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GENERAL STUDIES (TEST CODE : 845)

Name of Candidate	Anmol Shee Singh Bedi		
Medium Hindi/Eng.	English.	Registration Number	24247
Center	ORN	Date	3 July'16

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:

Signature of Examiner

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
2. There are TWENTY questions printed in ENGLISH.
3. All questions are compulsory.
4. The number of marks carried by a question/part is indicated against it.
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.
6. Word limit in questions, if specified, should be adhered to.
7. Any page or portion of the page left blank in the Question-Cum-Answer Booklet must be clearly struck off.

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

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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.

Soil management is critical to the development of farming - agriculture in NEast in several ways

1. The soil in mountainous regions of N-East is invariably Montane soil, which is not extremely fertile
2. The thin cover of soil present, is easily eroded by action of river water, wind etc
3. Also, several tribal communities are dependent on certain areas in which primitive subsistence agriculture is practised. In primitive subsistence agriculture, the tribal communities keep on shifting their land areas after it loses its fertility Vast tracts of forests lands are invariably cleared for practicing agriculture, thus leading them vulnerable and prone to erosion.
4. Also, NEast has vast number of fast flowing rivers, ex Tista Brahmaputra, Barak etc which frequently flood and cause great destruction to property and life. The flooding waters completely submerge vast tracts of land, thus rendering them uncultivable.
5. In context of these problems, it is integral for NE communities to participate in processes of soil management.
   - Afforestation in areas around river courses to check seasonal flooding of areas in N-East
   - Adopting soil protection strategies like contour ploughing in

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plain areas of Assam to check undue erosion

- Using contour bunding and similar strategies
- Regulation of activities of tribal communities to ensure that primitive subsistence agriculture does not lead to adverse effects on soil.

- Recently sikkim has been declared as an organic farming state, where agriculture is invariably done without the use of excessive fertilizers, pesticides, weedicides.
- Similar strategies in other states can be adopted for soil management and prevent the growing use of fertilizers.

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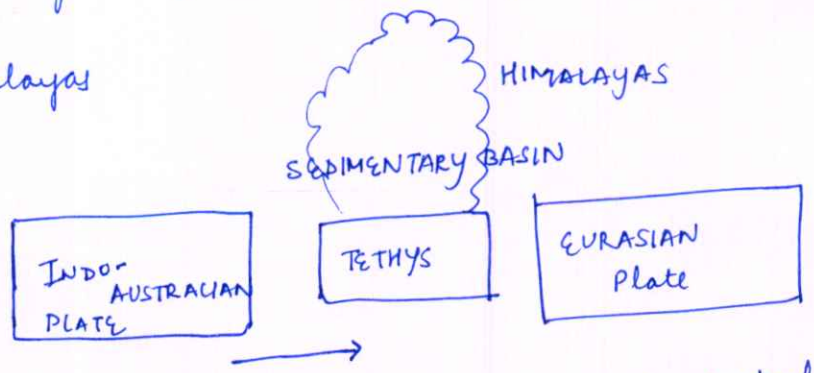
2. How does the plate tectonics theory help explain the formation of Himalayas and Deccan Traps?

- The plate tectonic theory, provides a substantial evidence explaining the formation of Himalayas and Deccan traps

Himalayas



- The Indian Landmass formed the part of erstwhile Gondwana land, including madagascar, Australia, Eastern Africa, Antarctica and South America.
- In the mesozoic era, the Indian Landmass gradually moved towards the Eurasian plate, that had Tethys sea composed of sedimentary rocks
- The collision of Indian plate with the Eurasian plate was responsible for the formation of Himalayas, which is composed of metamorphosed sedimentary rocks of Tethys sea basin.
- The Indian Landmass continues to form converging boundary with the Eurasian plate, moving with a speed of 15cm per year. This means that Himalayas are still gradually developing, and are bound to grow.
- The Indo Australian plate is also subducted ~~at~~ under the Eurasian plate, although not completely. This lead to

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certain portion of Eurasian plate being uplifted vertically up forming Tibetian plateau.

