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RN 20 SEP 2015
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GENERAL STUDIES (TEST CODE : 704)

Name of Candidate	Anupam Shukla.		
Medium Hindi/Eng.	English	Registration Number	14236
Center	RN	Date	20.09.2015

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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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).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are TWENTY questions printed in HINDI and ENGLISH.
   इसमें बीस प्रश्न हैं तथा हिन्दी और अंग्रेजी दोनों में छपे हैं।
3. All questions are compulsory.
   सभी प्रश्न अनिवार्य हैं।
4. The number of marks carried by a question/part is indicated against it.
   प्रत्येक प्रश्न/भाग के अंक उसके सामने दिए गए हैं।
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. 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. NOT MORE THAN 200 WORDS.

1. Even though the equatorial regions have great potential in timber resources, the lumbering industry has not developed properly in these regions. What could be the possible reasons behind this? Discuss the suitability of the equatorial regions for plantation agriculture.

यद्यपि विषुवतीय क्षेत्रों में इमारती लकड़ी संसाधनों की वृहत संभावना है, फिर भी इन क्षेत्रों में इमारती लकड़ी संबंधी उद्योग ठीक प्रकार से विकसित नहीं हुए हैं। इसके पीछे संभावित कारण क्या हो सकते हैं? रोपण कृषि हेतु विषुवतीय क्षेत्रों की उपयुक्तता पर चर्चा करें।

The equatorial regions of the world are rich in evergreen rainforest. Whether it is the Amazon rainforest in Brazil, African evergreen forest in Congo, Zaire etc or the equatorial forest lying in south east asian countries like Malaysia, Indonesia, these region possess huge timber resource.

The major timber resource available in these region include hardwood like ebony, mahogany etc. These forest are very dense forest and the canopy has a layered structure. The density of the tree cover can be imagined by the fact that even sunlight ~~is not~~ rarely reaches the ground floor. This makes

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the forest inaccessible for timber extraction purpose. Even if the government of these countries try to extract timber here, it will be economically unviable to do so.

Many countries lying in this region are either less developed countries or developing countries, they also lack the technical know how and human resource to exploit the forest.

Apart from high density of forest, these region also have multi layered canopy structure with ~~varies~~ variety of ~~timber resource~~ trees located in a single area. Thus we dont get a single strand structure which is generally needed for commercial viability in extraction.

Due to hot and humid climatic conditions, there exist great faunal diversity including micro organisms, they are originators of disease spread in the area, thus we find mortality

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rates appreciable of the people living in this region.

There are many local tribes especially in Amazon forest which prevent the extraction of timber in these areas. So they also are a challenge in timber exploitation.

These regions have been cleared for plantation agriculture by many countries. These region have high rainfall and good sunlight throughout the year, thus making them suitable for growth of fast growing species. Many crops like coconut palm, oil palm have been taken up by countries in this region like Indonesia, Malaysia and it also helps them in earning good foreign exchange.

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2. Transport linkages and government policies are the two most important factors influencing the establishment of Footloose industries. What are the other factors, which influence the location of these industries? Discuss in the context of India.

परिवहन लिंकेज और सरकारी नीतियां फुटलूज उद्योगों की स्थापना को प्रभावित करने वाले दो सबसे महत्वपूर्ण कारक हैं। इन उद्योगों की अवस्थिति को प्रभावित करने वाले अन्य कारक कौन-से हैं? भारतीय संदर्भ में चर्चा करें।

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3. "Change in latitude and altitude leads to variation in temperature and vegetation". Analyze.
"अक्षांश और ऊंचाई में परिवर्तन तापमान और वनस्पति में परिवर्तन उत्पन्न करता है।" विश्लेषण करें।

The geoid structure of earth is responsible for the differential heating on the earth's surface. This differential heating leads to change in temperature with latitude. As we go from equator to the polar region, the ~~earth~~ sun's rays intensity goes on decreasing, thus we see decreasing temperature from equator to the polar region.

