Name of Candidate	Khushboo Gupta		
Medium Eng./Hindi	English	Registration Number	146733
Center	Online	Date	1st Aug, 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	
8	12.5	
9	12.5	
10	12.5	
11	12.5	
12	12.5	
13	12.5	
14	12.5	
15	12.5	
16	12.5	
17	12.5	
18	12.5	
19	12.5	
20	12.5	

Total Marks Obtained:

Remarks:

INSTRUCTIONS

1. Do furnish the appropriate details in the answer sheet (viz. Name, Registration Number and Test Code).
   उत्तर पुस्तिका में सूचनाएं भरना आवश्यक है (नाम, प्रश्न-पत्र कोड, विद्यार्थी क्रमांक आदि)।
2. There are TWENTY questions printed in ENGLISH & HINDI
   इसमें बीस प्रश्न हैं अंग्रजी और हिन्दी 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

Don't write anything this margin (इस हाशिए में कुछ ना लिखें)

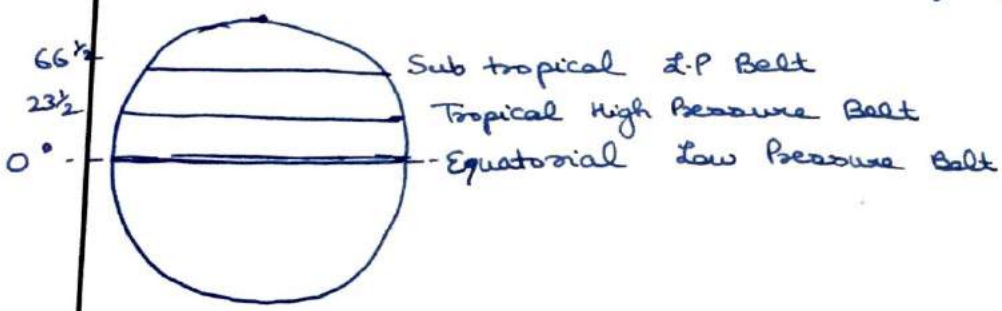
Answer all the questions in NOT MORE THAN 200 WORDS each. Content of the answers is more important than its length. All questions carry equal marks.

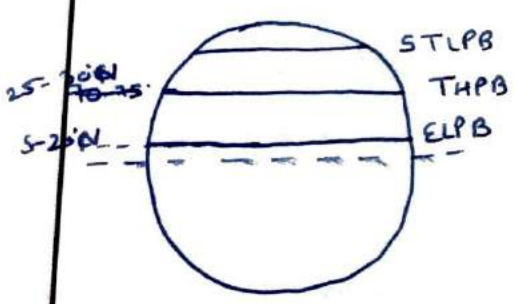
12.5X20=250

1. What do you understand by seasonal shifting of pressure belts? What impact does it have on the formation of various climatic regions across the globe? Discuss its socio-economic significance.

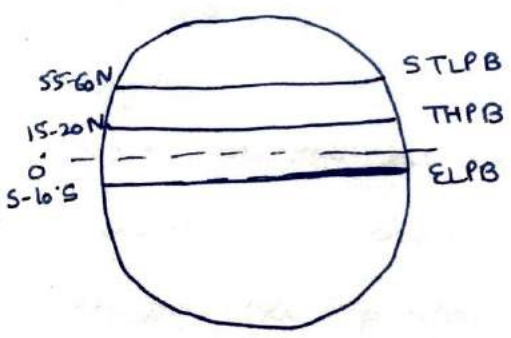
वायुदाब पेटियों के मौसमी स्थानांतरण से आप क्या समझते हैं? विश्व भर में विभिन्न जलवायु प्रदेशों के निर्माण पर इसका क्या प्रभाव पड़ता है? इसके सामाजिक-आर्थिक महत्व की चर्चा कीजिए।

Global Pressure Belts ie. Equatorial Low Pressure Belt, Tropical High Pressure Belt etc. exhibit seasonal shifting





SUMMERS



WINTERS

In Summers, as sun moves in the north hemisphere, all the pressure belts shift towards north with max max.

Variation in tropical belts.

Max. shift is shown by ELPB at Tibetan Plateau, where in summers it shifts as much as 22°C.

Similarly, in winters, these pressure belts have little in the south direction. This is due to the fact that Low Pressure will be around the latitude, when sun is directly headed.

This shifting of belts results in formation of various climatic regions of the world.

eg. Indian monsoon is the result of blowing of Southern trade winds in summer seasons resulting in summer west monsoon and blowing of northern trade winds in winters resulting in north east monsoon.