Deccan traps.

- According to plate tectonic theory, the formation of volcanoes and basaltic plateau all across the world can be explained by 'HOTSPOTS' around the Earth.
- At the trenches, which are subduction areas of oceanic crust under the continental crust, vast amounts of crust is consumed. This excessive molten crust finds its ways back on Earth, through certain concentrated locations of divergence forming magmatic plumes and basaltic plains.
- The positioning of Indian Landmass over this magmatic plume, led to series of intensive fissure volcanoes in the peninsular landmass of India, thus leading to layered formation of Deccan traps.

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3. Inspite 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.

- India is one of the largest producer of aquatic products and marine organisms, because of a long coastline of 7500 km long coa. Because of geographical ~~location~~ and geostrategic location, India has an integral position in global fishing industry.
- In the recently released Meena kumari committee report various problems faced by Indian fishing industry were discussed and various recommendation were made.
- India's fishing industry continues to be poorly equipped which is invariably done by traditional fishing communities.
- The technology used is vastly primitive, which undermines the potential of fishing in INDIA.
- The inland fisheries in India face threat from excessive pollution of organic and inorganic form leading to biological magnification and concentration of chemicals rendering them unfit for human consumption.
- The fishing industry is vastly monopolized by certain people, not allowing foreign competition and capital to be invested in Indian fisheries industry.
- In several countries of Europe like UK, Denmark, Belgium and Netherlands, deep sea fishing is extremely popular. But it can only be done using advanced scientific instruments

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which the Indian industry is sorely lacking.

SOLUTIONS

- As proposed in the same report, there is a need to attract foreign investment and capital in modernizing native fishing industry.
- India, also should fairly promote investment in deep sea areas employing scientific instrument
- For sustance and welfare of tribal communities seperate areas should be demarcated, where fishing by coastal communities should all be permitted to do fishing.
- The government should proactively engage with other countries like Japan, west European countries for technology transfer of deep sea fishing for efficient exploitation of resources
- Sustainability and long term ecological consequences shall be kept in mind for a successfull and a prosperous fishing industry.

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

- Every living being, whether plants and animals have special modification characteristics to survive in extreme conditions.
- In desert areas of the world, Xerophytic plants exhibit characteristics, which enable them to survive in extreme weather conditions
- In desert areas, leaves of plant reduce to thinly pointed leaves, which are incapable of taking part in photosynthesis.
- The stem invariably becomes modified to do photosynthesis. to ensure that transpiration is checked to reduce water loss
- Also in desert areas, the plant secrets various stress alleviating proteins like chaperonins and proline to protect themselves from high temperature and condition of acute water shortage
- The stems, also is responsible for storing excess water, to be used later.
- The plants also change and modify their ways and means of photosynthesis, by adopting a variable and efficient Carbon cycle for the process of photosynthesis.
- The roots of plants, go deep within the soil to search for traces of water. etc

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In case of saline areas, vegetation adapts to it by various strategies as described below.

- Prop and stilt roots : Many trees like the sundari tree of Mangrove forests, which has the rare characteristic of running in saline areas, develop this mechanism to prevent saline water.
- Hanging fruits and seeds to protect themselves from saline water
- Secretion of various proteins like proline, glycerol to protect themselves from saline and marshy conditions.
- The leaves and stem becomes highly specialised in photosynthesis, transferring food, energy to the roots.

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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.