We also know that heating of the lower parts of earth's atmosphere especially in troposphere takes place from the long wave radiation emitted by earth's surface after absorbing the sun's rays. Thus we find an altitudinal zonation of temperature from ground surface to higher elevations. It decreases at the rate of 1°C for every 32m.

The change in latitude which in turn causes variation in temperature also leads to differential vegetation pattern. We can

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find that from 0 - 10° N-S of the equator we find equatorial rainforest, this is a evergreen forest with high density. As we move to 10°-30° N-S latitude, the vegetation changes to hot desert on western coast of continents to monsoonal vegetation on eastern part of continents. We also find savannah vegetation in this latitude which is different from the equatorial rainforest. As we move higher up in latitude, between 30-60° N-S we find vegetation like mediterranean type where citrus fruits, olives, peaches are grown and found. Moving higher up we find existence of coniferous forest with trees like chir pine, blue pine. As we approach the artic region we find existence of mosses, ferns, small shrubs etc. Thus we can say that the biodiversity of the region decreases as we move from lower latitude to higher latitude.

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We can also find a change in vegetation pattern as we move up in altitude at a particular place. A very common example before us is the himalayas, where the altitudinal zonation of vegetation is visible. We can find evergreen forest on the hill slopes of eastern himalayas to conifers at high altitude.

Thus there exist variation in temperature and vegetation with latitude and altitude.

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4. Jute, "The Golden Fibre" enjoys significant ecological and economic advantages over other fibres yet it has been struggling to survive. In this context, discuss the problems associated with the Jute Industry in India. To what extent can the Jute Technology Mission address the same?

जूट, जिसे "गोल्डन फाइबर" के नाम से जाना जाता है, अन्य तंतुओं से अधिक महत्त्वपूर्ण पारिस्थितिकी और आर्थिक लाभ प्राप्त करता है, फिर भी यह अस्तित्व बचाने हेतु संघर्षरत है। इस संदर्भ में भारत में जूट उद्योग से जुडी समस्याओं पर चर्चा करें। जूट प्रौद्योगिकी मिशन किस हद तक इन समस्याओं का समाधान कर सकता है?

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5. How do global pressure belts explain the formation of climatic regions across the world?
वैश्विक दाब पेटियाँ किस प्रकार विश्व भर में जलवायु क्षेत्रों के निर्माण की व्याख्या करती हैं?

Global pressure belts are created by the ~~pow~~ differential heating of the earth's surface. This in turn leads to formation of permanent or primary wind system on the globe. The wind system plays an important role in rainfall variation at various latitudes on the globe. The existence of different temperature along with different rainfall creates different climates across the world.

If we look at the global pressure belt, we find that we have equatorial low pressure belt, sub-tropical high pressure belt, sub-polar low pressure belt and polar high pressure belt. These lead to formation of trade winds, westerlies, polar easterlies respectively.

The equatorial low pressure belt is convergence zone for trade winds, these regions receive heavy rainfall and high temperature throughout the year. Thus

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a unique climatic condition called the equitorial climate develops in this region.

Similarly the trade winds which are offshore in the tropical region lead to less rain in the western margin of the continents (in tropical region). Thus they influence to give a desert type of climate.

In the same tropical region we also have monsoon type of climate as the same trade winds are onshore on the eastern parts of the continent.

In the higher latitudes especially in the region between sub-tropical high pressure belt and sub-polar low pressure belt, we find excidence of mediterranean climate on western parts of continent. The westerlies give mediterranean climate a uniqueness that they receive winter rain.

