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GENERAL STUDIES (TEST CODE : 845)

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Medium Hindi/Eng.	English	Registration Number	28019
Center		Date	09.03.17.

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	
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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:

Signature of Examiner

INSTRUCTIONS

- Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
- There are TWENTY questions printed in ENGLISH.
- All questions are compulsory.
- 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 medium other than the authorized one.
- Word limit in questions, if specified, should be adhered to.
- Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.

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EVALUATION INDICATORS

1. Alignment Competence
2. Context Competence
3. Content Competence
4. Language Competence
5. Introduction Competence
6. Structure - Presentation Competence
7. Conclusion Competence

Overall Macro Comments / feedback / suggestions on Answer Booklet:

1.

2.

3.

4.

5.

6.

All the Best

All the questions are compulsory and carry 12.5 marks each.

1. Soil management in Northeast India is critical for a viable agriculture economy. In this context, discuss the problems of soils in Northeast India. Suggest some steps that can be taken to counter this problem.

पूर्वोत्तर भारत में व्यावहारिक रूप से लाभप्रद कृषि अर्थव्यवस्था के लिए मृदा प्रबंधन महत्वपूर्ण है। इस संदर्भ में, पूर्वोत्तर भारत में मृदा संबंधी समस्याओं की चर्चा कीजिए। इस समस्या के हल हेतु उठाए जा सकने वाले कुछ कदम सुझाइये।

- Northeast India has an undulating terrain, unfavourable climate, hilly slopes. There is very little availability of plain areas.
- The quality of soil is very poor due to heavy rainfall which leads to leaching of soil, making it infertile and not fit for cultivation.
- The practice of Jhuming (Shifting Cultivation) causes environmental degradation & also results in poor soil health.
- Problem of increasing soil acidity due to climate change is more severe in Northeast India.

Steps to Counter this Problem:

- Implementation of a comprehensive forest policy
- Contour bunding, terrace cultivation, can be adopted.
- Watershed development to prevent surface water runoff and to use water efficiently.
- Controlling soil erosion

- Promote organic farming.
- Promote Jungle Grass since that augments soil's organic matter content.
- Increase climate resilience of the Northeast region.

2. How does the plate tectonics theory help explain the formation of Himalayas and Deccan Traps?

प्लेट विवर्तिनिकी सिद्धांत किस प्रकार हिमालय और दक्कन ट्रैप्स के निर्माण की व्याख्या करता है?

Plate Tectonics is the theory which explains the formation of various geological forms through the movement of geological plates.

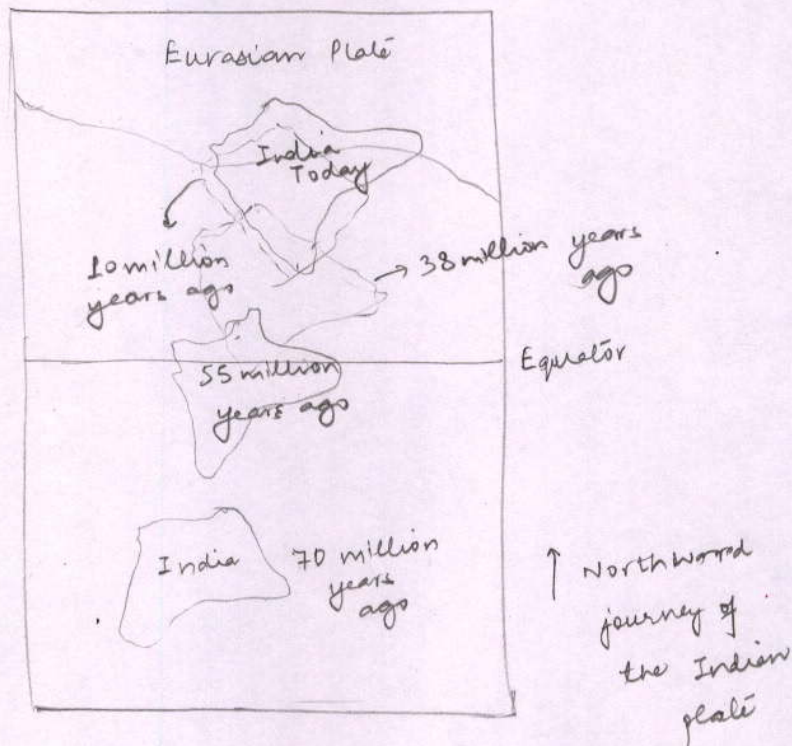
So Earth is divided into 7 major and 20 minor plates which are in continuous motion.