- The cement industry in India has evolutionized itself over the years, and has seen tremendous growth and development.
- Before the Liberalisation, privatisation and globalisation paradigm 1991, the cement industry was highly regulated and industrial licenses were required for production of cement.
- The use of cement and other vital ancillary products were highly regulated by the government, thus not realising the true potential of the segment.
- After 1991, the use of industrial licenses was gradually relaxed, giving greater scope of private investment, along with participation of foreign enterprises, the development of cement industries has gradually taken pace.
- India is one of the largest producer of cement in the world, with the gradual development of infrastructure projects, need of new infrastructure in terms of highways, roads, the future of industry looks bright.
- The cement industry is located in India at places where abundant raw materials are available.
- Transportation, along with cheaply available electricity

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are some of the important characteristics that regulate the positioning of cement industry in INDIA.

- cheaply available labor also is a necessary factor for cement industry.

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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 acheive the target of Net Zero Import by 2020.

- The past decade has seen tremendous growth and development in the electronics industry in the world.
- With the gradual development of technology, there has been a great dynamism attached to electronics industry, which has been a source of new developments.
- Although India is exporter of Information Technology and in sector of allied area, it suffers from slow investment and equal development in Hardware industry.
- As a result, Hardware industry in INDIA has remained backward and not competitive at world level.

Slow growth and technological backwardness in hardware sector is the most prominent reason. ~~for~~.

- Lack of proper ecosystem for development of hardware sector including electronics and communications is also responsible factor.
- Lack of skilled labor has also been one of the reasons of slow growth of the sector.
- High initial investment along with lack of coherent government policy and incentives is also a responsible factor

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- In sync with 'Make-IN INDIA' iniative the government has envisaged a new policy of "Net zero import" by 2020 to give a filip to the industry.
- Development of infrastructure by and coherent policy comprising of all factors is required.
- Several government iniatives like 'Nayi Manzil' scheme, Deen Dayal Upadhaya Kaushal Vikas Yojona has taken the challenge of training of Indian youth, to ensure that their is availability of cheap labor
- Government led incentives, like subsidised land and specially developed technological parks can play an important role
- Government can provide cheap loans to undercut the costs of initial investment, thus promoting Indian electronics industry.

In lieu of these factors, the govt declined the request of Apple to open retail stores in INDIA and asked it to ensure that "30% of content used in IPhones" should be locally sourced.

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

- Agro forestry involves comprehensive set of strategies to ensure widespread rejuvenation of environment, providing energy, employement, nutrition and keeping in mind the overall survival of ecosystem.
- Agro forestry involves cultivation, plantation of trees around agriculture areas and other allied strategy to ensure specific advantages.

1. control erosion. The trees around the agricultural farm control, break the regular flow of wind thus stopping the uniform flow

2. energy: The trees planted around are a source of energy in the form of wood e. The plantation of trees can also take place in community owned areas or private areas/ farms dependent on th condition.

- Local communities derive benefits, not only in form of energy but also economic benefits are derived from trees, in terms of specific plants and herbs.
- Naturally plantation of trees, lead to overall regeneration, growth of environment providing benefits and overall community development.

In terms of environment, they enrich the ecosystem.

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- In terms of ~~food~~ monetary benefit, Agroforestry directly leads to economic ~~benefits~~ return by building alternate sources of income.

The farmer now is not exclusively dependent on farm agriculture but has an alternate way of earning. This has given tremendous independence, social security to plants

- Ecologically, Agroforestry leads to beautification of several region, thus bolstering environmental, ecological value of an area.

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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.

- The Tsunami - or also called as 'killer waves' are formed due to under water tectonic activity or disturbance causing ripples of energy in ocean waters.
- The vast amount of energy released, as a result of such activity, leads to sudden manifestation of waves that are violent and cause huge distruction of life and property.
- The tectonic activity beneath the oceans, is related to subduction zones of oceanic crust under continental plates.
- Tsunamis can also be triggered via volcanic activity under oceans which is violent and distructive in nature.
- Under deep ocean, Tsunamis are not formidable due to great depth and volume beneath, but when it reaches coast, it suddenly grows in heights above 50metres and becomes violent, submerging underneath vast tracts of land and causing huge damage to life and property.
- The tsunami incident of 2004, highlights India's vulnerability to tsunamis. Before 2004, the Tsunamis were not considered by the High powered committee on "envisaging disaster management framework" while

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characterisation and grouping of disaster.