Also, Mediterranean type of climate is the result of two different kind of planetary winds in the

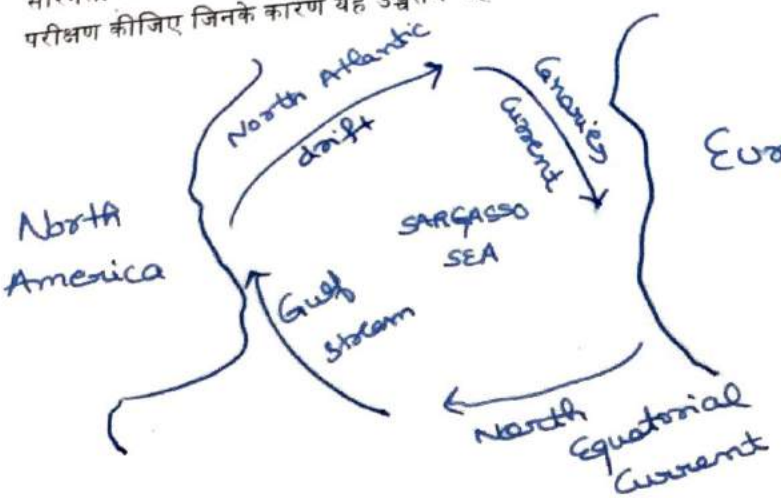
region

Such changes have huge socio-economic significance.

- offshore winds resulting into deserts.
- growth of citrus fruits in mediterranean type of climate.
- Bringing rain in areas like Tamil Nadu which otherwise would be devoid of rainfall due to absence of SW monsoon in the region

2. Explain the reasons for the formation of Sargasso Sea. Also, examine the factors for it being a region with one of the highest ocean salinity.

सारगैसो सागर के निर्माण के कारणों की व्याख्या कीजिए। साथ ही, उन कारकों का भी परीक्षण कीजिए जिनके कारण यह उच्चतम महासागरीय लवणता के क्षेत्रों में से एक है।



Sargasso Sea is the result of four currents namely Gulf Stream, North Atlantic drift, Canaries Current and North Equatorial Current in the Atlantic Ocean.

Due to the Cyclic movement of these currents, the area lying b/w stays calm and results in the formation of sea weeds ie Sargasso.

Therefore, it is called Sargasso Sea.

Unability of this water to move and mix with larger ocean waters due to landlocking on both sides and four cyclic currents around it, increases its salinity.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

3. Why are river deltas important? Discuss the existing threats to river deltas and the measures needed to overcome these threats.

नदी डेल्टा क्यों महत्वपूर्ण होते हैं? नदी डेल्टाओं के समक्ष विद्यमान खतरों एवं इन खतरों से निपटने के लिए आवश्यक उपायों पर चर्चा कीजिए।

River deltas are lifelines of many communities around it and also useful for the whole country.

- fertile sediments deposited here are excellent for the growth of many crops.
- placer deposits of gold, silver etc. can be found here.
- The region of deltas where it meets ocean water serve as an excellent spot for survival of marine ecosystem.

Existing threats to deltas:

- Rising sea levels results in submergence of deltas.
- Building of dams, canals etc. holds off these sediments and thus, declining deltas.

- Illegal and excessive sand mining also reduce the sediments and thus increasing the water flow and reduction in size of deltas.

- Increased Glacier melting is causing more flow of water and carries the sediments with greater energy and doesn't deposit them as frequently at deltas.

- Increased divergence of water due to river-linking, irrigation projects etc. reduce the sediments for deltas formation.

Measures needed to overcome these

- Allowing the natural flow of river along with its sediments
- Reducing Green house gases emission to prevent sea-level

rising and glacier melting.

- Addressing the issue of illegal sand mining.
- Regular desiltation of existing dams and Barrages and relying more on run-off river water projects.

4. Give an account of the different types of earthquakes based on their zone of occurrence. Identify the earthquake prone regions of the world with special reference to India. Also explain the reasons for the occurrence of earthquakes in geologically inactive regions like Peninsular India.

घटित होने वाले क्षेत्र के आधार पर विभिन्न प्रकार के भूकंपों का विवरण प्रदान कीजिए। भारत के विशेष संदर्भ में विश्व के भूकंप प्रवण क्षेत्रों की पहचान कीजिए। साथ ही, प्रायद्वीपीय भारत जैसे भूवैज्ञानिक रूप से निष्क्रिय/स्थिर क्षेत्रों में भूकंपीय घटनाओं के कारणों की भी व्याख्या कीजिए।

Based on the zone of occurrence, earthquakes are of 4 types :-

1) Tectonic : Tectonic earthquake is the one that occurs due to breaking of earth's crust due to the movement of plates inside it, resulting into stresses.