Himalayas were formed due to the movement of the ~~Austral~~ Indian plate towards the Eurasian plate. Continental - continental boundary formed led to folding which led to the emergence of Himalayas. This was a convergent boundary formed. Tethys sea at the mouth of the Indian plate emerged in the form of Himalayas. That's why we find remains of Tethys sea, oceanic origin in the Himalayas.

Deccan Traps were formed due to various fissure type volcanic eruptions when the Indian plate was

moving northwards. The differential speed of different parts led to the development of various cracks & through these cracks, the lava came out.

Especially when the plate was above the Volcanic Hotspot Area of the Reunion Islands, there were continuous eruptions leading to the formation of Deccan Traps.



3. In spite of being one of the largest producer of fish, there is still considerable scope of improvement in the fishery sector. In light of the above statement, discuss the problems and prospects of Fishery industry in India with respect to both inland and marine fisheries.

मत्स्य के सबसे बड़े उत्पादकों में से एक होने के बाद भी, मत्स्य-क्षेत्र में सुधार की अभी भी पर्याप्त संभावनाएँ हैं। उपरोक्त कथन के आलोक में भारत में अंतर्देशीय और समुद्री मत्स्यन दोनों क्षेत्रों में व्याप्त समस्याओं एवं संभावनाओं पर चर्चा करें।

Despite being one of largest producer of fish, India can do a lot to improve its fishery sector.

In India, 65% of the fishery constitute inland fisheries.

Problems :

- Tropical fish, produced by India, has low international demand.
- Lack of linkages like cold storage etc. - leading to huge post-harvest losses.
- Lack of proper fishing instruments & vessels.
- Absence of R&D support to inland fishery sector due to which the full potential is not harnessed.
- Deep water fishing is not developed.
- Extremely poor conditions of Indian fishermen.
- Conflicts with maritime neighbours like Sri Lanka over the fishermen issue.

Prospects :

- India has a long coastline. If the potential is properly & effectively harnessed, fishery development can provide employment to a lot of people and improve their living conditions.
- Infrastructure support needs to be developed.
- Development of forward link & backward linkages
- Credit availability to fishermen so they can buy fishing vessels
- Development of Deep Water Fishing, which is yet to be realised.

4. Vegetation in deserts and saline areas have highly specialized means of adapting themselves to the environment. Explain.

मरुस्थलों और लवणीय क्षेत्रों में पाई जाने वाली वनस्पति में स्वयं को पर्यावरण के प्रति अनुकूलित करने की अत्यधिक विशेषीकृत युक्तियाँ होती हैं। व्याख्या कीजिए।

Vegetation in deserts have several special features like:

- They have are xerophytic i.e. drought-resistant
- They have deep roots
- They have thick needle shaped leaves to minimise surface area available for transpiration.
- Have thick stems to store water for longer times.
- Produce during the brief wet season and die channelising all their energy into producing seeds, which have a thick skin for protection.
- Have thorns on their leaves to save themselves from predators.

Vegetation in Saline Areas also possess some features to better adapt to that environment.

- They have far-reaching, exposed roots, sometimes above-ground. It provides structural support & allows oxygen to be transferred to the roots below the ground.
- They complete their reproductive cycles during rainy

seasons when salt concentration is low.

- They have leaves with glands that excrete salt.
- They can restrict their stomatal opening to conserve fresh water.

5. Give an account of the distribution of cement industry in India and the factors that affect its location. Also trace the growth of cement industry in India.

भारत में सीमेंट उद्योग के वितरण और इसकी अवस्थिति को प्रभावित करने वाले कारकों का विवरण दें। साथ ही, भारत में सीमेंट उद्योग की वृद्धि की रूपरेखा भी प्रस्तुत कीजिए।

Distribution:

Cement Industry uses low value but heavy weight raw materials like limestone.

Since limestone is not present in the alluvial belt of Northern India, there ~~are~~ cement industry is not located here.

The belt along the Vindhyan range i.e. from Eastern Rajasthan to Jharkhand has limestone deposits and hence, presence of cement industry.

Factors that affect its location:

- Availability of raw material since it uses heavy weight raw material so proximity to the source is a major factor in determining its location.
- Well developed transport network
- Proximity to the market
- Availability of labour
- Water availability
- Availability of power.

