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GENERAL STUDIES (TEST CODE : 825)

Name of Candidate	Dr. Bilal Mohi uddin Bhat		
Medium Hindi/Eng.	English	Registration Number	21654
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INDEX TABLE

Q. No.	Maximum Marks	Marks Obtained
1	12.5	
2	12.5	
3	12.5	
4	12.5	
5	12.5	
6	12.5	
7	12.5	
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14	12.5	
15	12.5	
16	12.5	
17	12.5	
18	12.5	
19	12.5	
20	12.5	

Total Marks Obtained:

Remarks:

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

All the questions are compulsory and carry 12.5 marks each.

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

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

Northeast India is a cradle of biodiversity. It is the hotspot of myraid number of Species. These wild varieties have been used to develop new varieties suiting to changing climate.

India being agricultural economy can ensure growth only when it takes all areas and develop them to viable agriculture one's.

Northeast India is hilly area with some plateaus in between (Meghalaya). The climate is variable with huge rainfall distributed throughout.

With plenty of rainfall

there some Issues like.

① leaching of essential nutrients of the soil rendering soil infertile and less productive.

② Soil erosion particularly Rill erosion, gully erosion which leads to barren soil not suitable for the good productivity.

③ Flooding of the areas which leads to destruction in crop and also bring silt for good growth.

Some of the Corrective measure particularly towards Soil are -

① Terrace farming should be encouraged that will help to preserve

the productivity of land.

(2) plantation of area specific trees along the gullies and rills. Also against wind and water courses.

(3) check dams to decrease the speed of water and thus retaining the ground water.

In relation to other issues in general -

(1) use of organic fertilizers (Sikkim also already become first organic State).

(2) Drip Irrigation. per drop more crop approach (PMKSY)

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

2. Examine the reasons for depleting groundwater levels and acute groundwater stress in some regions of India. What measures should be taken to check groundwater exploitation and ensure recharge of aquifers in water stressed areas?

भारत के कुछ क्षेत्रों में भूजल स्तर के घटने और भूजल पर अत्यधिक दबाव के कारणों का परीक्षण कीजिए। भूजल के दोहन को कम करने तथा जल संकट ग्रस्त क्षेत्रों में जलभृतों (जलभरों) का पुनर्भरण सुनिश्चित करने हेतु क्या उपाय किए जाने चाहिए?

Groundwater constitute major chunk of freshwater on earth. It has been utilized from Harrapan Civilization to present. But misuse of water has led to decline in the ground water level particularly in North west, North Indian gangetic plains. Reasons are –

① No Regulation of groundwater. As there is no policy to stop its use or restrict.

② National water policy treats "water" as public good so tragedy of common syndrome also applies to water leading its misuse.

(3) In areas of Green Revolution it has been seen that water guzzling crops like Rice, sugarcane are sown. This leads tremendous water stress.

(4) Industrial use of groundwater is more problem as the quantum of water used is more.

It must be noted that there should be balance between what goes in and what goes out. Because of climate change, already there is decline in the rainfall (or more variability) leading less recharge of aquifers.

Following measures should be implemented to check the ground water exploitation -

(1) Treat "water" as private good

for the betterment of all and regulate tubewell and well digging.

(2) Check dams should be made; So that aquifers are recharged quickly.

(3) For recharging aquifers a landscape approach has to Implemented (From Source to Sink).

(4) water cess.

(5) Inter-linking of small rivers and canal Irrigation.

(6) use of less water utilizible crops in water stressed area like pulses, Bajra etc.

(7) Drip Irrigation, so to avoid the run off and wastage of water.

(8) Guidlines by CWC.

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

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

Plate tectonics theory explains the phenomenon of continent formation, earthquakes and mountain formation. As per the theory, Earth's lithosphere is made up of major and minor plates which rest on semi-solid asthenosphere and hence move. The interaction between plates leads to formation, destruction and earthquakes.

Himalayas were formed some 75 million years ago when the Indo-Australian plate (which was part of African plate and Mozambique) start drifting towards the eurasian plate. The north

end of Indo-australian plate striked the eurasian plate leading to formation of Himalayas. This is an example of continental-continental plate interaction. It is still going on. Indo-australian plate (Indian plate) is moving towards Eurasian plate creating a thrust zone in the northeast and a sub-duction zone in the Baluchistan in an anticlockwise direction. Earlier Tethys sea was between two plates whose reminants are Mideterean Sea (Some call pangong lake also).