- Deep sea trenches near the coast of Indonesia and phillipines can be a major source of earthquake induced Tsunami.
- In lieu of dangers and vulnerability involved, India has installed a comprehensive "Indian Tsunami Early warning system" for early detection of Tsunamis. (ITEWS)
- International cooperation, through forums like IOR-ARC (Indian Ocean Region - Association of Regional countries should be promoted for collaborative action and relief measures.
- Use of advanced satellites, information technology, communication strategies should be employed to fully harness the advancements made.
- Earth based warning dissemination system should be employed, to give live warning to nearby coastal living communities for disaster preparedness, mitigation.
- Highly developed institutional mechanisms should be developed for ready response, rehabilitation and relief.

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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 ?

- Himalayas plays an important role in influencing the climate of India. It is because of Himalayas, that India invariably has a sub tropical climate. Cold winds from Northern Siberia, Tibetian plattau are not able to enter India due to lofty height of Himalayas
- Himalayas, also significantly are responsible for easterly jet stream developed over Indian subcontinent triggered by a 'warm-High' over the Tibetian plattau.
- Himalayas also play an important role, by directing the Bay of Bengal branch of south west monsoons towards the INDIAN subcontinent, thus ensuring precipitation over the INDIAN landmass.
- In summers, Himalayan landmass provide relief to nearby areas due to cold winds emanating from snow capped mountains. (EFFECTS)
- Due to anthropogenic activities, the Himalayan region has faced excessive deforestation, growth of monocultured crops and trees in place of indigenous trees.
- Anthropogenic activities, like the release of GHG's has brought tremendous rise in world temperatures, thus leading

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to melting of snow capped mountains.

- Melting of snow capped mountains has lead to flooding in lower stretches of perennial river systems, thus displacing vast communities and population.
- The Deforestation has also been one of the major causes of landslides and other allied mass weathering movements leading to frequent accidents and ancillary disasters.

~ Under the NAPCC ~ National Action plan on Climate change special emphasis has been laid to sustenance of Himalayan ecosystems under the primary umbrella programme.

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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?

- There are generally three types of characterization of earthquake waves. These waves exhibit unique characteristics and properties.

  1. P waves – Primary waves
  2. S waves – Secondary waves
  3. Surface waves

- Primary waves are longitudinal waves and are the first ones to to reach Earth in sudden Earthquake shaking.
- They are similar to sound waves, and hence can pass through solid, liquid and gas medium. They have the quickest speed and therefore reach the epicentre in the shortest time possible.
- They are known to pass with highest speed through the Barysphere (inner core) which is solid rock composed of Molten iron + Nickel.
- Secondary waves are transverse waves, they are slower than P waves. They cause greater destruction, shaking than Primary waves
- They cannot pass through molten liquid material, hence they do not pass through outer core composed of molten iron + Nickel. The S waves exhibit property of shadow zone,

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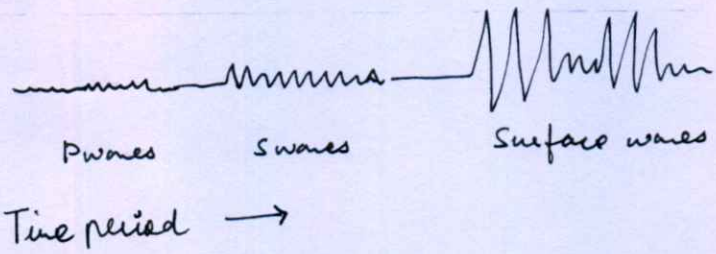
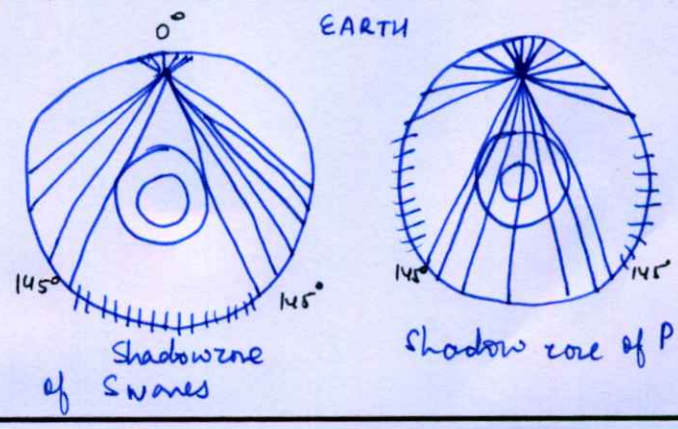
- Surface waves are similarly, most destructive waves causing vibration with maximum amplitude

