

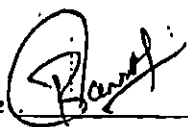
GEOGRAPHY

Time Allowed: 3 hrs.

Max. Marks: 250

Q.	Marks	Instructions to Candidate
1.		<ul style="list-style-type: none">• There are 20 questions.• All questions are compulsory• The number of marks carried by a question is indicated against it.• Answer the questions in NOT MORE THAN 200 words each. Contents of the answer is more important than its length.• Answers must be written within the space provided. <p>Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.</p>
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1. Invigilator Signature



2. Invigilator Signature

Name Hemaha Pratab SinghRoll No. 80Mobile No. [REDACTED]Date 06/11/2016

Signature

Hemaha pratab Singh

REMARKS

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Q1. Sustainable Development Goal 14 recognizes that Oceans, along with coastal and marine resources, play an essential role in human well-being and social and economic development worldwide. Discuss their significance in the light of blue economy.

(12.5 Marks)

Sustainable Developmental Goals provide for agenda setting of development from 2015 to 2030.

As per goal 14. Oceans, along with coastal and marine resources; play an essential role in human well being and social & economic development. Taking this into consideration the significance of blue economy is discussed as follows-

As a resource rich region - Oceans and coastal areas are quite rich in resources. In our own country significant degree of oil discovery has been in coastal zones eg. Bombay High. Also recently Indian government signed a Memorandum of understanding with International Maritime Organisation to extract resources from Indian Ocean region.

Livelihood Security - Ocean especially coastal areas provide huge amount of fisheries resources. Livelihood of many of the coastal inhabitants is dependent upon these fisheries resources only. Also it provides them with income.

Remarks - try to add more dimension to your Ans.

opportunities.

As a trade route:- Almost 90% of the Indian overseas trade is through ocean route. In this way the coastal areas provide a significant economic benefit. Government is working on a Sagarmala project which emphasises on port-led development of the country.

Also the coastal areas are significantly rich in biodiversity. This biodiversity provides for a significant gene pool which helps the country to develop different varieties.

Thus the role of ocean & coastal areas is quite significant in national development. The idea of inclusive development can be realised by taking the help of blue economy.

Remarks

Q2. Recently Nepal successfully drained a part of a glacial lake near Mount Everest averting a risk of disastrous floods. Bring out the causes and consequences of shrinking Himalayan glaciers on human settlements and river drainage system. (12.5 Marks)

Glacial lakes are large amount of water trapped in glacial form. Sometimes immediate melting of these glacial lakes gives rise to a disaster like flood, landslide etc. eg. the Uttarakhand disaster in 2012 was found to be intensified by melting of glacial lakes.

Causes of shrinking of Himalayan Glaciers:- There

are multiple causes of shrinking of Himalayan glaciers, but Global Warming and climate change is chief among them. Even the IPCC report emphasised this point by saying that at present rate of shrinking, glaciers may permanently disappear from Himalayas by 2050. Due to global warming temperature is increasing which is leading towards melting of ice. Also due to many other human activities like cutting of trees or grazing etc., Himalayan glaciers are being adversely affected.

other reasons??

Remarks

Consequences:- There are many socio-economic and geographical consequences of shrinking of Himalayan glaciers.

It may lead to significant reduction in the water supply in northern areas. This will impact the living of people in these regions. Agricultural activities will get adversely affected which will impact economy and society as 51% of the Indian population is still dependent on agriculture only.

It may lead to increase ocean levels which will create a problem of climate refugees as huge population is living in coastal areas in India. eg. many islands in Sunduban areas are shrinking fast.

It may lead to further boosting the climate change (positive feedback).