Deccan traps are formed by the plate tectonics

because of energy which are creating tremendous force forcing the molten lava to come out and cool off. Hence deccan traps are made of Igneous rocks proving the theory right.

4. Though the Paris Agreement reached at the 2015 United Nations Climate Change Conference is being called as a historic turning point, it is also being criticized on many grounds. In this context, discuss the outcomes of the Paris Agreement.

संयुक्त राष्ट्र जलवायु परिवर्तन सम्मेलन-2015 के दौरान संपन्न "पेरिस समझौते" को यद्यपि एक क्रांतिकारी परिवर्तन माना जा रहा है तथापि कई आधारों पर इसकी आलोचना भी की जा रही है। इस संदर्भ में पेरिस समझौते के नतीजों (आउटकम) पर चर्चा कीजिए।

Paris Agreement at UNFCCC Confesance was hutoric and reinforced the Commitment of countries to save the planet. Paris Agreement highling points are as under-

① Intended Nationally determined Commitments were made by all Countries (INDC). It is related to non-binding reducha of the emissin as percentage of GDP. India's INDC is 25-30% reductra. by 2032.

② The principle of common but differentiated Responsibilas (CBDR)

were reiterated putting the onus of more responsibility on developed nation (particularly in relation to funds)

(3) Green climate fund which will be $100 billion by 2020. This will be made to available before the developing nations for Adaptation and mitigation measures.

(4) More emphasis has been put on adaptation and mitigation. use of technology which will make nations adaptive to the changing climate.

But at the same time the UNFCCC Paris meet did not rose to the expectation in following ways-

(1) INDCs are not binding and there is no mechanism to ensure

the Implementation of commitment. eg. cross checks, Surveillance etc.

(2) Finance is key to developing nation. There is also skeptical emotion placed on the GCF.

(3) The clause of "life style" change put forward by India was not accepted.

5. 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.
मत्स्य के सबसे बड़े उत्पादकों में से एक होने के बाद भी, मत्स्य-क्षेत्र में सुधार की अभी भी पर्याप्त संभावनाएँ हैं। उपरोक्त कथन के आलोक में भारत में अंतर्देशीय और समुद्री मत्स्यन दोनों क्षेत्रों में व्याप्त समस्याओं एवं संभावनाओं पर चर्चा करें।

Fish Industry is important Industry for a nation like India which has 7100 km of coastline. It is tremendous potential of livelihood for the coastal people.

The Irony of Indian fishery Industry is that its Inland production of fishs is more than Marine production. This is attributed to two factors

① Pisciculture is lifline of mixed agriculture particularly in areas like punjab, Haryan etc where it is a part of Rice cultivation.

② Marine fish zones near Coastal

areas have declined potential became of over exploitation by traditional fishing and hence to explore to the deeper areas better technology is needed.

(3) More Research & development in inland fishing and good extension work by agriculture department has also led to increased Inland fish production.

India has tremendous potential to grow in fisheries industry as marine fishing is still underutilized what we need to do—

(1) Bring technology like modern trawlers and mechanized fishing to utilizes the marine fishing beyond 12 nautical miles.

(2) Extension work and bringing

awareness among the fisherman and about the technology.

(3) Good marketing channels to ensure that increased production reaches to the market.

(4) Exports should be encouraged.

With reference to Inland fish production what we need to do is <u>diversify</u> the <u>fisheries seeds</u>. China has more than 300 fish species in Inland Pisciculture while in India not more than a dozen.

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

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

Urea is a simple fertilizer. It is a source of Nitrogen. It enhances the fertility of soil and gives good production.

Urea is only fertilizer which is under government control. Thus it is subsidized and this has led to its misuse, overuse among the farmers. The normal ratio of NPK of 4:2:1 has shot up to myriad figure. Nutrient based subsidy scheme is for phosphorus & K & not for urea. Nutrient based subsidy scheme will

ensure that it is not misused.

