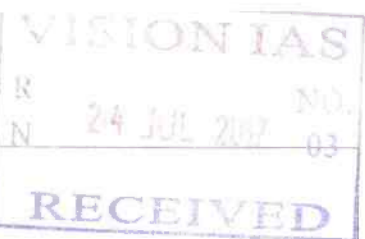




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GENERAL STUDIES (TEST CODE : 1022)

Name of Candidate	KEERTHI VASAN V.		
Medium Eng./Hindi	ENGLISH	Registration Number	143707
Center	ORN	Date	24/7/17

INDEX TABLE			INSTRUCTIONS
Q. No.	Maximum Marks	Marks Obtained	
1	12.5		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 अंग्रेजी 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 than 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।
2	12.5		
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18	12.5		
19	12.5		
20	12.5		
Total Marks Obtained:			
Remarks:			

75, 3rd Floor, Old Rajinder Nagar Market, Near Axis Bank, New Delhi – 110060

103, 1st Floor, B/1-2, Ansal Building, Behind UCO Bank, Dr. Mukherjee Nagar, Delhi – 110009

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

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

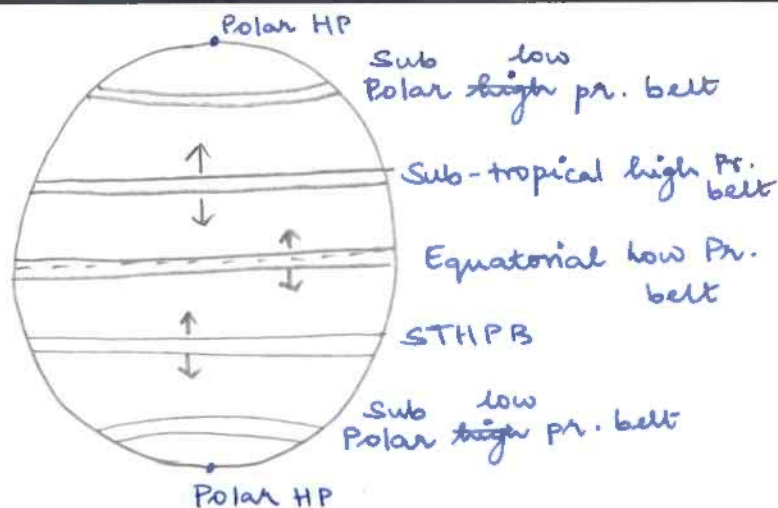
1. What do you understand by seasonal shifting of pressure belts? What impact does it have on the formation of various climatic regions across the globe? Discuss its socio-economic significance.

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।

Seasonal shifting of pressure belts refers to the apparent shift in the pressure cells on the surface of the earth with the movement of the sun between the tropics.

The shift is also attributed to additional factors such as latitude, complex mix of land and water, etc.

The shift in the S. Asian region is observed to be the maximum even upto the range of 25-35° N.



The sub-tropical high pressure belt also shows significant shift. These shifts have a significant impact in the formation of various climatic regions.

The trade winds blow in between the pressure belts and due to Coriolis' force they deviate slightly to the left or right in the Southern and northern hemisphere respectively.

Few of the climatic conditions such as the monsoon in South Asia, the

Mediterranean type of climate are all attributed to the shifting pressure belts.

The Mediterranean climate with hot dry summers and cold moist winters render suitable conditions for the cultivation of citrus fruits, etc.

Socio - Economic Significance :

The shifting belts determine cropping pattern and dictate agricultural practices.

The winter showers due to western disturbances in India lead to snowfall in Himalayan states $\Rightarrow$ enhances tourism.

Mediterranean regions are important for viticulture.

Desert - like conditions are also attributed to the shift in pressure belts.

So, the seasonal shifting plays a vital role in determining the occupation.