6. Despite the enormous demand of electronics, the manufacturing of electronic goods has not been a feature of the Indian industry. Enumerate the reasons for the same. Suggest measures which are required to achieve the target of Net Zero Import by 2020.

इलेक्ट्रॉनिक्स की भारी मांग के बावजूद इलेक्ट्रॉनिक वस्तुओं का विनिर्माण भारतीय उद्योग का वैशिष्ट्य नहीं है। इसके कारणों को उल्लिखित करें। ऐसे उपायों का सुझाव दीजिए जो 2020 तक शुद्ध रूप से शून्य आयात का लक्ष्य प्राप्त करने हेतु वांछित हैं।

Reasons for slow growth of electronics manufacturing:

- It started very late. Earlier it was completely govt. owned. Picked up after reforms of 1991.
- Mismatch between demand & supply of engineers in terms of quality.
- Working capital required due to its capital intensive nature. Lack of credit availability for that.
- Non-availability of raw material
- Cheaper production in China
- ~~Delay~~ Red Taps - delay in environmental clearances etc., stringent labour laws.
- Lack of infrastructure i.e. power supply, transport network etc.

Measures required:

- Development of infrastructural support.
- Provision of credit to working capital becomes available.

- Link the industry and educational institutes to produce engineers with required skills.
- Make the clearance procedure easier by reducing bureaucratic interference. Have single-window clearance system.
- Reduce dependence on imports by developing indigenous industry.

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कुछ ना लिखें)

7. Agroforestry is seen as a solution to meet the challenges of food, nutrition, energy, employment and environment security. Elucidate.

कृषि-वानिकी को भोजन, पोषण, ऊर्जा, रोजगार और पर्यावरण सुरक्षा की चुनौतियों के समाधान के रूप में देखा जाता है। स्पष्ट कीजिए।

Agroforestry refers to the practice of growing trees along with crops in the farms. This practice of agroforestry has several advantages.

- It helps increase the income of farmer.
- Farmers get extra produce from trees like timber + fruits which he can sell in the market and earn money.
- Trees prevent soil erosion thus, preserving the quality of soil in the farms.
- It provides employment in all seasons thereby enhancing the economic prospect of farmers.
- Trees help in controlling pollution as they act as natural filters.
- Helps farmers diversify their income sources protecting them from extreme conditions like drought etc.
- Helps restore the ecological balance of the area.
- Rural needs of fuel, fodder + timber are also satisfied.

Thus, agroforestry has a lot of benefits and govt. should promote it by incentivising farmers by giving free seeds, credit, insurance facilities etc.

8. Explain the phenomenon of Tsunami formation and highlight reasons for India's vulnerability to Tsunamis. List some measures to mitigate the impact of Tsunamis.

सुनामी उत्पन्न होने की परिघटना की व्याख्या कीजिए और सुनामी के प्रति भारत की सुभेद्यता के कारणों पर प्रकाश डालिए। सुनामियों के प्रभाव का न्यूनीकरण करने हेतु कुछ उपायों को सूचीबद्ध कीजिए।

Tsunamis are waves formed whenever a large amount of water is displaced due to under-water Earthquakes, volcanism etc.

Sea-floor Earthquakes lead to large displacement of water inducing the formation of waves called Tsunamis. They have small amplitude in open waters but as they approach the shore, the water gets squeezed causing very high waves.

Other factors that can cause a Tsunami include volcanism, Meteorites, Landslides.

Reasons for India's vulnerability:

- Indian plate is breaking away from the Australian plate making the area around Indonesia seismically active, thereby increasing the chances of tsunamis getting generated from there.
- Long coastline of the Indian territory
- High population residing in the coastal areas

- Lack of disaster-proof infrastructure in the country.
- Lack of clarity on assigned roles to various agencies during a disaster.

Measures to Mitigate :

- Well developed early-warning systems in place.
- Growing of mangroves along coasts which act as natural barriers.
- Development of artificial barriers.
- Spreading awareness among the local community about tsunamis.
- Mock drills at regular intervals to check preparedness.

9. Explain the role of Himalayas in influencing the climate of South Asia. Enumerate the changes observed recently in the Himalayan region with respect to climate and geomorphology. What are the possible anthropogenic causes behind them?

दक्षिण एशिया की जलवायु को प्रभावित करने में हिमालय की भूमिका की व्याख्या कीजिए। हिमालयी क्षेत्र में जलवायु और भू-आकृतिविज्ञान के संबंध में हाल ही में चिन्हित किए गए परिवर्तनों की गणना कीजिए। इनके पीछे संभावित मानवजनित कारण क्या हैं?