2) Volcanic :- Volcanic earthquakes are the ones that result due to the volcanic activity in the region. Emergence of lava from the asthenosphere results into several kinds of stresses.

3) Collapse :- Small earthquakes in mines built underground.

4) Explosive :- Earthquakes which are result of nuclear, chemical or

shocks explosion in the area.

Earthquakes prone areas

1) Circum Pacific Belt :-

80-85% Earthquakes are known to happen here. This is the most prone area due to high tectonic and volcanic activities.

2) Trans- Eurasian mountains

10-15% Earthquakes happen in these areas. Indian himalayas lying in this region are prone to earthquakes.

3) Other areas

1-2% earthquakes happen in the remaining areas due to mild tremors or shock waves.

Earthquakes are not only related to geologically active regions, but their presence can also be realised in many inactive regions like Peninsular India.

Regions like Peninsular India are part of ancient ~~continents~~ regions like Gondwanaland. These are already old with presence of some ~~faults~~. Therefore, an earthquake generated in the nearby areas ~~for~~ ex. Himalayas in case of Peninsular India, is able to impact such weak areas and earthquakes are caused. When India plate ~~strikes~~ collides Eurasian plates, shock waves generated reach here and being weak, ~~these~~ area cannot completely resist against such waves.

5. Explain the reasons for the following: (a) Erosional forms dominate in the west coast while depositional forms dominate in the east coast of India. (b) Western Ghats in Karnataka receive more monsoon rainfall than Maharashtra and Kerala.

निम्नलिखित के कारणों की व्याख्या कीजिए: (a) भारत के पश्चिमी तट में अपरदनजन्य रूपों की अधिकता या बाहुल्य पाया जाता है, जबकि पूर्वी तट पर निक्षेपण रूपों का बाहुल्य पाया जाता है। (b) कर्नाटक में पश्चिमी घाट महाराष्ट्र और केरल की तुलना में अधिक मानसूनी वर्षा प्राप्त करते हैं।

(a) West coast of India has western Ghats on its margins. They rise suddenly on the coast. Therefore, the steep slope doesn't allow the rivers on the west coast to deposit huge sediments on it. Instead, higher Potential Energy of the river facilitates higher erosion of the coast. Also, no delta is formed by such rivers. It is a submergent kind of coast.

East coast of India however has Eastern ghats on its margin which are eroded and much lesser ht. as compared to western Ghats. Therefore, the rivers flowing into Bay

of Bengal are able to deposit huge sediments along the east coast. These rivers form huge deltas at the end. Also, it is emergent kind of coast, with large continental shelve.

(b) Western Ghats in Karnataka receive much higher rainfall as compared to western Ghats of MH and Kerala.

Western Ghats at Karnataka are of gentle slope as compared to that at Kerala or Maharashtra. This allows slow uplifting of air and greater time for coalesence - condensation to take place and larger droplets are hence formed. Therefore, when orographic rain happens, it brings more rainfall. However in Kerala and Maharashtra, higher slope results into early orographic rain, which

doesn't give much time for droplets to grow larger in size.

Also, the topography of western ghats at Kerala is such that some of rain bearing clouds easily move towards leeward side and shed some of rain there and hence reducing rainfall on western ghats.

6. With increasing urbanisation in India, the land usage pattern is undergoing major changes. Comment.

भारत में बढ़ते शहरीकरण के साथ ही भू-उपयोग प्रतिरूप में भी महत्वपूर्ण परिवर्तन हो रहे हैं। टिप्पणी कीजिए।

India's increasing population, resulting into urbanisation at large scale results into many changes in the land usage pattern :-

- More and more land needed for building houses, roads, and other urban infrastructure encroaches upon the land under green cover.
- Need for more food crops results into more clearing of forests and bringing large areas under cultivation.
- Use of heavy chemicals, pesticides, fertilisers increases the amount of waste land.
- Land available for grazing of animals etc is reduced to fulfill the needs of human consumption by bringing more land under agriculture.

- Lands earlier kept as Fallow lands to help them regain the nutrients and soil's fertility are now either brought under infrastructure use or agriculture use through fertilisers.

Given above changes, it can be seen that to fulfill the needs of growing population and meeting urbanization ~~the~~ needs, land usage pattern is undergoing major changes. But this will affect the sustainable development of the nation.