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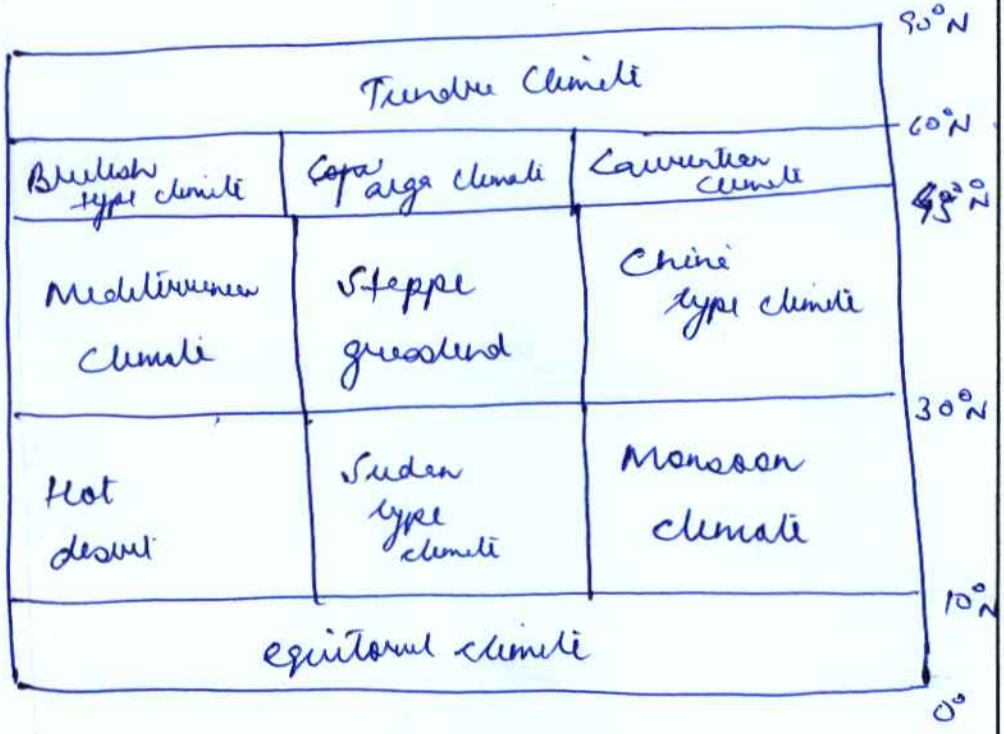
Similarly other regions have different climatic conditions due to difference in pressure belt formation and wind system.



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6. What are extra tropical cyclones? How are they different from tropical cyclones? Why do the tropical cyclones weaken over the land after landfall?
बहिरुष्णकटिबंधीय चक्रवात क्या होते हैं? ये उष्ण कटिबन्धीय चक्रवात से कैसे भिन्न होते हैं? उष्णकटिबन्धीय चक्रवात लैंडफाल के पश्चात् कमजोर क्यों हो जाते हैं?

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7. Describe the different types of earthquake waves and their modes of propagation. How do the earthquakes occurring in the Fold Mountain regions differ from those occurring at large reservoirs/dams? What is the difference between Shallow-focus and deep-focus earthquakes?
विभिन्न प्रकार की भूकम्पीय तरंगों और उनके संचरण के प्रकारों का वर्णन करें। वलित पर्वतीय क्षेत्रों में आने वाले भूकम्प बड़े जलाशयों/बांधों के क्षेत्र में आने वाले भूकम्प से कैसे भिन्न होते हैं? छिछले केन्द्र और गहरे केन्द्र वाले भूकम्पों में क्या अन्तर है।

The ~~eqo~~ earthquake waves originate due to sudden release of energy at the hypo centre of the earthquake. These types of earthquake waves are called body waves. They may be differentiated into P waves or S waves depending on whether they can travel through solid, liquid and whether they are longitudinal or transverse waves respectively.

There also exist other type of earthquake wave called surface wave. When the body waves reach the surface and cause disturbance in the overlying rocks, a new kind of waves emerge which are called surface waves, they are responsible for causing huge destruction on the earth's surface. They can travel through solid,

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liquid ~~and~~ medium.

The P and S waves have a certain zone of exclusion between 105° to 135° from the hypocentre, between which they cannot propagate.