Himalayas act as a climatic divide between the Indian subcontinent and Central Asia.

- Himalayas divide the Jet stream into northern & southern branches. Monsoon winds proceed only when the southern branch withdraws.
- Himalayas cause the monsoon winds to cause rain in the subcontinent.
- They prevent the cold winds from Central Asia from entering the subcontinent thereby preventing extreme cold conditions.
- The snowfall in Himalayas causes cold winds in Northern India.

Changes Observed :

- The average annual temperature has increased, due to climate change.
- The rainfall pattern has become erratic.
- Tree line is shifting to higher altitudes.
- Snowfall was reduced.

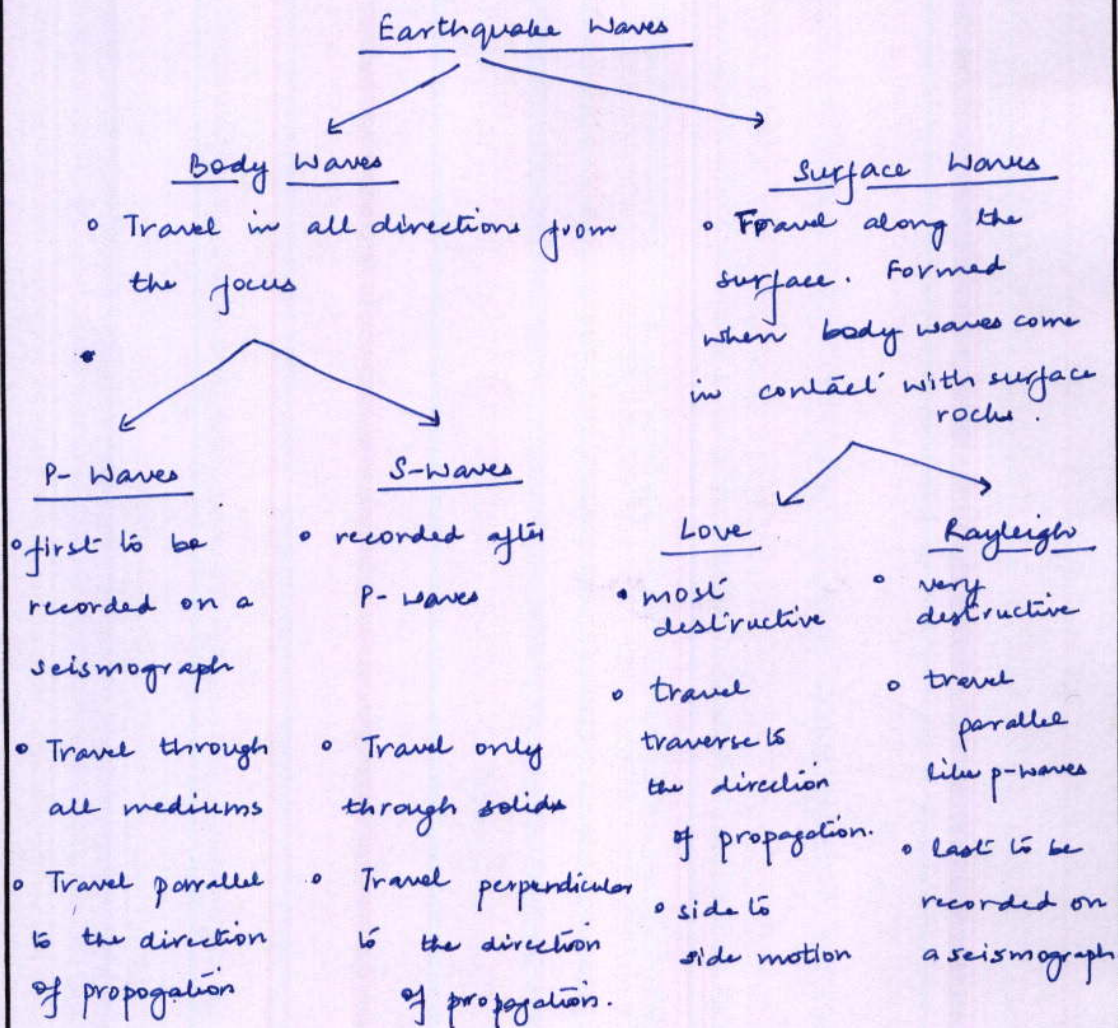
- Diversion of rivers has affected natural flows.
- Frequency of hazardous events has increased.