Urea in the soil is converted to nitrites and nitrates. Plant utilize nitrogen in the form of nitrates (done by Azobacter, Rhizobium etc). When there is more urea application. There is accumulation of nitrates in the soil. With irrigation it is spilled to the nearest sources like water bodies, underground water sources and can become dangerous to humans and animals.

It causes "blue baby syndrome" in humans (less O_2 carrying capacity of hemoglobin) & nitrate poisoning in animals.

The story does not end here. Nitrates in the soil is converted back to nitrite to free nitrogen. This

nitrogen is cause of ozone depletion (Nitrogen System of ozone depletion) Also causes photochemical Smog in cities. Nitrogen pollution can be managed by -

① "Neem Coated Urea" - as per latest govt. orders. It would help in less pollution as it slows down the urea breakdown.

② Nutrient based Subsidy Scheme - Urea should be included.

③ Organic farming (PM organic farming Scheme).

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

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

Coral reefs are highly productive ecosystems and shelves myraid biodiversity. It is house of number of fishs, arthopods, Molluscs and algae. The association of different species with corals make them central to the existence of the coastal ecosystem. More biodiversity, means more no. of links in the food web and better, stable system. More diversity is also helpful from human perspective as more gene pool, which can benefit us for making genetically superior

Species but betterment of mankind. Corals thrive in shallow waters with 21°C temperature. The following are the reasons for decline of corals – also called Coral bleeching –

① Increase in the mean temperature of the sea water because of global climate change.

② Ocean acidification has led to the demage because acidic water favours the dissolution of $CaCO_3$ shell.

③ oil spills by oil giants eg. lot of areas of Marine national Park Gujarat is demaged by oils spills by RIL (Jamnagar) & Essar (Jamnagar).

(4) Marine Sea pollution like silting of oceans has led to decline.

(5) Increased tourism in these critical area eg. in Coral reefs of Andaman and Lakshadeep.

Measures for preservation

1. closure of critical areas of Corals (in Gujarat & Andaman)
2. Oil Spill clearance using oil zapper tech.
3. Regulate tourism.
4. Regulate fishing in these areas.
5. General climate change mitigation measures.

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

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

Environmental Impact Assessment is a statutory tool under EPA, 1986 which holistically helps us to provide viability of any project viz a viz environment. It ensures that project is in consonance with sustainable development. It should not hurt environment irreversibly. under this Screening of project by classifying them into Category-A & Category II (Cat-A & B under cat-II) Scoping, Examining & Assessment is done. With public consultation and public participation it becomes more inclusive and representative.

The following are the deficiencies in design –

① The categorization of the project are based on the large scale of Industries leaving behind small Industries which have sometimes more potential of environment damage.

② Environment Impact Assessment is more "passive in outlook". It relies on the information served by the Industry than actively doing solely by itself.

③ public participation and public consultation is not done in true spirit.

④ Pressure on Environmental ministry by other powerful ministries to

give permission mars the whole procen of EIA. (Independent Env. Impact Assesment authority was suggested by SC1).

(5) Exempted areas are Sometimes Creating tremendous demage. eg. National highway in a biodiverse hotspot or in wildlife Sanctuary.

9. Continental shelves are the seaward extension of the continent from shoreline and have enormous economic and strategic significance. Elaborate.

महाद्वीपीय मग्नतट महाद्वीपों के तटरेखा से समुद्र की ओर विस्तृत हैं तथा इनका महत्त्वपूर्ण आर्थिक और सामरिक महत्व है। सविस्तार समझाइये।

Continental shelves are areas which lie just between shoreline ~~and~~ Continental landmass and Ocean floor continental rise. Continental shelves are said to be full of resources like metallic and non-metallic minerals. It also Serves Strategic significance because the nature & structure of Continental Shelves will dictates the ports which can be made over them. There are more Strategic ports on the West side / west coast because Continental Shelf is emergent type than on the east coast.

Continental Shelves have importance of energy resources.

They are sources of uranium & other radioactive minerals & ores. Besides this the energy of waves over these areas have been utilized in many Countries.

It also determine the Strategic mainland boundry. If a County has more continental shelf, it has more control over the resources and Islands. South China Sea dispute also surrounds the contention of China's Continental Shelf extending over the disputed Islands.