It is responsible for soil liquefaction in case of areas with huge deposition of alluvial soil, further strengthening the earthquake waves.



- SHADOW ZONE
- From the prevalence of shadow zones, we can infer that Earth is not composed of uniform material and element and it is highly variant and diversified.
- The major external part of Earth's crust and mantle is solid in nature because both S waves and P waves travel through it.
- The internal part of crust is composed of both solid and liquid material, because S-wave pass through external core thus providing an indirect evidence of nature of Earth.



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

- Weathering can be defined as physical, chemical, biological decomposition and breakdown of rocks via the action of geomorphic agents like wind, water, organisms etc
- Chemical weathering involves, decomposition of rocks and their corresponding breakdown via the chemical action of particular substance.
- For ex the action of water on gypsum $(CaSO_4) \cdot 1/2 H_2O$ converts it into unstable compound. thus leading to its break down.
- Thus chemical weathering like processes of carbonation, Hydration, reduction and oxidation lead to decomposition.

Physical weathering on the other side involves break down of rocks due to release of strain, pressure or certain force

For example exfoliation domes present in various places in Andhra Pradesh have been developed due to abandoning of overlying rock material leading to vertical release of pressure and development of fault lines parallel to the ground leading to breakdown of overlying rock strata.

Physical weathering can also occur due to persistent action of geomorphic agents of wind, water and even due to glacial action.

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- Ecologically, weathering is an important process, activity that leads to formation of soil, which is used for agriculture and farming.
- Weathering is responsible for decomposition of rocks, thus the creation of top layer of fertile soil. Agriculture as an economic activity is highly dependent on the fertility of underlying soil
- Weathering is also responsible for presence of certain special compounds, used for economic purposes.
- Ecologically - weathering acts against the ~~[illegible]~~ landform created due to endogenous forces, thus responsible for creation of plain relief, which are suitable for settlement of humans.

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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.

0 Tropical regions are one of the most underdeveloped regions of the world because of several factors.

1. Extreme weather conditions. Under extreme weather conditions, they are not favorable ~~to~~ for human settlement and survival

2. Because of extreme conditions, they are places suitable for growth of various bacteria, protozoa and parasites, thus leading to vast epidemics in these areas.

3. Historical reasons - Most of the countries, in equatorial region were colonized by Europeans, thus there is overall low development of Human Indices.
For centuries, their resources have been exploited by foreign colonizers for their own usage

4. The regions are drained by vast rivers, which are prone to seasonal flooding, and hence is an obstacle to development of equatorial region.

- Various African Countries, INDONESIA, Southamerican countries, have turned their limitations to their advantage
With greater, sovereignty, autonomy, the countries

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have tremendously invested in bolstering human capabilities

- The equatorial climate has been used in cultivation of commercial crops rather than food crops. Crops grown are cloves, sugarcane, coffee for international markets gaining rich dividends.
- The natural rivers have been used to support irrigation in areas having scant rainfall.
- The equatorial regions of Africa have huge reserves of mineral oil wealth, organic and inorganic minerals. These minerals are exported all over the world leading to great economic development of region. For ex Gold in South Africa, Nigeria, Guinea, Bauxite, Copper in Zambia, Zimbawe, Uranium in Namibia etc.