Possible Anthropogenic Causes:

- Increased emissions of Green House Gases which are causing the Global Temp. to rise over its pre-industrial levels.
- Development of various dams causing diversion in rivers affecting their natural flow.

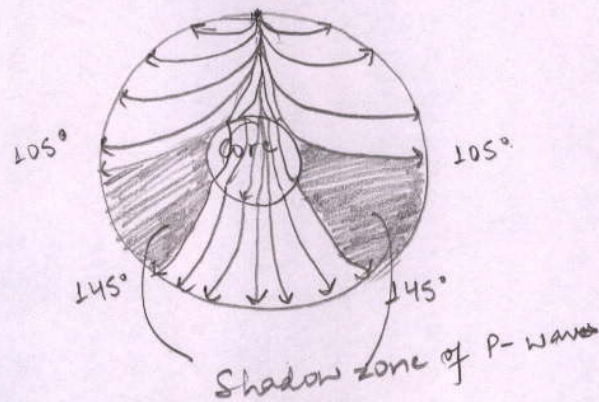
10. Explain the different types of earthquake waves and the concept of shadow zone. What inferences can we draw from shadow zones regarding the interior of the Earth?

विभिन्न प्रकार की भूकम्पीय तरंगों और छाया क्षेत्र की अवधारणा की व्याख्या कीजिए। पृथ्वी के आंतरिक भाग के संबंध में छाया क्षेत्रों से हम क्या निष्कर्ष निकाल सकते हैं?

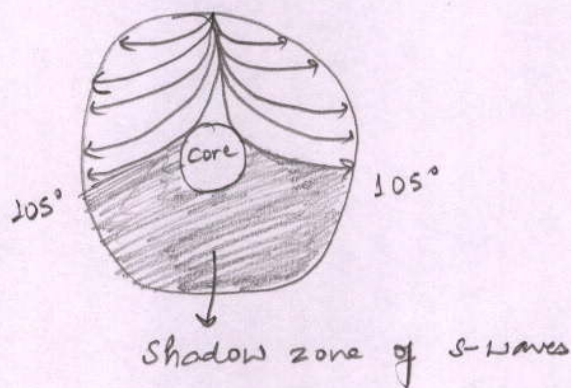


Shadow Zone is the area on the surface of Earth where waves are not detected.

For P-Waves, it is between 105° & 145° in either direction.



For S-waves, it is the entire area lying between 105° on either sides.



Shadow zones help us know about the interior composition of Earth.

Since we know that S-waves cannot travel in liquid, looking at its shadow zone help us identify the boundary between mantle and core. It tells us that the outer core is liquid since S-waves cannot travel through it and P-waves suffers refraction due to change in density in different mediums.

11. Explain the difference between chemical weathering and physical weathering. What is the ecological and economic significance of weathering?

रासायनिक अपक्षय और भौतिक अपक्षय के बीच अन्तर की व्याख्या कीजिए। अपक्षय का पारिस्थितिक और आर्थिक महत्व क्या है?

Weathering refers to the action of climate or weather on rocks leading to their disintegration & eventually, formation of soil.

Physical weathering refers to the disintegration of rocks under mechanical pressure. It generally happens due to thermal expansion & contraction or due to release of pressure due to removal of a rock structure above.

Chemical weathering refers to the disintegration of rocks due to chemical processes. Presence of water, air & heat speeds up the process.

Various processes involved include hydration, solution, carbonation, oxidation and reduction.

eg. solution seen in Karst topography since limestone dissolves in water.

So, both physical & chemical weathering processes occur simultaneously. Chemical weathering weakens

the rock and physical weathering disintegrates it.

Ecological Significance :

- It leads to the formation of the Top soil, the most important component of lithosphere.
- The entire vegetation of an area depends on the soil so in a way, weathering determines the vegetation of an area.

Economic Significance :

- Weathering leads to formation of various minerals, making extraction of metals from it easier.

12. Tropical regions are not only the most resource rich but also one of the most underdeveloped regions of the world. What are the factors responsible for this? How have some of the tropical countries turned their natural limitations to their advantage? Illustrate.