Since India's Continental Shelf is large in areas & has tremendous advantage to utilize its

Full potential both strategically and economically.

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

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

Cement Industry in India is Spread over the areas which have -

1. Resource abundant specific to the cement industry like limestone, Silica etc,

2. Coal reserves because cement Industry needs coal as energy for the process.

3. Labour Supply.

Cement Industry is more distributed to northwest areas of Rajasthan, (Kota) Gujarat, MP. it extends to the areas of Jharkhand, Chattisgarh, Andrapradesh (north).

The following are the factors which affect its location –

1. Away from city areas because causes pollution.
2. Supply of coal (electricity) for the process of Cement production.
3. Raw material.
4. Labour.
5. Market areas. (Distance from the market).

11. Inspite of being one of the most important agro based industry in the country, sugar industry in India suffers from multiple structural and functional problems. Exam ne.

देश में सबसे महत्वपूर्ण कृषि उद्योगों में से एक होने के बाद भी, चीनी उद्योग भारत में विभिन्न संरचनात्मक और कार्यात्मक समस्याओं से ग्रसित है। परीक्षण कीजिए।

Sugar Industry is the lifeline of Sugarcane growing areas. Millions of farmers are dependent on this Industry. The same thing has led to the problem in itself.

Sugar Industry is suffering because of following reasons—

(1) There is a complete disconnect between the market price and the price provided to the sugarcane farmers. There are two prices i,e Fair and Remunrative price (FRP) by central govt. and State administaked price (SAP). FRP is done first while as poltical states (which have

huge vote bank among the farmers) announced SAP which is over and above the FRP. So sugar mills have to pay SAP to the farmers which is more.

(2) Sugar industry was having restriction of "levy sugar" and the control of how much sugar they can sell in market, which are done away after Rangarajan Committee report.

(3) Compulsory Jute packing of sugar (promotion of Jute) which is now restricted only to 20%.

(4) Sugar mills can only buy the sugarcane from the areas of 10 km from the mills. They have to buy all the sugarcane.

There restriction has led to the development of debt problems in the sugar mills. They are not able to give money to the farmers because of less sugar market or recession in the sugar sales. The backward link is regulated by govt. Whereas forward link is market control, with no connection between two.

12. How do physical environment and proximity to the market affect the location of fruit-farming in temperate regions.

भौतिक पर्यावरण और बाजार की निकटता शीतोष्ण कटिबंधीय क्षेत्रों में फलों की खेती को किस प्रकार प्रभावित करती है?

Fruit farming is mostly done in temperate regions. Medeteean areas are fruit booming areas of the world. In India temperate States like J & K (Kashmir valley) & Himachal (Shimla) are growing more fruits. (Apple) etc.

physical environment is essential for the horticulture crops like apple, grapes etc and the Midetereain climate is best suited with rainfall in winter and dry summers. Other most important factors is Soil. Rich & fertile Soil are essential for the

growth of the fruits like Apple, grapes, Apricot etc.

Market has to play its role. Fruits need to be send to market immediately to lessen production loss. Fruits from the temperate areas are loaded in the truck to the nearest market (Truck Farming). They are sophisticately packed to be exported also.

But fruit industry in India is limited (temperate fruits) to the north most parts and markets are either local or to major metropolitan cities. This makes these fruits costlier than tropical fruits.

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

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

Deserts and Salnie areas have harsh living Conditions. Deserts have poor rainfall and high temperature. Whereas Salnie Soils are Saturated with Salts.

Vegetation in Deserts have Specalized to minimize water loss. The vegetation have limited the leaves to Spines & thorns to minimize the water loss. Trees have deep roots to reach the deep water layers. The Cuticle of Stem is thick and highly reflective to minimize water loss and more reflection (albedo) eg. Cactus, Julioflora.

Saline vegetation is more limited because of high Salinity. Mangroves (Rhizophora family) are suited to the Saline water and soils. These vegetation have special roots for breathing Called pneumatophores. Saline vegetation uses high salts

They have specialized root system which is highly selective and combats the shocks of high salt. Saline vegetation forms important place in area of Gujarat and the Coastal area. They are home of different birds and huge diversity particularly mangroves. They also

protect from the devasting force of tsunamis.