The earthquake occurring at fold mountain are due to tectonic plate collision. When two continental plates collide with each other, they cause friction and hence produce earthquake. These earthquake can also be accompanied by volcanic activity in the fold mountain region. While those earthquakes occurring at large reservoir or dams are due to the heavy overlying mass of water which puts pressure on the underlying rocks of the crust. Thus reservoir induced seismicity is a shallow focus seismicity and the intensity of earth quake is also low as compared to earthquake occurring in fold mountain. These earth quake occurring here can be of ~~high~~ deep focussed ones as well.

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The difference between shallow focus and deep focus earthquake lies in the ~~of~~ depth of the epicentre. If the epicentre is near earth surface (say 1 km) below earth surface then it is shallow focus earthquake.

Many earthquakes we have seen in the himalayas are deep focussed earthquakes because of the friction between the continental plates at great depth below the surface.

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8. Which are the prominent monsoon regions other than the Indian sub-continent? Elucidate the crucial role played by the Tibetan Plateau in regulating monsoons over the sub-continent.
भारतीय उपमहाद्वीप से भिन्न अन्य प्रमुख मानसून क्षेत्र कौन से हैं? उपमहाद्वीप के ऊपर मानसून को विनियमित करने में तिब्बत के पठार द्वारा निभायी जाने वाली महत्वपूर्ण भूमिका को स्पष्ट करें।

Monsoons are found in the tropical region of the earth. Apart from the Indian sub-continent, monsoon are found in regions like Indo-China especially countries like Cambodia, Vietnam, Laos and south eastern China. Other region include north eastern part of Australia, and the gulf of mexico region of North America.

The Tibetan plateau aids in the strengthening of monsoon over the Indian sub continent. During summer, there is northward shift in the ITCZ, we find that there is intense heating of the tibetan plateau, thus low pressure is created on the surface of plateau. In the upper region of troposphere we find that there exist high pressure. This leads to the development of

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sub tropical easterly jet stream in the upper troposphere. The heating of tibetan plateau helps in withdrawal of westerly jet stream and formation of sub tropical easterly jet stream. This jet stream flows over the sub continent and reaches the African coast. It helps in creating high pressure over the surface in African coast. This high pressure helps to allow the south easterly trade winds which after crossing the equator become a south westerly direction to carry moisture from the Indian ocean and bring the monsoonal rains in the Indian sub continent.