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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.

- Coral reefs are the also called the "equatorial tropical forests of world". They are regions of high productivity and biodiversity and home to diverse species of flora and fauna.
- Coral reefs as present in INDIA in Lakshwadeep, Gulf of Mannar, Andaman & Nicobar, Gulf of kutch are home to indigenous species specifically located in these areas
- Similarly Great Barrier Reef of Australia, off the N-E coast, is region of wide tourist and ecological importance.
- Economically corals are regions of extreme vegetation wealth and are of tourist importance. They play an important role in rentalisation and rehabilitation of Environment.
- According to NASA's CORAL (DECLINE) Coral Reef Airborne Laboratory, the decline of coral reefs is because of

  1.) Industrial effluents released in oceans leading to eutrophication.

  2.) Global rise of sea temperatures.

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- Bleaching of Coral reefs due to presence of High ocean acidification.
- The volume of CO_2 absorbed in Ocean water has increased tremendously.

All these factors are related to the widespread bad effects of anthropogenic activities.

- The coral areas should be specifically marked for preservation and given widespread security from Human exploitation.
- The INDC's adopted by Countries at the Conference of Parties 21 should be adopted at the earliest to bring below global ocean temperatures.
- Technology transfer, Mitigation, Adaptation, should be given importance.
- Direct funding by developed countries under the motto of 'Common but differentiated responsibilities with respect to capabilities' should take place.

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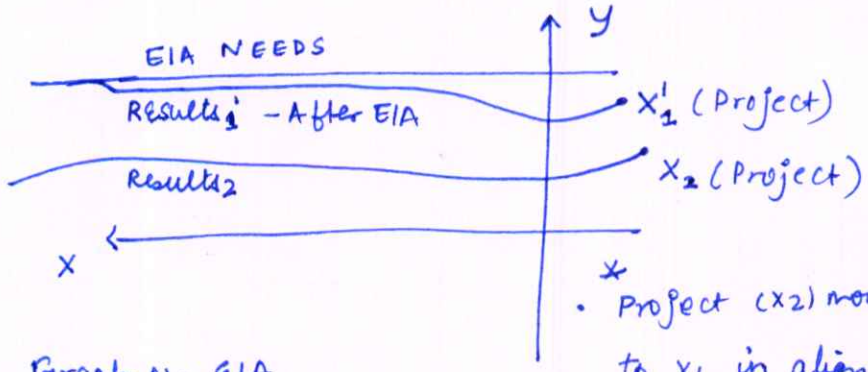
14. Despite EIA being a useful policy tool for sustainable development, deficiencies in its design and implementation have prevented it from realising its potential. Discuss.

- EIA = Environmental Impact Assessment is a comprehensive, and a holistic strategy to align the demands of any project (whether be industrial / Agriculture based / mining based or any other activity) with need the concerns of ecologically sensitive areas, giving due regard to local environment and ecosystem.



Graph of EIA.

- Project (X2) modified to X1 in alignment with EIA needs

- EIA has not been completely successfull in ensuring sustainable development, there are several reasons.

1. Implementation problems - Plans as envisaged under EIA, are rarely implemented keeping in mind the concerns of ~~poor~~ local community, poor and vulnerable, and the overall ecosystem.

2. Tentral obligation : The concerns of sustainable development remain only as textual obligations

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with scant regard to realities.

- Inefficient Monitoring authority :
- Lack of substantial will on part of regulatory authorities
- Corruption ~ Administrative problem.
- Lack of resources, technology to predict the outcome of a specific project.

There is a need to re-invent EIA based on contemporary needs of sustainable development, with regard to changing realities of nature, keeping in mind the overall health and sustenance of specific ecosystem and accompanying ecology.

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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.