14. Water should be treated as an economic commodity whose full costs must be recovered from users, so as to ensure efficiency in service provision. In this context, discuss the viability of PPP model of water supply and management in India. Also, highlight the challenges that can arise in implementing the same.

जल को एक ऐसी आर्थिक वस्तु माना जाना चाहिए जिसकी पूरी कीमत उपभोक्ताओं से वसूल की जानी अनिवार्य हो ताकि कुशलतापूर्वक सेवा प्रदान करना सुनिश्चित किया जा सके। इस संदर्भ में, भारत में जल आपूर्ति और प्रबंधन हेतु पी.पी.पी. मॉडल की व्यवहार्यता पर चर्चा कीजिए। साथ ही, उन चुनौतियों पर विशिष्ट रूप से प्रकाश डालिए जो इसके कार्यान्वयन के दौरान उत्पन्न हो सकती हैं?

Water should be treated as "private good was first time used in the draft of National water policy - 2012.

In context to the present situation of water crisis and depleting water resources in the country, Implementing viable PPP mode of water supply management is an effective optem.

It will ensure

① Water is not victim of tragedy of Commons, thus sustainable & responsible utilization of water will

be placed.

(2) Misuse of water will come to Immediate end because now people have to pay more for each drop than paltry govt. municipity water tax.

(3) Rationing of water will take place as well metering. This will bring the effecint and priority based use of water. Rationing in terms of drinking water and usage water.

(4) People will start harvesting the rain water because now they will see it as a good which they purchase.

But at the same time one has to ensure that India is home of poor people who cannot be put under a new burden which can even lead to "revolt against State".

But solution to that problem is that we can identify and put a rationing which is free to a limit to the poor and downtrodden living in the ~~video~~ cities.

It must be noted that PPP model should be implemented in the cities first before moving to villages. In villages we need to spread awareness rather than rationing to the resources.

15. The World Bank recently announced limiting the financing of coal-fired power plants in developing countries. In light of the above statement, explain the detrimental effects of coal-fired power plants on environment and human health. Also analyse the constraints in shifting from coal based power generation to renewable energy in India.

विश्व बैंक ने हाल ही में विकासशील देशों में कोयला संचालित विद्युत उत्पादन संयंत्रों के वित्तपोषण को सीमित करने की घोषणा की है। उपर्युक्त कथन के प्रकाश में, कोयला संचालित विद्युत उत्पादन संयंत्रों के पर्यावरण और मानव स्वास्थ्य पर पड़ने वाले हानिकारक प्रभावों की व्याख्या कीजिए। साथ ही, भारत में कोयला आधारित विद्युत उत्पादन से परिवर्तन कर नवीकरणीय ऊर्जा को अपनाने में आने वाले अवरोधों का विश्लेषण कीजिए।

Coal fired power plants are lefeline of India's electricity generation. We get maximum electricity from coal-based power plants. At the same time, in the tide of global movement towards climate change mitigation, Soon coal based power project will be thing of a part. The WB step of limiting financing of coal-fired power plants is one step out of many.

Coal-fired power plants cause huge pollution. It leads to

effusion of SO_2, N_2O, CO etc poisoning gases which are responsible not only climate change GHGs but ozone depletion. It has impacted the health of people and respiratory problem because of ($PM_{2.5}$ & PM_{10}). It has led to formation of smogs, acid rains. Acid rains has led to degradation of soil and impacted humans & plants in many ways.

In the light of Paris Summit, UNFCCC – INDCs by India has to be met by 2030 (as a responsible nation) we have shift our energy based from coal to other Renewable resources like

water, Nuclear energy, wind energy, solar energy, tidal energy and Biomass. But the shifts take place in a costly manner because the harnessing of Renewable energy need technology, Research & development, & both of them need finance. Hence it is a challenge but a gradual transformation is needed and without hastening the efforts. We have already moved forward in Nuclear, solar (International solar alliance) wind (Suzlon etc) & biomass.

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

16. The recent warming of Indian Ocean not only has environmental but also severe economic consequences. Elaborate. Also, suggest mitigation and adaptation measures to counter the same.