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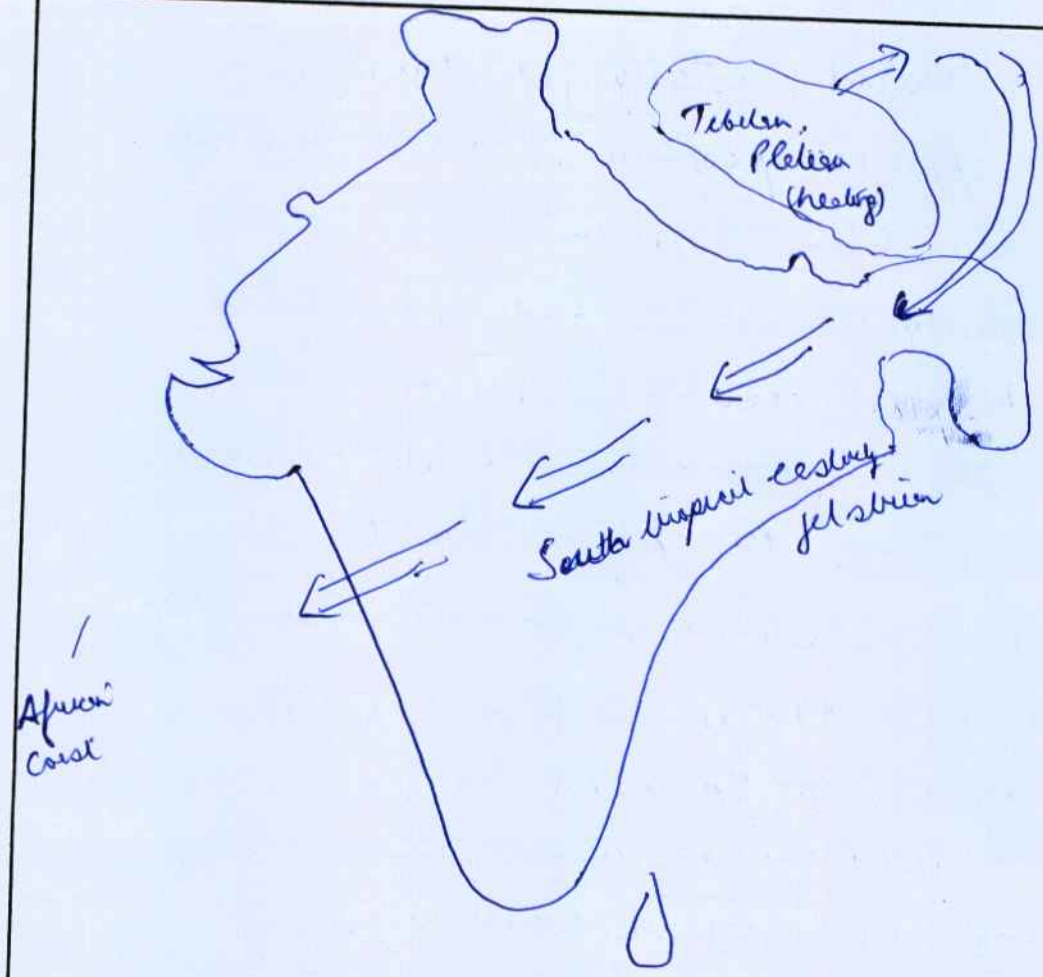

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9. What are Rare Earth Elements? What are their uses? How is India positioned in the global distribution of these resources?
दुर्लभ मृदा तत्व कौन से हैं? उनके उपयोग क्या हैं? इन संसाधनों के वैश्विक वितरण के हिसाब से भारत की स्थिति कैसी है?

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10. "The potential of Inland Water transport (IWT) to encourage and support increased economic and social development is enormous". Discuss the factors responsible for the slow growth of IWT in India with special emphasis on geographical limitations. Enumerate some steps taken by the government in order to make this form of transportation competitive with respect to rail and road.

"अंतर्देशीय जल परिवहन (आई. डब्ल्यू. टी.) में वर्धित आर्थिक व सामाजिक विकास को प्रोत्साहित एवं समर्थन प्रदान करने की अत्यधिक संभाव्यता है।" भौगोलिक परिसीमाओं पर विशेष बल देते हुए भारत में आई. डब्ल्यू. टी. की धीमी गति से विकास के लिए उत्तरदायी कारकों पर चर्चा करें। परिवहन के इस रूप को रेल और सड़क यातायात के साथ प्रतिस्पर्धी परिवहन साधन बनाने के क्रम में सरकार द्वारा उठाए गए कुछ कदमों का उल्लेख करें।

Inland water transport plays an important role in economic and social development of a region because it is a cheap source of transport and helps to promote intra-country trade. The european countries have utilized the potential of river Rhine, Thames, Danube to promote economic and social development of the region.

In India, we have seen that there is slow progress of growth in IWT sector. One important reason behind this is that we need perennial rivers and canals so that inland water transport can take place throughout the year and becomes commercially feasible. But in India

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leaving apart the himalayan rivers where water flows throughout the year, the other rivers are non-perennial like the rivers which originate in the deccan plateau. For most part of the year except the monsoon, they remain dry. So this is a challenge in the development of inland water transport in the country.

Secondly apart from perennial nature, the quantity of water flow is necessary to allow movement of larger ships and vessels. But due to development of canal system of irrigation in the northern plain area, the amount of water available has decreased, thus we know that with decreased water availability more energy is required to move the vessels in the rivers channels.

