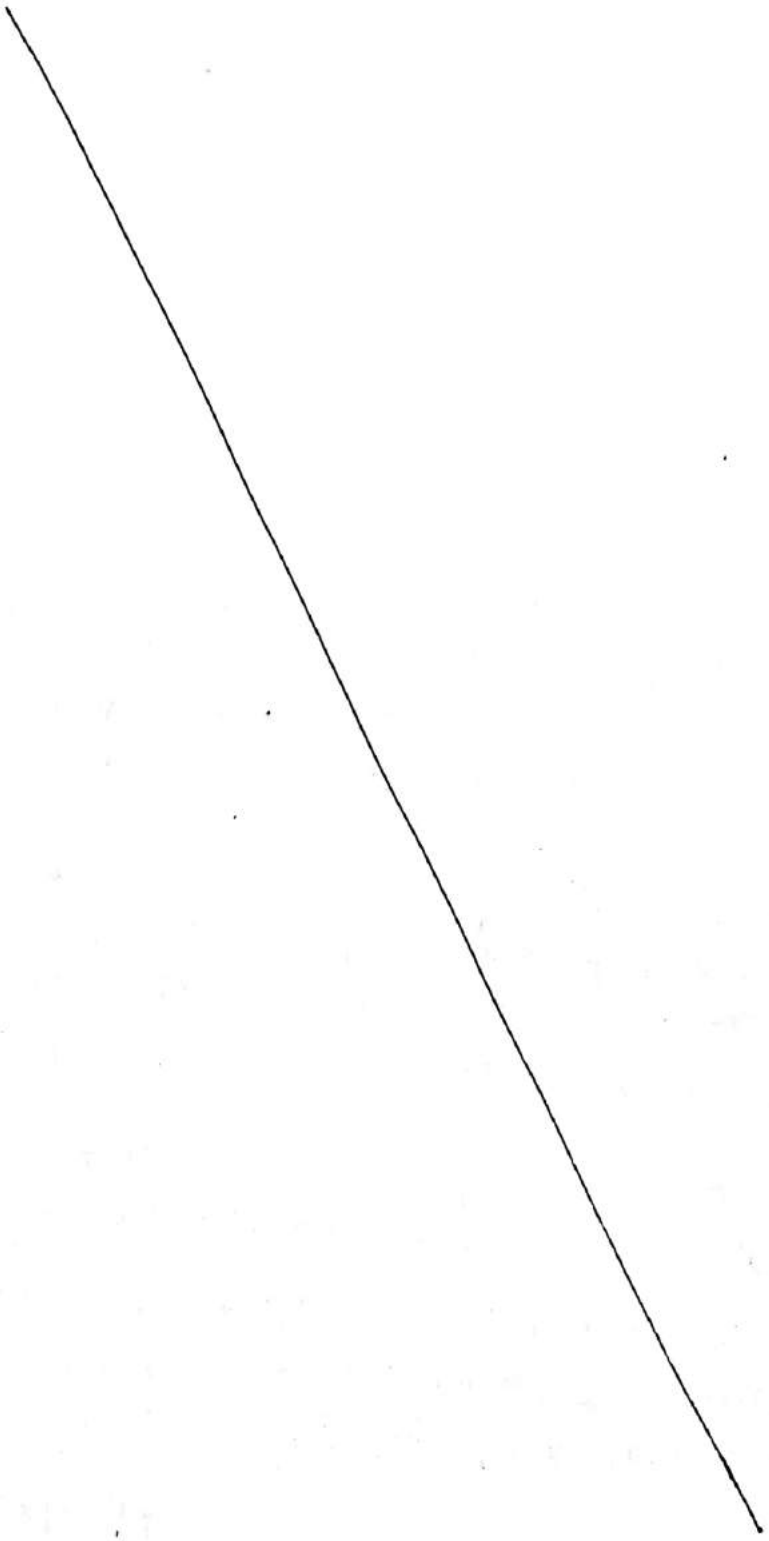


19. How does the National Disaster Management Plan (2016) aim to make India disaster resilient?

बताइए कि राष्ट्रीय आपदा प्रबंधन योजना (2016) का उद्देश्य किस प्रकार से भारत को आपदा प्रत्यास्थ बनाना है?

(19.) National Disaster Management Plan (2016) is the first national plan in India to address the issue of disaster management. This was formulated under Disaster Management Act, 2005 and in accordance with the Sendai Framework 2015.