हाल ही के हिन्द महासागर तापन के न केवल पर्यावरणीय बल्कि गंभीर आर्थिक परिणाम भी हैं। विस्तारपूर्वक व्याख्या कीजिए। साथ ही, इसको रोकने के लिए प्रशमन और अनुकूलन उपायों का सुझाव भी दीजिए।

Indian ocean warming has huge impact on nation like India which is dependent more on climatic parameters (monsoon) and resources. Indian ocean warming will lead to following environmental impacts -

① loss of biodiversity . many Specie will be extnd.

② Coral bleaching (loss of association of Coral with the algae (green)

③ Change in the Rainfall pattern which may be detrimental to

already unpredictable monsoons.

(4) Change in the ocean currents which leads to coastal areas becoming more vulnerable.

These will affect India economically -

1. Warming of Indian ocean means change in the monsoon wind pattern. It has a potential to devaste the aquculture and change the cropping pattern.

2. Droughts + flood due to variability of the climate. Huge loss of life and property.

3. Can change the migration of fishs which are economically important for the coastal people.

We can mitigate & adapt to it by

1. Being more monsoon Independent agriculture. (Irrigation should be Improved like dmp,).
2. Flood measures should be placed in a better way, through proper planning.
3. Disaster mangement plan should be inclusive and made in advance.

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

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

Indian economy has growth in an unorthodox way. We shifted from the primary sector directly to the tertiary Sector (Services) bypassing essential Secondary Sector. Secondary Sector is backbone of both primary Sector as well tertiary sector.

Electronics need a great platform to grow. It not only needs manufacturing but research & development. It was neglected from the begning and no govt. policy ever tried to revive it from the recession.

No Sops and encouragement was Supported the electronics Sector till we realize that it figures highest in the Import list.

Now with the focus on the "Made/make in India" programe this Sector is going to get revived from the slowdown.

Following are some of the measures which can ensure Net zero Imports by 2020 —

① Start-up and Stand-up should be encouraged in electronics.

② Formation of manufacturing hubs of electronics which can

be given relaxation in the tax and loans.

(3) govt. need to "skill up" the youth which can be diverted to the electronics. skill policy should ensure that more youth get skills & technical knowhow.

(4) Relaxation of Compulsory Export Promotion policy. (which has been as per new bndgt)

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

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

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

Temperate grasslands are called "Granaries of world" because they are very productive. Rich soil and uniform rainfall brings good harvest of grain & grass lands. Temperate grasslands of USA called Prarie are fertile ~~fertile~~ belt which has been used to grow crops like maize and grasslands.

These farming practices are related with the rearing of cattle particularly beef. It is a sort of mixed farming employed

in the prairies. Maize or corn is not grown to be utilized by humans but for animals. Maize is used for the thriving of huge meat industry in US. They are largest exporters and Consumers of beef.

Since the beef cattle is source of methane from the Ruminant stomach which has added to caused global warming.

Again grasslands also release natural greenhouse gases.

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

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

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

Tropical Countries are full of resources but there are certain reasons for their underdevelopment. They are as under.

(1) Tropical Countries are mostly poor and don't have technological knowhow. They Spend a Struggle in food more and hence could not utilize the resource

(2) These countries ~~are~~ were ruled by Imperialist rich nation who drained resource and made

them dependent on them.

(3) Global burden of disease is maximum in tropical areas & hence more spending on treatment.

(4) There are other problems because of more soil erosion and population density is high which leads to more degradation of Resources.

(5) But there are many tropical countries which have utilized the resource in best possible way

(1) by developing efficient

human resource which can being asset and innovation.

They have convert a useless resource to the useful resources by innovation eg. South east countries in particular Singapore

(2) efficient utilization of Resources to meet for themselves & for imports

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

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

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

Agroforestry means growing of trees along with the crops. It is a agricultural farming which ensure—

(1) Revenue from crops

(2) Revenue from timber by effecint utilization of space in the cropping land.

Agroforestry has ensured

(1) prevented soil erosion

(2) wind erosion

(3) Safety from frost to crops

(4) more revenue

(5) Distribution of Risks in case of monsoon failure.

(6) less Impact on forests because decreased the pressure.

(7) less deforation

(8) provide employment in forests.

9) protect biodiversity.

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