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।

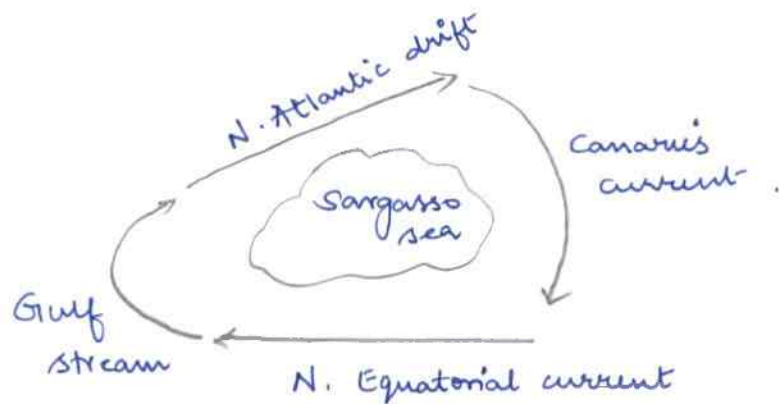
Sargasso sea is the name given to the relatively stable region in the mid Atlantic Ocean. This is the mid portion of the North Atlantic Gyre.

The name is attributed to the sea plant Sargassum (weed) that grows in this portion of the ocean.

All the surrounding ocean currents form an enclosed loop which isolates the centre of the Gyre from the surrounding ocean.

The ocean currents that carry the sediments from the coastal areas deposit it in the centre of the gyre.

and there is only a one way movement of particles.



This portion of the ocean is also a region of immense heating and forms more clouds due to evaporation.

But the salinity of the area cannot be adjusted with the lower saline areas due to the formation of a gyre.

Movement of water radially outwards is not possible.

So, this region is one of the
most saline regions of the world.

The factors causing salinity are,
higher inflow of sediments.
high rate of evaporation.

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 a depositional
landform of rivers which forms
one of the most fertile agricultural
landscapes in the world.

They are important for the
following reasons:

enables agriculture, thus enhancing
livelihood.

Unique ecosystem for the habitation
of various species.

Forms a part of the wetland
ecosystem.

Affects marine life by preventing the
flow of huge quantity of sediments
into oceans.

Existing threats to river deltas :

Rampant sand mining is affuting the ecological balance of the delta regions .

Inflow of sewage and other industrial effluents render the delta regions uncultivable .

Indiscriminate usage of fertilisers by the farmers affuts the deltas and in turn affuts the marine population and the organisms .

Encroachment of deltaic regions for non-farm usage affuts the flow of rivers leading to inland flooding .

Measures to overcome threats :

Sand mining has to be regulated with stringent enforcement mechanism.

River pollution has to be controlled upstream.

Awareness of the farming community has to be raised in order to rationalise the manure & fertiliser use.

Encroachments have to be regulated.

Way forward :

The importance of the river deltas has to be communicated to all the stakeholders involved.

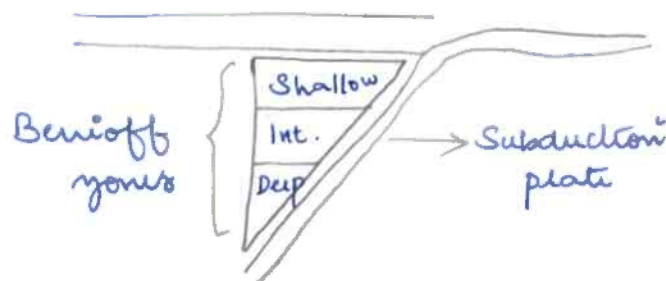
The delta regions are of immense social, economic and ecological significance.

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।

Earthquake is a geological phenomena in which energy waves are released as a result of folding and faulting in the upper layers of the earth surface.

Based on the zone of occurrence, earthquakes may be classified as shallow, intermediate and deep earthquakes.



The depth of the earthquake varies with the distance from the subduction boundary, with deep earthquakes occurring far away from the boundaries as described in the figure.

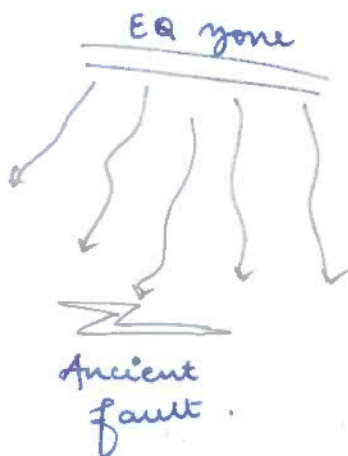
Earthquake prone regions of the world :

- 1) Circum-Pacific belt : The plate boundary regions of the Pacific belt extending from S.E. Asia to Western coast of Americas.
- 2) Alpine - Himalayan belt : Extending from Alps to Trans Asian Himalayan region.
- 3) Rift valley regions : In Africa and across the ocean basin.
- 4) Mid-oceanic ridges : due to transform boundary interactions.
- 5) Volcanic regions : As a result of eruptions.