Increasing the productivity of lands through sustainable solution and addressing the huge population rise holds key to to the problem.

7. How is the coal bearing strata of India classified in geological terms? Why does coal remain the most important source of energy in India and what are its implications?

भूवैज्ञानिक शब्दावली में भारत के कोयला धारण करने वाले संस्तर को किस प्रकार वर्गीकृत किया जाता है? कोयला भारत में ऊर्जा का सबसे महत्वपूर्ण स्रोत क्यों बना हुआ है एवं इसके निहितार्थ क्या हैं?

Indian coal mainly consists of two types of coals in geological terms

- Gondwana type of coal (>200 million yrs old)
- Tertiary coal. (~10 million yrs old)

Indian mainland mainly consists of Gondwana coal with Tertiary coal occupying less than 1%.

Gondwana coal can be found in the regions like Jharia, Bokaro, Raniganj etc.

Tertiary coal is found in states like Assam, Meghalaya etc.

Coal is the most imp. energy source of India, comprising atleast 60-70% of its energy needs.

- easier availability of coal in the region as compared to other sources like Petroleum, Natural Gas.
- Unable to harness the same power efficiency using renewable sources like solar energy, wind energy etc.
- Lack of technology and expertise in other energy forms. However, colonial rule and its huge usage in railways earlier allows smoother usage of coal.

Implications:

- Coal is a non-renewable energy resource despite availability of huge reserves available today, shift towards non-renewable energy resource is must.
- Coal availability in India is mostly bituminous, which is of lower quality as compared to coal

available in countries like US. Thus, reduced efficiency

- Air Pollution caused from the usage of Coal resources increases the Green House gases emissions and hence, adds to global warming.
- Coal dust created during coal mining impacts the health of workers and nearby residents severely.
- Collaps of mines etc. results into huge life loss.

Given the commitment of India under Paris Climate deal, it must take some steps to move towards cleaner energy fuels like solar energy, wind energy, nuclear energy.

8. Forest fires have become a regular feature during summers in the Western Himalayas. What are the causes behind this phenomenon? Critically examine the efforts made by authorities in countering this problem. Do periodic forest fires have any benefits associated with them?

पश्चिमी हिमालय में ग्रीष्म ऋतु के दौरान दावानल/वनाग्नि (फॉरेस्ट फायर) एक नियमित घटना बन गयी है। इस परिघटना के पीछे क्या कारण हैं? इस समस्या से निबटने के लिए प्राधिकरणों द्वारा किए गए प्रयासों का आलोचनात्मक परीक्षण कीजिए। क्या समय-समय पर होने वाली दानावल की घटनाओं के कुछ लाभ भी हैं?

Recent forest fires of Kerala and last year forest fires of Uttarakhand points towards the regular phenomenon of forest fires.

CAUSES :-

~~NATU~~

- Himalayas are areas of dry deciduous forests. In the summers, the bushes and sticks lying on ground, causes fire due to friction.
- Growth of trees like chir pine which are more vulnerable to fire accidents
- Very tall trees struck by lightening.
- Intentionally causing the fire to extract timber resources, or sway away the wild animals.

- Slash and burn agriculture practised by few communities.

Efforts by authorities to counter these:

- Compensatory Afforestation Fund Management and Planning Authority (CAMPA) to increase the afforestation
- Stricter regulations of shifting cultivation.
- Awareness on the decrease use of fire vulnerable trees like Chir pine

Forest fires ~~trough~~ result in huge diversity loss, periodic forest fires also have some advantages attached to them.

- Clearing of ~~thick~~ forests and bringing the nutrients back to the soil.

Thus, soil rejuvenation

- These facilitate the growth of grasses required for grazing purposes.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

9. What are sunrise industries? Elaborate on the potential of these industries in India with a special focus on the food processing industry.

सनराइज उद्योग क्या है? खाद्य प्रसंस्करण उद्योग पर विशेष बल देते हुए भारत में इन उद्योगों की संभावना के संबंध में विस्तार से बताइए।

Sunrise industries refer to those industries which at present times are relatively new and young but have tremendous potential of growth in the future.

Food processing industry is one such industry of India.

Given the stagnant growth of Indian manufacturing sector from past decade, such industries can help raise it and address the problem of 'Jobless Growth' in India.