उष्णकटिबंधीय क्षेत्र न केवल सर्वाधिक संसाधन संपन्न हैं वरन् विश्व के सर्वाधिक अविकसित क्षेत्रों में से भी एक हैं। इसके लिए कौन-से कारक उत्तरदायी हैं? कुछ उष्णकटिबंधीय देशों ने अपनी प्राकृतिक रूकावटों (बाधाओं) को स्वयं हेतु लाभप्रद स्थितियों में किस प्रकार परिवर्तित किया है? व्याख्या कीजिए।

Tropical regions are underdeveloped due to various factors:

- Presence of extremely dense forests which makes it very difficult to clear it for other activities.
- They can also not be cleared for ecological reasons since they support a very rich biodiversity.
- Presence of very poor quality soil in tropical areas due to continuous rain.
- Presence of hardwood which is difficult to transport.
- Technology is not as developed in tropical areas as it is in developed parts of the world.
- More prevalence of diseases compared to temperate areas.

Some tropical countries like India have turned their natural limitations into advantage through:

- Earning money through Carbon Trading till they have ~~use~~ low levels of emissions.
- Promoting Ecotourism eg. Kerala
- Development of Solar Energy by tapping the solar potential of tropical areas.

13. Coral reefs are the most biologically diverse and economically valuable ecosystems on earth. Elaborate. Discuss the factors responsible for the decline of coral reefs across the world. Also, list some measures that have been taken for their preservation.

प्रवाल भित्तियाँ पृथ्वी पर जैविक रूप से सर्वाधिक विविधतापूर्ण और आर्थिक रूप से मूल्यवान पारिस्थितिक तंत्र हैं। सविस्तार व्याख्या कीजिए। विश्व में प्रवाल भित्तियों की कमी के लिए उत्तरदायी कारकों की चर्चा कीजिए। साथ ही, उनके संरक्षण हेतु किए गए कुछ उपायों को सूचीबद्ध कीजिए।

Coral Reefs are so productive that they are called the "Tropical Rainforests" of the Oceans.

Coral Reefs are extremely valuable because:

- They provide shelter to a lot of species. No other ecosystems supports such large biodiversity.
- It provides food to various marine animals.
- Act as barriers along a shoreline against wave action thereby protecting coastal areas.
- Promote fishing activities since they support various species of fish.
- Coral Reefs are extremely important as a source of development of future medicines of 21st century.
- Provide employment to local people by promoting tourism due to its scenic beauty.

Factors responsible for decline:

- Encroachment of coastal areas with nearby coral reefs endangers them.

- Coral Reefs are sensitive to temperature changes & a variation leads to their bleaching.
- Presence of chemicals in water leads to coral bleaching.
- Increase of CO_2 in atmosphere leads to the formation of Carbonic Acid when dissolved in water & this Carbonic Acid dissolves their calcium carbonate.
- Over-fishing & tourism also adversely affects reef species.

Measures Taken:

- International Cooperation through UN to protect coral reefs.
- India has notified the Coastal Regulatory Zone Rules to protect corals.
- Establishment of National Coastal Zone Authority, State Coastal Zone Authorities.

14. Despite EIA being a useful policy tool for sustainable development, deficiencies in its design and implementation have prevented it from realising its potential. Discuss.

संभारणीय विकास के लिए एक उपयोगी नीतिगत उपकरण होने के बावजूद, पर्यावरणीय प्रभाव आकलन (ई.आई.ए.) की अभिकल्पना (डिजाइन) और कार्यान्वयन संबंधी कमियों ने इसकी सम्पूर्ण क्षमता को साकारित होने से बाधित किया है। चर्चा कीजिए।

Environmental Impact Assessment (EIA) is a procedure to see assess whether a particular developmental activity or project will have a positive or negative impact on the environment.

If properly implemented, i.e. if it is treated as a project planning tool and not just something to justify the projects, it can prove to be extremely useful for promoting sustainable development, which is the need of the hour.

But both design and implementation of EIA suffers from deficiencies in India.

- Misutilisation of exemptions
- Lack of expertise of Impact Assessment Agencies
- Lack of involvement of NGOs
- Poor transparency & accountability
- Gram sabhas are not aware & provide approval under pressure.

- ° Data is manipulated sometimes.
- ° Funds manipulation

These deficiencies should be worked on so EIA can be used as an effective policy tool for sustainable development, as it was intended to be.

15. According to the Indian Fertiliser Scenario 2014, the use of urea in India has increased by more than 50 per cent since 2000. How does human intervention turn nitrogen from a nutrient to a pollutant? Discuss the impacts of nitrogen pollution on environment and human health. Also, explain how nitrogen pollution can be managed.