In India, the Himalayan region is earthquake prone and the islands of Andaman and Nicobar are also prone to the after effects of Indonesian earthquakes. Many inland sites are also prone to earthquakes as discussed below :

Occurrence in inactive regions :

This is attributed to the presence of ancient faults in the otherwise stable peninsular block.



When the earthquake waves reach the fault, it succumbs to it causing earthquakes of varying magnitude.

Mapping of such vulnerable zones is very important for risk reduction.

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) Erosional forms dominate in the west coast due to the following reasons :

- 1) Shorter course of rivers => not much sediments available for deposition.
- 2) Relatively hard peninsular block
=> difficult for collection of sediments as in the soft northern plains.
- 3) Rivers are young and energetic throughout the course and mix directly in the ocean without forming a delta.
- 4) Relatively narrow belt of land to the west of the western ghats.

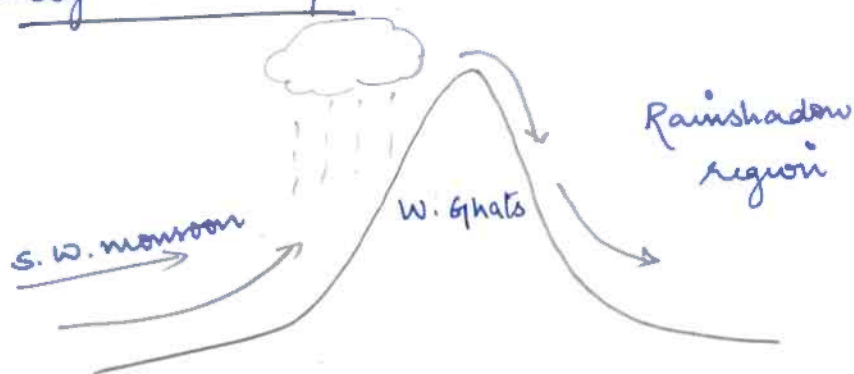


Depositional features in eastern ghats dominate due to longer river course, more sediment availability, softness of the northern plains, river mature and become old by the time it reaches the oceans.

b) Western ghats receive more rainfall as it falls in the windward side of the south west monsoon.

When monsoon winds which is fully moisture laden hit the western ghats, it raises and adiabatically cools leading to rainfall in the western ghats.

region. Whereas parts of Karnataka and Kerala located on the leeward side of the W. Ghats tend to be dry as the incoming winds across the ghats has lost moisture and it adiabatically heats up on the downhill side.



These parts of Karnataka and Kerala fall in the rainshadow region of the western ghats.

The eastern ghats are also otherwise low and the monsoon winds escape across without causing rainfall even in the windward side.

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।

Urbanisation is the phenomena in which there is a significant shift in activities away from the primary sector and concentration on secondary and tertiary sector.

Urbanisation is not new to India. But in the globalised economy, the rate and nature of urbanisation has seen significant changes.

Most of the land use in the urban areas are towards industrial sector and real estate.

With the growing urban space, the land under agriculture is diminishing and most of the land is diverted towards commercial purposes.

Land use is also shifting towards mining, quarrying, etc. which has significant effects on the environment and the local community.

Forest lands are also getting diverted to construct dams which affects many ecologically dependent organisms. Eg: Panna tiger reserve land diverted for dam.

Land is also diverted for construction of roadways and railways. Though it is important to improve transport networks, it has to be supplemented with eco-corridors in order to prevent fragmentation of forests.

The Government of India has come up with many schemes such as AMRUT and Smart cities mission in order

to make effective use of urban spaces.

The Isher Judge Ahluwalia committee has also stated that for sustainable urban development, corresponding rural development is essential.