- According to Economic Survey 2015-16, the use of nitrogen fertilizers has tremendously increased over the years, burdening the financial exchequer.
- Not only it has had adverse financial implications, it has made huge impact on ecology and environment.
- Excessive use of urea has been triggered by huge subsidy given by Central govt. This has led to huge amounts of urea being used without consideration of soil conditions.
- Excessive use of urea has rendered the soil infertile and lead to hardening of soil.
- In lieu of all these developments, govt has also considered proposal for removal of subsidies on urea. It has also introduced Soil Health Card scheme for checking the conditions of soil at local levels, thus leading to awareness
- It has also promoted organic farming via PKVY Param Paragat Krishi Vikas Yojna providing benefits to farmers who take part in organic farming.

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- Excessive use of Nitrogen and Urea, has lead to them being added to the food chains of various organisms causing Biological Magnification
- Nitrogenous compounds are carcinogenic in nature and lead to various health problems.
- Together with the action of water, they form acidic hydroxides, reducing the PH of the soil.

- Government needs to create awareness among farmers about the possible bad and adverse effects of using excessive Nitrogenous compounds
- It has also adopted, a new technology of 'NEEM-COATED' Urea to ensure that there is gradual and efficient release of urea thus preventing ruthless usage of fertilizers. etc

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

- Temperate grasslands are called "Granaries of world" because they are regions of "extensive subsistence Agriculture"
- Temperate grasslands, which includes Prairie of USA and some parts of Canada, Steppes of Russia, Pampas of Argentina, Velds of SAfrica and Downs of Australia are areas of extensive agriculture.
- The farming in these temperate grasslands is characterised by
  - Low population pressure on Agricultural lands, which means vast tracts of lands are owned by farmers.
  - Large Mechanization of Agriculture - The agriculture is supported with scientific and technological advancements, and is largely mechanized in nature, starting from sowing of seeds ~~to~~, ploughing, cultivation of crops, and final step of grain production
  - HYV seeds ~ High Yielding Varieties of seeds
  - GM crops - The countries of USA and Argentina are have fully employed the use of Genetically Modified crops for commercial cultivation of crops, which has therefore enhanced production of crops.

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- Temperate grasslands are also located in areas where there is largely fertile soil available, which is loamy in its texture.
- Also available are abundant water resources like River Ob, Yensei, Lena in Russia and similarly river Mississippi in central states of USA.
- Farming practices in this area has gradually increased productivity of region.
- It has brought vast ~~non~~ cultivation of monocultured crops, thus doing away with the biological diversity of vegetation of area.
- Grazing fields, pasture lands for animals and herbivores have been reduced
- Also inconsiderate, felling of trees, has substantially supported the Global warming.

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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.

- To Bolster international cooperation and collaboration, SENDAI framework was accepted by countries at 3rd World conference on Natural Disaster Risk Reduction
- The Sendai framework as adopted has 4 specific priorities and seven action Targets to be achieved via global cooperation and mutual support.
- These are not globally binding and hence only voluntary in nature and characteristic.

4 Specific priorities are

- Understanding disaster risk
- Investing in disaster prevention programmes to reduce threat.
- Strengthening government institutions and their framework for integrated action
- Mitigation and relief approach to prevent global exposure. Investing in Disaster risk insurance to ward cost.

The Sendai action was developed as a successor to HYOGO framework, for a period of 15 years to from 2015-2030

The goals of Sendai framework are based on

- Reducing the casualities, loss of life
- Reducing the loss to property and infrastructure
- Bolstering global cooperation and support
- Reducing the casualities of animals and other creatures.

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- Development of national specific plan to tackle natural disasters.
- The Sendai framework is quite comprehensive in its framework and involves global priorities and strategies keeping in mind the contemporary needs and demands.

It keeps in mind the most vulnerable people and calls for a global support in tackling disasters.