भारतीय उर्वरक परिदृश्य 2014 के अनुसार, भारत में यूरिया का उपयोग सन् 2000 के बाद 50 प्रतिशत से अधिक बढ़ गया है। मानवीय हस्तक्षेप किस प्रकार नाइट्रोजन को एक पोषक तत्व से प्रदूषक के रूप में परिवर्तित कर देता है? पर्यावरण और मानव स्वास्थ्य पर नाइट्रोजन प्रदूषण के प्रभावों की चर्चा कीजिए। साथ ही, व्याख्या कीजिए कि नाइट्रोजन प्रदूषण का प्रबंधन किस प्रकार किया जा सकता है?

Nitrogen is one of the most essential nutrients required for the plants' and crop growth.

But due to the highly subsidised urea to the farmers, its use has been over what is good for soil health.

The optimal N:P:K ratio is supposed to be 4:2:1 but in our country, it is as high 8.4:3.2:1 which shows that urea is overused due to its cheaper availability.

Impact of Nitrogen Pollution :

- Causes various respiratory diseases in humans.
- Causes diseases like the blue baby syndrome
- Causes acid rain
- Causes photochemical smog in the presence of ozone, hydrocarbons and sunlight.

- Affects process of photosynthesis in plants.

How Nitrogen Pollution Can be Managed :

- Nitrogen pollution mainly occurs due to vehicular emissions so shifting to BS VI standard can help in reducing its emission.
- Farmers should be made aware of the negative effects of excessive use of urea advising them to self-limit its use.
- Rationalising the subsidy on urea.

16. Temperate grasslands are called 'Granaries of the world'. Elucidate. How have the farming practices adopted in these regions impacted the environment?

शीतोष्ण घास के मैदानों को 'विश्व के अन्न भंडार' कहा जाता है। स्पष्ट कीजिए। इन क्षेत्रों में अपनायी गई कृषि प्रथाओं ने पर्यावरण को किस प्रकार प्रभावित किया है?

Temperate Grasslands eg. Steppes in Central Asia, Prairies in North America, Pampas in Brazil, Downs in Australia, Velds in South Africa are the areas

- with most fertile soils in the world.
- They have favourable climate suited for the cultivation of wheat, corn etc.
- Large farms size in these areas has helped in the development of commercial agriculture.
- Mechanisation of agriculture resulting in making agriculture a lucrative option.

But the farming practices adopted in these regions have had adverse impacts on the environment.

- Destruction of the original grassland completely to make it available for cultivation affects its ecosystem.
- Loss ⁱⁿ quality of soil in these areas in recent areas.

- Loss of pasture lands for cattle
- Loss of biodiversity due to the ~~much~~ encroachment of agriculture into its habitat.
- Changes in weather over time.

17. Enumerate the global targets and priorities for action of the Sendai Framework for Disaster Risk Reduction. Discuss the positive features and limitations of the framework.

आपदा जोखिम न्यूनीकरण हेतु सेनडाई फ्रेमवर्क के अनुरूप कार्रवाई के लिए वैश्विक लक्ष्यों और प्राथमिकताओं की गणना कीजिए। इस फ्रेमवर्क की सकारात्मक विशेषताओं और सीमाओं की चर्चा कीजिए।

Sendai Framework for Disaster Risk Reduction (2015-30)

succeeds the Hyogo Action Plan. It has seven targets and four priorities for action.

Its targets include :

- Reduction in number of people affected by disasters.
- Reduction in deaths caused due to disasters.
- Reduction in economic loss during a disaster
- Increasing global cooperation
- Increasing early warning systems etc.
- Reduce damage caused to critical infrastructure & basic services due to a disaster
- Increasing number of countries with national & local risk reduction strategies.

Priorities:

- ① Understanding the various aspects of disaster in a holistic manner.
- ② Increasing the Disaster Risk Governance to

manage the disaster at all levels.

- ③ Investing in disaster risk reduction.
- ④ Enhancing preparedness for better response and "build back better" during rehabilitation and reconstruction.

Positive Potential features :

- shows global commitment during towards disaster risk reduction.
- helps achieving Sustainable Development Goals.
- Decentralised i.e. people-centric approach is adopted.
- Involvement of private sector.

Limitations :

- It is non-binding (voluntary) in nature.
- No specific targets are mentioned.
- Low financing commitments from rich nations.

18. What is a heat wave? Discuss the health impacts of heat wave in India. Analyse the reasons behind high incidence of mortality rates due to heat wave in India. Suggest measures to tackle the above problem.