For ex. India despite witnessing huge food production, is facing challenges in food security. This is due to absence of adequate forward linkages

available to agriculture produce. food processing industry can provide such linkage

Lots of grains, vegetables, fruits end up being thrown away due to rotting However, if such food items are processed and converted to a form where its perishability can be decreased and thus, shelf life can be increased, it can serve a very useful purpose in ensuring food security for all and raising revenues for the farmers.

Similarly, India's tropical climate reduces the quality of milk within span of hours and thus, processing it and converting to various forms like cheese, butter etc. can go a long way.

Given the rising population and need for such steps, food processing industry is truly a sunrise industry for India.

Other sunrise industries of India like Tourism also holds tremendous potential in uplifting its economy. 13 billion people were reported as tourists in last year. India's vast geography like hills, mountains, beaches, coasts etc. presents an ample opportunity for India to tap such potential and register itself in one of the best tourist destinations.

10. Scientific and technological advancements have removed the constraints posed by geographical factors which determine the location of industries. Comment. Giving examples, discuss the new factors that have come into play as a result.

वैज्ञानिक और प्रौद्योगिकीय प्रगति ने उद्योगों की अवस्थिति को निर्धारित करने वाले भौगोलिक कारकों द्वारा प्रस्तुत की जाने वाली बाधाओं को समाप्त कर दिया है। टिप्पणी कीजिए। इनके परिणाम स्वरूप उभरने वाले नए कारकों पर भी सोदाहरण चर्चा कीजिए।

It is very true that Scientific and technological advancements have removed the constraints and limitations put by geographical factors in determining location of industries.

Facilities of transport have reduced the transportation costs and thus, raw materials can be accessed from any location.

Digital technology has increased the ease in doing business & reduced paperwork.

AUTOMATION

Heavy machines, conveyor belts, etc. have increased the productivity and thus easy cover of the money spent.

Research and development has allowed the availability of many ~~substi~~ substitutes and lesser dependence

on single factor.

eg: Australia's wool industry is one of the largest in world despite its less domestic demand and isolated location. This is due to transportation facilities and high production which ultimately covers up for extra travel losses.

Iron and steel industry despite depending on raw materials of coal and iron ore is present in coastal locations of Japan, which has neither of the raw material.

Unavailability of Sugarcane in Germany But research in Science allowed it to extract sugar from another substitute like Sugar Beet.

Therefore, the geological factors have lost their relevance in location of industries determination.

New factors :-

- Ease of import / export.
- Supporting Govt. Policies.
- Easier land acquisition and set up.
- Availability of energy and water resources.
- Environmental impact of the project

11. Give a brief distribution of major grasslands of the world. Discuss the reasons behind the temperate grasslands becoming the grain baskets of the world. Also compare their performance vis-a-vis tropical grasslands in this regard.

विश्व के प्रमुख घासस्थलों के वितरण का एक संक्षिप्त विवरण प्रस्तुत कीजिए। शीतोष्ण घासस्थलों के विश्व की खाद्यान्न टोकरी बनने के निहित कारणों की चर्चा कीजिए। इस संबंध में उष्णकटिबंधीय घासस्थलों की तुलना में उनके प्रदर्शन की चर्चा भी कीजिए।

Major grasslands of the worlds :-

- TROPICAL GRASSLANDS : Grasslands located near tropics is called tropical grasslands. These are in the interior parts of the continents. These are under alternate dry and wet season. Also, called Savannah.

- Temperate Grasslands – Grasslands beyond the tropical regions and in temperate latitudes are temperate Grasslands. These have warm and wet summers and cool and dry winters. These are known as Prairies in North America, Downs in Australia, Veldt in Africa, Steppes in Central Asia. These are shorter grasses as compared to tropical Grasslands are more

nutritious.

Temperate grasslands are known as grain baskets of the world.

- These areas are highly enriched with crops like wheat and thus called 'food bowl of India'.
- These areas have highly fertile lands.
- Lands are cleared to grow various millets, potato, etc.
- Technology and capital in European countries.

However, the area of tropical grasslands due to high density is not easy to clear and soil is not suitable for growth of such crops.

Extreme temperature at tropics do not favour and results into increased pest diseases.

12. Weather and climate information plays a significant role in increasing agricultural productivity as well as minimising crop losses. Comment. Also examine the ways in which forecasting system can be made more effective and inclusive.

मौसम और जलवायु संबंधी सूचना कृषि उत्पादकता को बढ़ाने एवं साथ ही साथ फसल के नुकसान को कम करने में महत्वपूर्ण भूमिका निभाती है। टिप्पणी कीजिए। इसके साथ ही उन उपायों का परीक्षण कीजिए जिससे पूर्वानुमान प्रणाली को और अधिक प्रभावी एवं समावेशी बनाया जा सकता है।

Agriculture's huge dependence on the climate and weather of a location, making it vulnerable to the changes in it. Therefore, information on them can play a very crucial role in determining its productivity & crop losses.