Thirdly many Indian rivers in the lower course, do a lot of meandering so the actual distance sometimes through the river channel increases as compared

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to the actual distance by road or railway.

Many rivers in the western part of country where Rajasthan and Gujarat have inland drainage and very less water. Thus mobility to develop IWT is difficult. Many west flowing rivers have rapids and water falls on them which does not provide a continuous stretch for development of IWT.

The present government has thought to develop IWT sector along with coastal shipping sector. The sagar mala project of the new government involves development of this sector. The port led development ~~dang~~ model along with setting up SEZ, fiscal incentives, subsidies have been taken to make the sector more competitive with respect to rail and roadways.

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11. Lakshadweep has been facing a drastic decline in coral cover in recent years. Discuss various environmental and anthropogenic factors behind this phenomenon. How can El Nino be disastrous for the world's coral reefs? Illustrate.

हाल के वर्षों में लक्षद्वीप के प्रवाल आच्छादन में भारी क्षय देखने को मिला है। इस परिघटना के लिए उत्तरदायी विभिन्न पर्यावरणीय एवं मानवीय कारकों पर चर्चा करें। अलनीनो विश्व की प्रवाल भित्तियों के लिए किस प्रकार विनाशकारी हो सकता है? वर्णन करें।

The decline in coral cover in Lakshadweep can be explained due to rise in oceanic temperature and consequent enhancement in oceanic acidity. This has led to phenomenon of coral bleaching where the acidic water leads to death of the Zooxanthalae algae.

We also find that Lakshadweep lies in the region from where a large portion of world trade is carried out through ships and vessels. This has disturbed the ecosystem of the corals in the region. Apart from it, human developmental activities and unregulated tourism in the area has led to pressure on the coral reefs of the Lakshadweep.

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El-Nino phenomenon is responsible for sudden rise in temperature in the peruvian coast, thus it leads to ocean warming and consequent acidification of the eastern pacific ocean. This can lead to destruction of Atolls in these ocean. El-Nino also results in changing global climatic pattern by changing the rainfall and distribution around the world. The change in climatic conditions can affect the production of phyto planktons in the world oceans. This in turn can affect the coral population.

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12. Municipal Solid waste management is fast becoming a nightmare for citizens and local authorities in cities across India. Enumerate the steps taken by various municipal bodies to tackle this enormous problem in India. Can WtE (Waste to Energy) be a feasible solution to this fast growing problem?
सम्पूर्ण भारत के शहरों में नगरपालिका ठोस अपशिष्ट प्रबंधन तेजी से नागरिकों और स्थानीय अधिकारियों के लिए दुःस्वप्न बनता जा रहा है। भारत की इस वृहत समस्या से निपटने के लिए विभिन्न नगर निकायों द्वारा उठाए गए कदमों की गणना करें। क्या डब्लू.टी.ई. (अपशिष्ट से ऊर्जा) इस तेजी से बढ़ती समस्या हेतु एक व्यवहार्य समाधान हो सकता है?

With rapid urbanization, the quantity of municipal solid waste is also increasing, This has led to increased challenge of managing the municipal solid waste.

The steps taken by municipal authorities all over country include

① Municipal solid waste segregation into biodegradable and non-biodegradable waste

② Recycling of plastic waste material.

③ Development of dumping sites on the outskirts of the city premises.

④ Incineration of non-biodegradable waste to reduce its volume.

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(5) Developing co-operation with private sector in many cities to promote managerial efficiency in waste collection and disposal. Example A to Z company in Kanpur, Patna etc.

(6) Biodegradable waste is used to generate manure which can then be used by the local farmers.

(7) Setting up of waste collection centres at various parts of city for convinience of people.

(8) Many cities have banned the usage of plastic bags for retail purpose in order to reduce the problem of excessive municipal waste.

Yes, waste to energy generation has ~~two~~ advantages.

(1) helps to manage waste generated in municipal areas

(2) creates employment opportunity in this sector

(3) generates energy which can be used

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for producing electricity.