So, the stakeholders must exercise restraint in diverting land away from farm activities to non-farm. With ever-growing population, this may lead to food insecurity.

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?

The coal bearing strata in geological terms is classified based on the carbon content in coal as :

Anthracite
Bituminous
Lignite
Peat.

Anthracite coal has about 85% of carbon content and is found in Australia and Indonesia and in Kalakot of J&K.

Bituminous coal has slightly less carbon content in the range of 60-70%.

lignite has carbon content in the range of 35-50%. and is found in Neyveli (TN).

Peat is a very poor form of coal with carbon content in the range of 15-20%. It has a very high moisture content and so consumes more calories for burning.

Why coal remains an important source of energy :

Easy availability and easier extraction of energy from coal.

Traditional dependence.

Expensive alternative sources of extracting energy such as nuclear,

solar, wind, etc.

less cost of construction &
operation as compared to non-convention-
al sources.

Implications:

Burning coal gives out harmful
gases such as CO_2 and SO_2 which
leads to climate change.

Health impacts of the people
working in coal mines and power
plants.

Land degradation and loss of forest
cover for extracting coal.

Way forward:

we should work towards
developing indigenous technology to exploit
alternative sources of 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 दानावल/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?

Recently the Parliamentary Standing committee on Science and Technology has examined the causes of forest fires in the Himalayas.

Causes :

The pine needles are more prone to catch fire due to high resin content which makes it dry.

Some farming communities intentionally clear forests by burning, which might go unregulated.

During dry seasons, narrow leaved trees are prone to catch fire due to the resulting dryness and non

availability of water.

Efforts made by authorities :

The efforts are mostly reactive than proactive.

The regulations of preventing slash & burn is not enforced effectively.

The narrow leaved trees are replaced with broad leaved trees at a few locations. This has to be expanded.

Provision of small lakes and ponds in the forest areas with regular refilling. This is not being done uniformly across all regions.

The response forces need to be well equipped to deal with forest fires. Mostly the armed forces are called upon to handle crisis.

Forest fire might have a few
benefits associated with it :

It can lead to secondary succession.

It replenishes the soil nutrients.

It can prevent any existing diseases
from spreading out of forests.

But the frequency should be well
spaced out and there should not be
any anthropological causes to it.

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 are those industries which are well established and functioning, but whose actual potential is far from being realised.

Ex: Food processing industry, jute diversification industry, etc.

Many MSME industries fall under this category and they have a huge potential in the Indian context in the following ways:

- 1) Employment generation.
- 2) Alternate source of livelihood for farmers.
- 3) Women empowerment through SHGs based industries.
- 4) Poverty alleviation, etc.

The food processing industry (FPI) in India has a huge potential both in the domestic and international markets.

It enhances the forward linkages for farmers, thus enhancing their income.

It enhances the food security of the growing population.

It has high demand in the foreign markets. This could help India gain more foreign exchange, thus enhancing India's global position.

The Govt has also launched many schemes for greenfield investments in the FPI sector. This states the importance and the associated potential

of the sector.

Millions of Tonnes of food go wasted during transit and due to non availability of cold storage units. The FPI sector thus has the potential to overcome such drawbacks and to enhance the farmers income as envisaged by the Govt.

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।

Scientific advancements has brought plants closer and has overcome all forms of geographical frontiers in establishing new industries.

Earlier industries were located based on the availability of raw materials and access to the market. For example, ~~coal~~^{steel} industry was located closer to the forests in order to get charcoal for the furnace.

With development of electrical furnace, it shifted closer to iron ore centres.

With further advancement of technology today it is market based mini steel

plants which recycles scrap iron.

Eg: steel plants around Delhi.

So, there are various factors which could determine the location of industries -

- 1) Climate
- 2) Access to raw material
- 3) Market access.
- 4) Access to ports, etc.

With technology, there has been a emergence of various new factors which determine the location, such as -

- 1) Availability of substitutes.
- 2) Faster transportation facilities.
- 3) Recycling capabilities, etc.

Cotton industry which was located near cotton growing regions such as Surat, Ahmedabad are turning more market based (Kanpur, Delhi), due to availability of fabric substitutes and faster

modes of transportation.