- Expected rainfall in the upcoming season can provide an idea on the suitable crops that can be grown in that particular season.

For ex. Last year, IMD predicted higher rainfall in India. Farmers therefore grew large amounts of paddy crops and pulses which are water intensive. This helped us in solving our pulses shortage crisis.

- Daily weather reports can provide accurate time for harvesting the crops.

For ex. Crops like cotton are very intolerant to rainfall showers at time of harvest. Early detection of monsoon can help in early harvest and thus preventing crop loss.

- Forecasting's given importance makes it a urgent need for it to be effective as well as inclusive.

- Wrong information can lead to bad decisions by the farmers and thus impacting him negatively. Huge investments made in the hope of good monsoon can result in losses and thus huge debt burden.

-If the information is not available to reach each and every farmer, its use cannot be done to full potential. Every farmer plays a significant role in ensuring India's food security. Therefore, inclusiveness is must.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

13. The Paris Climate agreement sets ambitious goals but does not go far enough in mechanisms to achieve the aims. Comment. Also highlight the challenges which a developing country like India faces to achieve the targets it has set for itself.

पेरिस जलवायु समझौता महत्वाकांक्षी लक्ष्यों को तो निर्धारित करता है किन्तु इन लक्ष्यों को प्राप्त करने के लिए पर्याप्त प्रावधानों की व्यवस्था नहीं करता है। टिप्पणी कीजिए। साथ ही, भारत जैसे विकासशील देश द्वारा अपने लिए निर्धारित किए गए लक्ष्यों को प्राप्त करने में सामना की जाने वाली चुनौतियों पर भी प्रकाश डालिए।

Paris Climate deal, ~~ratif~~ has recently come into action after being ratified by more than 50% countries. It has set the ambitious targets ie. INDCs for the countries. However, it is being accused of lacking in mechanisms to achieve the aims given in INDCs.

- Green Climate fund funded by developed countries, with capital of $100 billion by 2020 is current under $10 billion. No legal mechanisms to put pressure on developed countries to raise the funds. Therefore, it becomes difficult for countries like India, to invest in costly climate resilient and cleaner energy technologies.

- Aims provided by the countries thrugh will be scrutinised properly, but no proper mechanisms to address the situation in case the country fails to do so.

- Despite the Global Climate fund, deal fails to address the challenges, developing countries may face in the process of achieving their aims.

Challenges faced by India :-

- India has set the target of reducing emissions by 33-35% of its GDP by 2030. However, the huge dependence on coal as energy resource and slow pace expanding of other energy resources like Solar and wind energy, makes this difficult to achieve.

- Lack of funds in GCF and lesser public expenditure on cleaner energy fuels further adds to the situation.

- Creation of 2.5 to 3 billion tonnes of CO_2 reserves seems unachievable due to reducing forest cover and water bodies like wetlands.

Though, India has shown a large commitment towards Paris Climate deal, it must take adequate steps to fulfill those goals. International cooperation should be increased to better investments in cleaner technologies.

14. Describe the factors responsible for increase in marine pollution in the past few decades. What impact does marine pollution have on the ocean ecosystem? Discuss the measures taken by the international community to deal with it.

पिछले कुछ दशकों में समुद्री प्रदूषण में हुई वृद्धि के लिए जिम्मेदार कारकों का वर्णन कीजिए। महासागरीय पारिस्थितिकी तंत्र पर समुद्री प्रदूषण का क्या प्रभाव पड़ता है? इससे निपटने के लिए अंतरराष्ट्रीय समुदाय द्वारा किए गए उपायों की चर्चा कीजिए।

Factors responsible for increase in marine pollution :-

→ dumping of industrial waste in rivers like Ganga which ultimately drains to large oceans.

→ Washing away of fertilisers, harmful chemicals etc. due to ~~or~~ their excessive use by the rainwater into oceans.

→ Presence of highly populated areas like slums nearby bodies like lakes, rivers etc.

→ Oil spills eg. Recently at Ennore, TN.

→ Open defecation common at many places

→ Nuclear waste released into nearby rivers.