हीट वेव (ऊष्ण लहर) क्या है? भारत में ऊष्ण लहर के स्वास्थ्य संबंधी प्रभावों की चर्चा कीजिए। भारत में इस घटना के कारण उच्च मृत्यु दरों की घटना के पीछे विद्यमान कारणों का विश्लेषण कीजिए। उपर्युक्त समस्या का समाधान करने के उपाय सुझाइए।

Heat Wave is the observance of exceptionally high temperature in an area for a period longer than usual. Its occurrence has increased due to climate change. Heat waves are extremely harmful for the human health.

It causes :

- Dehydration
- Heat Exhaustion
- skin problems
- Irritation
- Heat Stroke
- Even death in some cases.

Reasons for high incidence of mortality due to heat wave in India :

- Prevalence of poverty in India
- High population esp. in North-western India where heat waves are the most common.
- Lack of shelter which exposes people to high temperatures.

- Lack of medical facilities to attend to the victims.
- continentality leads to extremeness of weather causing more deaths in North-Western India.

Measures to Tackle the problem:

- People should be made aware of the risks involved + advised to stay indoors and consume lots of liquids etc.
- Govt. can supply subsidised oral rehydration solution.
- Development of medical facilities.
- Provision of shelters to poor
- overall development of the population in general leading to a reduction in poverty and better standard of living.

19. "Rising accidents involving merchant ships leading to oil spills in Indian waters is a growing concern that needs to be addressed." Discuss the impact of oil spills on marine environment. Also, suggest measures to prevent such disasters.

"व्यावसायिक जहाज संबंधी दुर्घटनाएँ निरंतर बढ़ने के कारण भारतीय जलीय क्षेत्र में तेल रिसाव की चिंता उत्पन्न हो रही है, जिसका समाधान करने की तत्काल आवश्यकता है।" समुद्री पर्यावरण पर तेल रिसाव के प्रभावों की चर्चा कीजिए। साथ ही इस प्रकार की आपदाओं का निवारण करने हेतु उपायों का सुझाव दीजिए।

Impact of Oil Spills :

- Affect both flora and fauna of the marine environment
- If it leads to loss of food of some species, they will have to relocate and there is an increase in competition for the available food.
- Leads to digestion problems among animals.
- Affects respiration of marine animals. Dolphins, whales etc. have to come to the surface to breathe.
- Adversely affects the skin of the animals
- In some instances, can even cause death

Measures to prevent :

- Ships shouldn't be allowed in the risky weather to go to the ocean.
- Ships should be equipped with good navigation systems so such instances can be avoided.

- Adherence to National Oil Spill Contingency Plan 1996
- The protocol should be properly followed.
- Use of bacteria like oilzapper etc. in case of oil spills to minimise the damage to the marine environment.

Recent oil spill in Chennai when oil came to the beaches demonstrated the increasing magnitude of this problem in recent times.

20. Forest fire pose a threat not only to the forest wealth but also to the entire regime of flora and fauna. What are the causes of forest fire? Discuss the ecological, economic and social impacts of forest fires.

दावानल (जंगल में लगने वाली आग) न केवल वन सम्पत्ति बल्कि क्षेत्र की संपूर्ण वनस्पतियों और जीवों के लिए भी खतरा प्रस्तुत करती है। वनों में आग लगने के कारण क्या हैं? दावानलों के पारिस्थितिक, आर्थिक और सामाजिक प्रभावों पर चर्चा कीजिए।

Causes of forest fire :

- Dry leaves, high temperature, low rainfall
- Wax from pine leaves which is very flammable
- Fire accidents caused by human error
- Shifting agriculture

Forest fires affect the entire regime of flora and fauna in addition to the forest wealth. It has an impact on all aspects.

Ecological Impact :

- Forest fires destroy the natural vegetation & fauna of the forest.
- They have a positive impact on ecology. They return nutrients to the soil.
- They act as a natural disinfectant.
- Forest fires help the growth of new seedlings by destroying trees which permits the sunlight to reach the floor.

Economic Impact:

- Forest resources like timber, fruits, wax etc. get destroyed.
- Affects the communities dependent on forests for their livelihood.
- Loss of forest wealth.

Social Impact:

- Loss of lives & property.
eg. forest guards' lives are put at danger.
- Local communities get adversely affected.
- The recent death of the forest guard in a forest fire in the forest of Madhya Pradesh tells us the grave dangers posed by forest fires.
- Health problems due to release of sulphates, PM2.5 etc.