Oil and gas industry has also
turned market based with the
advancement in pipeline infrastructure.

Vijay steel-ports based as it imports
coal from Indonesia and Australia. So
no more dependence on coal mines.

So, with technological advancements,
industries are becoming more independent
and less influenced by crucial factors.

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।

The major grasslands of the world can be broadly classified into two :

- 1) Tropical grasslands
- 2) Temperate grasslands .

They are spread across various continents with Tropical grasslands found in Africa, Brazil, Ecuador, etc.

The temperate grasslands are spread across Russia, North America, South Africa, Australia, Europe, China, etc.

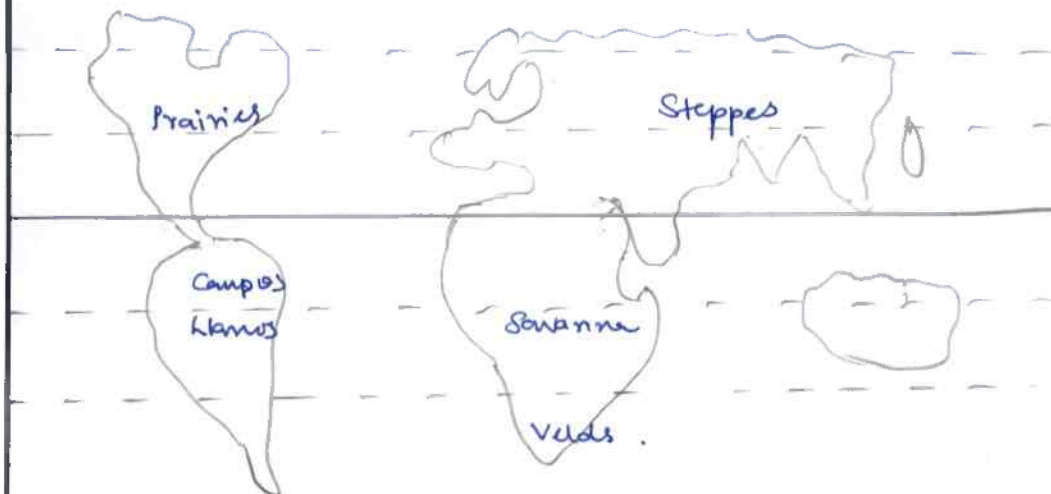
Various regional names are given

to the grasslands such as Pampas,
Velds, Prairies, Steppes, etc.

The temperate grasslands are becoming the grain baskets of the world as they pose suitable conditions for the cultivation of crops like wheat, maize, etc. The USA, Brazil are a few parts of the world compared to be grain baskets.

They produce sufficient quantity for domestic production as well as for export. The breads of Europe are famous across the globe and the presence of suitable vegetation facilitates its growth.

Whereas the tropical grasslands are suitable for dairy farming as the grass is nutritious and the climate is not as suitable as in the temperate region for the cultivation of wheat.



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।

Information regarding the upcoming weather has always served as a crucial factor in agriculture. The farmer decides on the cropping pattern based on this information.

With more than 67% of Indian farmers still depending on rainfed agriculture, the climate information does play a crucial role in enhancing farm income.

A prediction of a poor monsoon can lead farmers to undertake less water intensive crop as most farmers today cannot afford or have access to canal

irrigation.

The information would help them plan the number of crops and the harvesting time.

It also plays a crucial role in the employment of landless farmers who need to plan their alternative source of income in the non-farm season.

Proper planning based on the information available could enhance the productivity. This could bring down the crop losses, which are otherwise lost to floods, hail or even drought in case of a poor monsoon.

But the transmission of information has not been inclusive. Availability of information is critical in the success

of a crop.

The local governments / PRIs can play a proactive role in this regard by acting as centres for transmitting crucial information.

The farmers could also be advised via IVRS systems or SMS services, which could make them take informed choices.

Regional centres for disseminating information is also crucial in the success of farming.

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।

The Paris Climate Agreement is a landmark deal in the history of climate change. The treaty negotiated in the COP 21 meeting at Paris, lays down targets for the countries in meeting challenges of climate change.