→ Municipal waste like Sewage not recycled and dumped in waterbodies

Impact on marine ecosystem:

- Hot industrial water rises the temp. of waterbodies resulting into killing of organisms like fishes etc.
- Huge Plastic Pollution dumped is consumed by organisms
- Increase in BOD/COD levels of water.
- Coral Bleaching due to rising temp. of ocean waters.
- Chemicals from industries increasing the acidity of water and thus, hampering the growth of phytoplanktons.
- Foam, fires etc in lakes. eg. Belandur lake in Karnataka

Measures taken by international community

- Addressing rising sea temperature and levels through global commitments like Paris Climate deal.
- Guidelines & Regulations to prevent oil spills.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

- Internation recognition of importance of mangroves conservation.

- Role of International Maritime Organisation (IMO) in keeping a watch on ~~to~~ Marine Environment.

Don't write anything this margin (इस मार्जिन में कुछ भी न लिखें)

15. Discuss the environmental impact of electronic waste and the best practices for its handling in the context of the E-waste (Management) Rules, 2016. Also suggest some ways to incentivise consumers to utilise and dispose-off the e-waste properly.

इलेक्ट्रॉनिक अपशिष्ट के पर्यावरणीय प्रभावों एवं ई-अपशिष्ट (प्रबंधन) नियम, 2016 के संदर्भ में इसके निष्पादन के लिए सर्वोत्तम तरीकों पर चर्चा कीजिए। ई-अपशिष्ट के उचित उपयोग और निपटान के लिए उपभोक्ताओं को प्रोत्साहन प्रदान करने हेतु कुछ उपाय भी सुझाइए।

Environmental impact of e-waste :

- Many harmful metals like Lead etc. leaches away to soil and affect its fertility.
- Mercury and other haemful chemicals have the risk of entering into food chains.

Practices for handling it

- Recent e-waste (Management) Rules, 2016 have introduced the concept of mandatory safe disposal of ~~E~~ instruments like CFC lamps etc.
- More onus has been put on manufacturers of such items to

ensure safe disposal.

- Extended Producer Responsibility (EPR) concept has been introduced.

With the technologies changing daily, e-waste has increased manifolds in the past few years.

Despite the responsibility shifting on producers and manufacturers, greater responsibility lies with consumers.

Therefore, they need to be incentivised to efficiently dispose of e-waste.

- Reimbursement system where particular amt. of the price of the product can be reimbursed in case proper steps are followed for disposal.

-

16. An emissions-reduction approach to fighting global warming is not enough. Alternative solutions involving climate engineering might have to be deployed sooner than we think. Defining climate engineering, critically examine the statement.

ग्लोबल वार्मिंग से निपटने के लिए केवल उत्सर्जन-न्यूनीकरण उपागम (दृष्टिकोण) पर्याप्त नहीं है। संभवत: हमें अनुमानित समय से पूर्व ही,क्लाइमेट इंजीनियरिंग को सम्मिलित करने वाले वैकल्पिक समाधान को अपनाने की आवश्यकता पड़ सकती है। क्लाइमेट इंजीनियरिंग को परिभाषित करते हुए, इस कथन का आलोचनात्मक परीक्षण कीजिए।

Climate engineering is the process of reducing the global warming by not just reducing the amount of emissions but also focussing on other alternatives which can reduce Sun's isolation.

For ex. Aerosols act as an important components in the atmosphere which can deflect sun's energy and thus reducing global warming.
Aerosols also facilitate the creation of raindrops on its surface which ultimately can wash away the harmful gases of atmosphere.

Don't write anything this margin (इस भाग में कुछ ना लिखें)

17. Discuss how drought is more of a man-made disaster than a mere deficiency of rainfall. Elaborate on the consequences of desertification that drought prone regions face. Also, bring out the preventive steps to be taken in light of targets to curb desertification as mentioned under the SDGs.

चर्चा कीजिए कि किस प्रकार सूखा केवल वर्षा की कमी से पैदा आपदा न हो कर मुख्य रूप से एक मानव-निर्मित आपदा है। सूखा प्रवण क्षेत्रों द्वारा सामना किए जाने वाले मरुस्थलीकरण के परिणामों को विस्तार से बताइए। साथ ही, मरुस्थलीकरण पर अंकुश लगाने के लिए SDGs के अंतर्गत उल्लिखित लक्ष्यों के प्रकाश में उठाए जाने वाले निवारक कदमों को स्पष्ट कीजिए।

Drought, caused due to the shortage of availability of water, is more of a man-made disasters.

- Receding groundwater levels can be attributed excessive usage during the past times or by the nearby regions. For ex. ~~free~~ subsidised power and water pumps available to farmers during Green revolution resulted into huge groundwater extraction.
- Growing water intensive crops in water scarce regions.
- Increasing Greenhouse gases which causes global warming and impacts Indian monsoon cycles.