It plans to make India Disaster Resilient in following ways :-

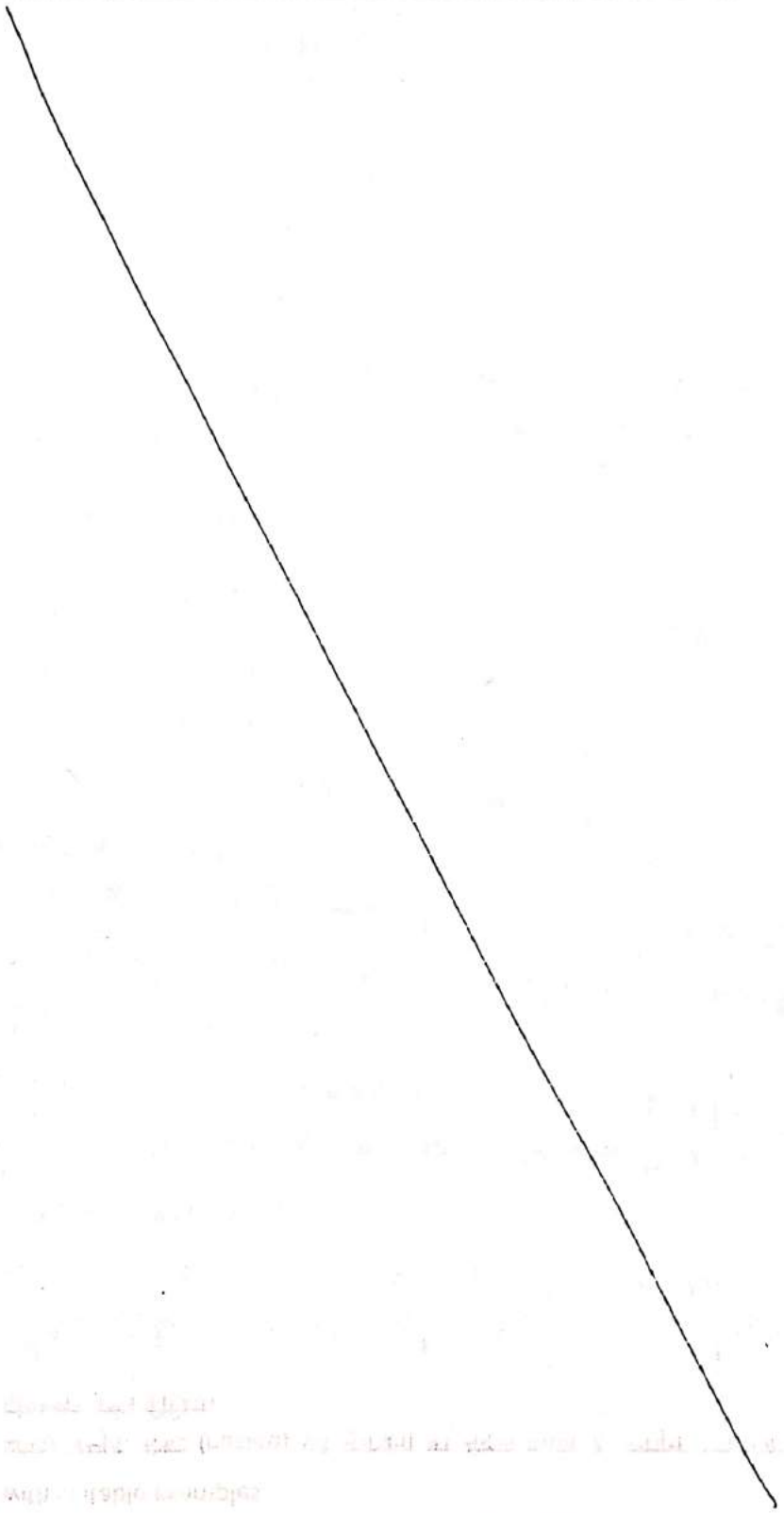
(i) Inter Agency Coordination → Coordination between State, district & national level to address disaster.

(ii) To ensure management not just in terms of reduction in the loss of lives & property but also preparedness in advance.

(iii) Structural Measures → Like Retrofitting of Machine, Rainwater Management etc.

(iv) Non-Structural Measures → Making laws to ensure the compliance of the structural measures. For e.g.
- Coastal Regulation Zones
- Landslide Zoning.

This plan will make India disaster resilient & would ensure that after-effects of a disaster is reduced.



20. A disaster is the combined effect of hazard and vulnerability. Elaborate with suitable examples.

आपदा वस्तुतः संकट (hazard) एवं सुभेद्यता का संयुक्त प्रभाव है। उपयुक्त उदाहरणों के साथ सविस्तार वर्णन कीजिए।

(20.) Hazard is any natural event that can lead to major changes in a landscape of a region.

Vulnerability is a condition that increases the chances of being affected by a hazard.

↳ (i) Physical Vulnerability → Constructio -n in landslide, flood, earthquake prone areas.

(ii) Social Vulnerability → certain social groups are more vulnerable to others. These are → women, children, differentaly abled people.

For example :-

(i) Hazard - Earthquake. Vulnerability - No Retrofitting of building structures

↳ Earthquake may not cause collapse of building structures if all buildings are earthquake prone - "Retrofitted" → This may lead to huge losts of lives & property - DISASTER.

(ii) Hazard → Cyclone Vulnerability - construction in areas close to sea shore.

→ Huge loss of life & property as cyclones would take away housing structures & kill people

(iii) Hazard → any Vulnerability → differently abled people.

2 times more lives are lost because of no proper arrangement for differently abled people.

Thus, proper reduction of vulnerability must be undertaken in order to reduce the damage caused by a disaster.

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