Example - Refused derived fuel technology

Although disadvantages are there like

- emission of harmful pollutant gases into atmosphere during incineration
- affect the health of local workers in the waste to energy plant.

There is a need to develop safer technology in this sector. For this research and development can take place in this sector.

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13. It has been observed that the ozone hole develops over Antarctica, and not over manufacturing centers where chlorofluorocarbons are released prodigiously. How can you explain this phenomenon? Examine the possible health and environmental impacts of ozone depletion.
ऐसा दृष्टिगत हुआ है कि ओजोन छिद्र अंटार्कटिका के ऊपर विकसित होता हैं, न कि उत्पादन केन्द्रों के ऊपर जहां से क्लोरोफ्लोरोकार्बन वृहद मात्रा में मुक्त होता है। इस परिघटना की व्याख्या आप कैसे कर सकते हैं? ओजोन क्षरण से संभावित स्वास्थ्य एवं पर्यावरणीय प्रभावों का परीक्षण कीजिए।

Ozone hole is a phenomenon of depletion in the ozone concentration over Antarctica as compared to other regions of the world. Ozone gas is found in the lower stratosphere region of the atmosphere.

The reason for ozone hole developing over Antarctica and not over manufacturing centres where chlorofluoro carbon are released is that the chlorofluoro carbon emitted in the process of industrial manufacturing gets accumulated in the upper atmosphere. The global atmospheric circulation in upper atmosphere leads to it being taken and accumulated near the polar region. In the southern hemisphere we find a more continuous distribution of wind movement in upper atmosphere which takes the chloro-

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fluoro carbon along with it to the antarctic region.

Ozone depletion has enormous health hazards.

- firstly it allows the UV-B rays to reach the surface of ~~atmosphere~~ earth. these rays can cause lot of harmful effects.
  - skin irritation
  - sun burning
  - cancer
  - eye damage
- secondly, As ozone depletion allows the harmful UV rays to reach the earth surface, it also results in disturbance in photosynthesis activity
- thirdly, in the presence of these UV rays, photo chemical smog is formed which is a health hazard for human population.

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14. India is the 3rd largest producer of coal in the world but commercial production of Coal Bed Methane has not yet started. What are the environmental and economic constraints associated with the production of coal bed methane in India?

भारत दुनिया में कोयले का तीसरा सबसे बड़ा उत्पादक है, लेकिन कोल बेड मीथेन का वाणिज्यिक उत्पादन अब तक आरंभ नहीं हुआ है। भारत में कोल बेड मीथेन के उत्पादन से जुड़ी पर्यावरणीय एवं आर्थिक बाधाएं क्या हैं?

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15. Hydrofluorocarbons have emerged as contentious issue in climate talks. Discuss whether HFCs should be dealt with under Montreal or Kyoto Protocol.

हाइड्रोफ्लोरोकार्बन ज़लवायु वार्ताओं में विवादास्पद मुद्दे के रूप में उभरा है। क्या हाइड्रोफ्लोरोकार्बन से मॉन्ट्रियल या क्योटो प्रोटोकॉल के तहत निपटा जाना चाहिए, चर्चा करें।

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16. "Wetlands provide ecosystem services essential to people and the environment, valued at billions of dollars". Explain briefly. Enumerate the causes for wetland losses across India. Further, elaborate on some international and national measures taken to protect them.
"आर्द्रभूमि लोगों और पर्यावरण के लिए आवश्यक पारिस्थितिकीय सेवाएं अपलब्ध कराती है," जिनका मूल्य अरबो डालर में आंका गया है। संक्षेप में व्याख्या करें। भारत भर में आर्द्रभूमियों के लोप के कारणों का उल्लेख करें। इसके अतिरिक्त, इनके संरक्षण के लिए उठाए गए अन्तर्राष्ट्रीय और राष्ट्रीय कदमों की विस्तार से चर्चा करें।

Wetland provide ecosystem services to the people and environment. Wetlands are very productive ecosystem and have rich biodiversity. Wetland are source of clean drinking water, food and carbon sequestration. These ecosystem services provided by wetland help to earn lot of money in international market. Ecosystem services available from wetland include regulating services, provisioning services, recreational services and supply of material for mankind. A lot of tourist destination places have developed near wetland, this helps the tourism industry earn lots of profits.