While the targets are ambitious in itself and although submitted by the countries themselves in the form of INDCs, the targets lack pragmatism due to following reasons:

- 1) No clear mechanism for funding.
- 2) No clear mechanism for transfer

of technology from developed to developing countries.

- 3) No mechanism to be followed in case of non achievement of the intended targets.
- 4) No dispute redressal mechanism in case of arbitrary discontinuance of support between countries.

In addition to this, the developing countries like India face many challenges to achieve targets that it has set for itself:

- Short time span to cut-down reductions. Though the categorisation of countries identify historical benefits of developed nations, but cut-off in the next 15-20 years affects the economic

prospects of developing nations .

- Rampant poverty : This adds up to the burden of finances to be allotted for climate change initiatives .
- Lack of technology : Alternative technology to substitute the traditional ones are expensive and needs a lot of investment .

Way forward :

With the US, one of the biggest contributor to climate change, walking out of the deal, there looms a large uncertainty . Countries should come together and make pragmatic commitments .

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।

Marine pollution is caused due to anthropological reasons such as oil spills, acid rains, high CO₂ emission, high fertiliser use, etc.

The factors responsible for increase in marine pollution are :

- Urbanisation : With the growth of urban centres, the rivers are getting polluted with sewage and industrial waste which end up polluting the sea.
- Industrialisation : Growth of industries has deposited industrial wastes in water bodies, thus affecting marine ecology.

- Global warming : raised ocean temperature has led to death of marine organisms, thus causing pollution.

Impact on ocean ecosystem :

- Reefs are getting bleached.
- Biological magnification of toxic substances, ultimately entering the human food chain.
- Marine organisms are affected due to increase in ocean temperature.
- Eutrophication due to excess nutrients from fertilisers.
- Formation of dead zones in the oceans, etc.

Measures taken by International Authority :

- International Seabed Authority regulates exploration of sea beds.

- Recent declaration of Ross Sea as marine park, thus preventing economic activities such as fishing and mining.
- International cooperation in dealing with cases on oil spills, etc.

Way forward :

The stakeholders should be made aware of the drastic effects of marine pollution. The international community should enhance cooperation in preventing marine pollution.

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।

E-waste is generated when the electronic device or component has reached the end of its life cycle. There are a few countries such as China and India which generates a lot of e-waste, which if left unattended leads to serious health issues.

Environmental impact :

Leakage of toxic metal such as lead, mercury from land fills.

Leads to serious health issues in case of manual workers.

Gives rise to poisonous gases on burning.

Plastics persist without getting degraded.

Best practices for handling:

The producer should take up the responsibility for collecting the components for recycling and reuse -

* Extended Producer Responsibility

- E-waste has to be covered under organised recycling sector. Informal collection to be curbed.

- Segregation of waste at the source.

- Increasing awareness among the people regarding the harmful effects.

Ways to incentivise consumers:

Incentives in the form of exchange
credits via points or cashback offer.

Sensitizing about the critical
health effects through adverts in social
media and TV.

Encouraging start-ups in the
field of e-waste management.

Way forwards:

E-waste management rules, 2016 is
a progressive step. Transboundary
movement is also regulated under the
Rotterdam convention. These mechanisms
have to be enforced effectively.

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। संभवतः 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 can be defined as the alteration in the climatic conditions of an area using artificial means. This enhances the human community to dictate the climatic conditions of an area.

Emissions - reduction was envisaged in the 90s as a potential way to reduce global warming effects. But with rampant globalisation and industrialisation, sticking to this route alone does not serve the purpose.

Recently studies have indicated the efficacy of aerosols and ammonia in preventing increase in the temperature of a region.

These aerosols reflect back incoming radiation and help prevent global warming.

Such alternative solutions are being developed, while these solutions are not without its own disadvantages.

The same presence of aerosols in the atmosphere is also found to affect the Indian Ocean monsoon as it affects the heating up of land and thus the pressure difference.

The alternative solutions can be useful in the longer run only when

the drawbacks are clearly
addressed. On the other hand,
countries should not overlook the
efficacy of emissions reduction.

Way forward:

Emissions reductions alone are
not sufficient. But technical
advancements for alternative solutions
are also in the primitive stage.