- Diversion of water from rivers etc. results into lower drainage into oceans and thus weakening monsoon cycles.
- Reducing green cover, which induces more rainfall.

Consequences :-

- Loss of livelihoods as agriculture, the lifeline of an economy is hugely dependent on water resources.
- Malnutrition due to food scarcity.
- Emigration from such areas and putting further pressure on highly densely populated areas disturbs India's demography.

Preventive steps to be taken :

- Growing crops with less water requirements. Govt. should encourage such steps by increasing MSP for such crops.
- Interlinking of river waters. For ex Ken-betwa linking to provide water to drought prone regions of MP.
- Recharge of groundwater levels through rain water harvesting techniques.
- Rationing of prices of water.
- Soil Health card to determine the soil quality and crops better suitable for it.

18. India's first National Disaster Management Plan may fulfill the legal requirement of having a plan but it may not be very effective in achieving its objective of building resilience. Critically analyse.

भारत की प्रथम राष्ट्रीय आपदा प्रबंधन योजना, भले ही एक योजना होने की विधिक आवश्यकता को पूर्ण कर सकती है किन्तु यह प्रत्यास्थता निर्माण करने के अपने उद्देश्य को प्राप्त करने में अधिक प्रभावी नहीं हो सकती। आलोचनात्मक विश्लेषण कीजिए।

India had its first National Disaster Management Plan in 2016. Though, it is legally backed up but its effectiveness in preventing disasters and building resilience to them is still contested. It is built on the lines of International Sendai Framework. It aims to reduce the loss of lives and livelihoods and other social, economic assets.

19. A better prepared community is key to effective disaster risk reduction. Citing specific examples, examine the importance of the role of local government and community in dealing with disasters.

प्रभावी आपदा जोखिम न्यूनीकरण के लिए एक बेहतर रूप से तैयार समुदाय महत्वपूर्ण है। विशिष्ट उदाहरण देते हुए आपदाओं से निपटने में स्थानीय सरकार एवं समुदाय की भूमिका के महत्व का परीक्षण कीजिए।

A community is the FIRST RESPONDER to any kind of disaster. So, their preparedness is very crucial in effective disaster risk reduction.

A local community has a better knowledge on the local topography. Their preparedness can even assist the forces like NDRF to reach at the remotest locations of the disasters and rescue people.

However, on the other hand, their unpreparedness can add more panic to the situation.

On the similar lines, local govt. can direct its people to take required steps, when the regulations from centre or state govt. cannot reach such

areas.

Community Based disaster Management (CBDM) also hastens the recovery from a disaster. Their role in distribution of critical services to the victims of disasters cannot be underminned.

For ex Nepal Earthquake in 2015 saw many communities joining together and helping in rescue of people.

For ex Tsunami of 2004 where role of local fishermen was critical in the crisis.

20. What is the role of NDRF in managing disasters in the country? Highlighting the challenges that NDRF has been facing, discuss why it is still the armed forces which end up being the most visible force at hand during disasters.

देश में आपदाओं के प्रबंधन में NDRF की क्या भूमिका है? NDRF द्वारा सामना की जाती रही चुनौतियों पर प्रकाश डालते हुए चर्चा कीजिए कि आपदाओं के दौरान केवल सशस्त्र बल ही क्यों अभी भी सहज और सर्वाधिक उपलब्ध बल के रूप में दृष्टिगोचर होते हैं।

NDRF was constituted under NDMA Act, 2005. It was first such force created in the world, solely for managing the disasters. It ~~on~~ is a paramilitary force under MoHA.

Role in managing disasters:

- NDRF assisted by National executive committees is ~~rep~~ responsible for the response to the disaster, which includes rescue and providing relief.

However, even after 12 yrs of its formation, it faces several challenges today.

- Underequipped

Unavailability of various crucial new technological communication tools, rescue vehicles.

* Undermanning

Unavailability of adequate number of manforce required for large scale operations.

* No defined role

Its role and steps it should take in case of disasters is not clearly defined in the Act and thus, huge vagueness in the measures taken by it.

Due to such challenges, it is most of the time, assisted by Armed Forces in various disasters.

Armed Forces have better discipline and efficiency in their activities due to which, after they come at front during the disasters.

Though their services can be availed at crisis but regular call to them undermines the functioning and status of NDRF. So, it is

important to strengthen NDRF with tools, manforce, technology, and training to be better positioned for handling such disasters.