- But sendai framework is only voluntary in nature and non-binding
- It does not keep in mind the capabilities of different countries. While developed countries have resources to tackle disasters, poor countries are vulnerable to bad effects of disaster. So it does not take into account diversity of capabilities in developing countries and least developed countries.
- Also Sendai framework, does not put light on ways of implementation of same by member countries.
- Also the framework established is Top to down approach which does not keep in mind local conditions and capabilities of people.

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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.

- Heat wave can be defined as an atmospheric condition over an area when the relative temperature is usually around 5°c higher that the average temperature.
- Heat waves in India are a common occurrence in India in summer season, leading to disastrous effects on life of both animals including humans.
- Heat waves, along with summer local winds like 'loo' have brought in tremendous adverse impact even on vegetation of particular area. They ~~as~~ frequently cause summer 'stroke'
- The prevalence of Heat waves has troubled vulnerable groups who are homeless and do not have socio economic conditions to protect themselves from adverse impact of heat wave
- People living in poorly built slums, are also vulnerable to Heat waves
- The conditions of Heat waves have become more prevalent due to changes in environment caused by anthropogenic activities
- To tackle the same, the govt needs to provide real time information to citizens regarding the temperature condition.
- It should proactively advise people to stay indoors

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- Together with the help and cooperation of local authorities, a holistic plan should be developed to provide relief efforts and rehabilitation to people
- It also needs to make people aware of issues involved to tackle the same problem
- Also people should drink a lot of fluids to ward off problems associated with heat wave and ensure proper balance of nutrients.

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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.

- Oil spills have tremendous impact on marine environment and its implications are widespread not only on ecology and environment but on society as well.
  1. Oil spills clog the ocean water surface, Being lighter than water they come out to the surface.
     Aquatic life is adversely impacted
  2. Oil spills adversely impact ocean's capability of dissolving O_2, leading to problems for aquatic life
  3. It severly impacts the survival of sharks, and dolphins, which feel strangulated by oil spills.
- Oil spills can be prevented by employing safe and secure strategies of oil mining from deep sea locations.

→ Because of mining of shale oil, the incidents of oil spills have increased. Therefore there is a need to upgrade the technology keeping in mind the adverse impacts of oil spill.

- Various such mining companies should be held accountable,

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and specific remunerative fines should be given by them.

CONCLUSION

* Govt's should make comprehensive, holistic and effective strategies which are proactive, cover multi frame work of disasters like oil spills and also uses technology with allied support of local authorities, people and Non governmental Organisation and research organisations.

* Specific tribunals to dispose the cases, & in quick time should be authorised.

* Fines collected shall be used for rejuvenation, rehabilitation of the affected area with immediate relief to the adversaries

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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.

- In the recently accident of forest fires in Uttrakhand, huge destruction of forest wealth and biodiversity of area has been impacted
- The major causes of forest fires.

1. Natural causes : Due to summer heating, wide vegetation of region is rendered dry thus impacting the vulnerability of region to forest fires.

2. Human intervention - Sometimes, human intervention becomes the immediate cause of forest fires. Shifting cultivation done by tribal communities becomes the immediate cause of widespread fires, which are difficult to stop.

3. Forest fires can also be caused due to voluntary malodesign of people to cause destruction of forest wealth.

- In Areas of Australia, savannah, forest fires are accidents of regular happening and occurrence
- Forest fires cause, ~~deals of~~ have significant consequences and impacts ecology, economy and society of the area.

Ecology : The entire region and forests are burnt down by widespread forest fires, eliminating natural greenery, forest wealth, bio diversity of area.

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On the other side, it can have good effect, because it can help soil in regaining the fertility. This lead to forests quickly gaining the lost vegetation

ECONOMIC : Depletion of Forest wealth and resources impact local economy and biodiversity of an area.

SOCIAL : The local tribal communities are severly dependent on forest for their daily fuel, fodder. Forest fires can severly limit ~~the~~ and impact the tribal communities which are prime dependents of forest area.

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