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 is a type of disaster which is entirely different from other forms of disasters such as cyclones, earthquakes and Tsunamis. This is because droughts don't occur overnight and it shows sufficient causes of occurrence unlike other disaster.

There is a huge scope of prevention and mitigation in case of droughts with sufficient management planning. So droughts, when occurred is more due to anthropological reasons than natural.

Consequences of desertification :

Affects agriculture productivity .

Leads to air, water and soil
pollution due to dust .

Leads to water scarcity .

Degradation of land and no
future possibility of agriculture .

Soil erosion .

Desertification affects the cropping
pattern and reduces the productivity
of land . This has many social and
economic consequences, leading to poverty ,
hunger and malnutrition . This is also
a cause of farmer suicides as witnessed
in Tamil Nadu and Maharashtra .

Preventive steps to be taken :

- Plantation of trees around farm lands to prevent erosion .
- Tilling and mulching of land .
- Reduced usage of fertilisers .
- Agro-climatic practices with suitable crops for region .
- Rainwater harvesting systems to be developed .

Way forward :

2nd ARC in its 3rd report on 'Crisis management' has recommended the involvement of local communities and the state government in combating desertification.

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।

The National Disaster management Plan unveiled by the GoI recently is a progressive step. But it does not have a provisions regarding enhancing the handling capacities of the local communities and other stakeholders.

While it lays down the institutional and legal framework for addressing disasters. It is more important to focus on capacity and resilience enhancement of the stakeholders in line with the Senderi framework.

The focus today is on disaster "risk reduction" rather than on management.

The 2nd ARC in its 3rd report makes the following recommendations :

- 1) Building capacity of local community as they are the 1st responders to any disaster .
- 2) The local governments should be empowered financially to handle crisis .
- 3) Coordinated effort of various department at the district level under the leadership of the district magistrate .
- 4) Enhancing capacity of the local police stations .
- 5) Mock drills to be regularly conducted
- 6) Including DM as a part of syllabus in secondary and higher education .
- 7) Improving capacity of vulnerable sections .

So capacity building is crucial in handling disasters, over talking about the management after disaster strikes.

Way forward:

The DM plan can be suitably amended to increase resilience of the community, in actual terms. The recommendations of the 2nd ARC in this regard can be incorporated.

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।

The local community is the first responder to any disaster. Thus it is crucial in enhancing the capacity of local governments and communities in order to achieve effective disaster risk reduction.

For example, the super-cyclone in Odisha in the 1990s led to more than 10,000 deaths. But the realisation of the importance of mitigation plans has led to prevention of any deaths when cyclone Phailin struck Odisha coast recently.

Similar experience is witnessed in case of chennai floods. When the flood struck in 2015, the population was taken unaware. But, a prepared community in 2016 was able to handle cyclone 'Vardha' without much loss of life.

The 2nd ARC in its 3rd report on Crisis management has enumerated the importance of building capacity of local governments:

- The ULBs and PRIs should proactively involve in risk reduction.
- The units of the government should work in coordination.

- The traditional knowledge of the local communities should be used in management planning -
- The local communities should be involved in planning of disaster management activities.

Way forward :

The recommendations of 2nd ARC should be implemented by the central Government and legal provisions should be made to empower local governments.

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।

The National Disaster Response Force plays a crucial role in handling disaster situations. It currently comprises of 12 battalions drawn from various paramilitary forces such as CRPF, CISF, SSB, ITBP, etc.

The respond to disasters by providing support to the local government. They provide physical and mental support to the affected persons and play an important role in the post disaster phase - involving relief, rescue and reconstruction.

Challenges faced by NDRF :

Lack of resources .

Lack of budgetary support from
the central government .

Over dependence on the armed
forces for infrastructure and medical
facilities .

Less in number to meet the
ever increasing demands across the
country .

Although the NDRF has been
exclusively created for handling disasters,
there is still huge dependence on the
armed forces because -

Armed forces are independent and
enjoy unity of command .

They have more resources at
their disposal

They are well spread across
the country.

They have good medical resources
to handle disasters.

Way forward:

2nd ARC has recommended for
enhancing the capacity of NDRF by
passing a statute that ensures its
financial sustainability. The number
of battalions also should be increased.
More medical practitioners to be employed.