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Causes of wetland loss in India -

- industrialization
- urbanization
- waste dumping in wetlands
- land encroachment for agriculture activities
- over exploitation of wetland resource like water
- unregulated tourism activity

National and international activities on wetland conservation

- Ramsar Convention
- Montreux Record
- National Wetland Conservation Plan
- Many wetland fall under the protected Area network like Wildlife sanctuary and National Park, therefore protection is given under wildlife protection Act, 1972; Indian Forest Act, 1927; Environment Protect.

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ion Act 1986.

- Coastal Regulation Zone Rules 2011
- Financial package to conserve the threatened wetlands.

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17. What do you understand by the phenomenon of Cloud Burst? How is it related to flash floods ? Why are hilly areas more prone to the ill effects of cloud burst?
बादल फटने की परिघटना से आप क्या समझते हैं? यह फ्लैश फ्लड से कैसे सम्बन्धित है? पर्वतीय क्षेत्र बादल फटने के दुष्प्रभावों से सबसे ज्यादा ग्रसित क्यों होते हैं?

Cloud burst is the phenomenon where there is a sudden downpour of rainfall in a limited region due to inability of clouds to hold rain droplets. In a cloud burst, there is accumulation of cloud in a particular area, this generally happens whenever clouds are prevented to disperse by a physical barrier sometimes a mountain or group of hills. There also exist an upward current which prevents rainfall from taking place. Thus there is gradual build up of rain bearing clouds till a time comes when the cloud is no longer able to hold the rain. There there is sudden release of water in form of rainfall. The extent of rainfall is approx 10 cm per hour.

Such heavy rainfall in a small area

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leads to lot of water accumulation on ground. this accumulated water is even more than the natural drainage capacity of the area. Thus the accumulated water ~~cloud~~ causes flood in the region. This flood is called flash flood.

The hill areas are areas where the ground level has some slope. The flash flood provides the exogenic forces for the erosion to take place. So lot of times we find mud flow, land slide in hill areas during cloud burst.

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18. What are Tsunamigenic zones? Give examples of such zones in the vicinity of Indian Coastal regions. Examine the preparedness level of India to minimize the impact of Tsunamis.
सुनामीजेनिक मण्डल क्या है? भारतीय तटीय क्षेत्रों के आसपास ऐसे मण्डलों का उदाहरण दें। सुनामीं के प्रभावों को कम करने के लिए भारत की तैयारियों के स्तर का परीक्षण करें।

Those regions where there is high probability of formation of Tsunami are called Tsunamigenic zones.

Example - (i) Andaman and Nicobar island
(ii) Bay of Bengal region.

Preparedness level of India to minimize Tsunami impact

- Tsunami Early Warning system installed at various parts of the Indian ocean near the high probable areas.
- Coastal evacuation plan in place
- Tsunami simulation exercise being done in coastal areas for preparedness
- Coastal plantation of Casuarina species which help to resist the damage caused by Tsunami.

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- National disaster response force deployed in some Tsunami sensitive areas

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19. "Community based disaster management, which seeks to empower community directly to enhance their indigenous coping mechanisms, is a must". Elaborate.
"समुदाय आधारित आपदा प्रबन्धन जो आपदा से मुकाबला करने के स्थानीय तरीकों को बढ़ावा देने के लिए सीधे समुदाय का सशक्तिकरण करना चाहती है, अत्यावश्यक है।" व्याख्या करें।

Community based disaster management system

- training
- traditional knowledge of the area
- co-ordination with district administration
- supply of material and equipment
- during disaster, they are the first to response
- Communication networks
- local understanding and identification during execution
- no language or cultural barrier while taking decision

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