Thus there are many negative consequences of shrinking of glaciers. So the need is to reverse this trend by tackling the phenomenon of climate change holistically.

is water short
shortages
affecting
impairing
eg. increase
area
land

Remarks

Q3. India has 7500 km long coastline, but the Indian fishery sector is not so well developed. Highlight the major impediments to the growth of this sector? Discuss. (12.5 Marks)

India has a 7500 km long coastline which provides a huge potential for development of fisheries sector. But the sector has not been able to develop to its full potential. The reasons are as follows:-

use of obsolete Technology of traditional practices-

The majority of fishing economy in India is still subsistence based. Small fishermen generally use obsolete technology and they don't have necessary equipments to go to high seas for fishing.

But at the same time it needs to be kept in mind that large trawlers have been introduced by fishermen in certain areas. This has although increased the production of fishing but has created another problem of over-exploitation of this resource.

Boundary Disputes - Lack of demarcation of maritime boundaries creates another problem in fishing. eg. Dispute with Pakistan in

Remarks

- Instead of elaborating few try to write multiple points.

... include with water 11

the Creek Area & with Sri Lanka. This creates a hurdle for exploitation of fishery resources. Also it creates a problem of fishermen getting trapped.

Lack of appropriate planning and government support towards this sector is another problem.

The fisheries sector is largely dominated by informal sector and there are no credits available to fishermen to expand their business.

Above are few of the reasons that must be sorted out as soon as possible to make fishing sector a significant contributor to the economy.

Q4. In the past few years, urban floods are becoming regular and increasingly devastating and are largely due to human factors. Discuss with suitable examples. (12.5 Marks)

Urban floods are fastly emerging as a new kind of disaster in India. In the recent years many floods have derailed the entire functioning of the city & hence significantly impacting the economy, eg. Mumbai floods, Chennai floods & most recently Burgash water logging.

There are many reasons for emergence of this phenomenon which are discussed as follows -

(3)

As per one recent estimate almost 300 wetlands in the cities have been converted residential buildings. ~~Data~~ has created a problem lack of outlet to the rainwater.

No water harvesting culture in Indian cities which results in most of the rainwater being drained as run-off. India can follow the example of China here, which is building huge water reservoirs in ~~its~~ its cities to tackle the problem of additional water supply.

write rational cause too for balanced ans.

Remarks

- No holistic planning of the cities - Urban sprawl
 This results in destruction of drains which
 can take the city water to outside areas.

eg.

- Choked drains - This is in fact the biggest
 problem in the Indian cities. The inappropriate
garbage collection system results in garbage
 going into the drains and choking it. eg.
 In the recent Gurgaon water logging this was
 the problem reason for the problem.

- With the increase in size of city there is
 no proportionate increase in the drains. This
 was primarily observed in case of Chennai
floods.

There are area based & project based
approach to city planning needs to be adopted
 to holistically develop the cities. The Smart
city mission of AMRUT can be of quite help
 in such endeavour.

Remarks

Q5. Migration is a constant phenomenon throughout human history. People have shifted to find better pastures, more game, and other resources; similarly people have left home to escape religious or political persecution or even climate threat. Elaborate on some of the Socio-political push and pull factors, which force migration in 21st century?

(125 Marks)

Migration means moving of people from one place to another for settlement purposes. The phenomenon of migration has been throughout the history. eg. Aryans migrated towards Indian subcontinent to seek better availability of resources, Parsis from west Asia moved to India due to religious persecution, etc.

But the 21st century migration is quite a different phenomenon in certain sense. The push & pull factors of migration are discussed below.

Push factors -

Poverty is still the living on the planet and it is still force large number of people to migrate towards other areas for seeking better livelihood opportunities. eg. Migration of labourers towards Indian cities.

Also many regions are still facing political upheaval & religious persecution.

Remarks - underline

- write multiple points in such open ended que

which is forcing many to migrate. eg. due to political upheaval & civil war almost 1 million people have migrated from middle-east in last two years.

Added to this the issues like climate change are also causing migration of people.

Pull Factors - In the context of globalisation, the inequality is rising very fast. This has created certain islands of prosperity which is pulling people to migrate to these areas. eg. Migration of skilled Indian workforce towards west. Also migration of skilled people towards cities like Delhi, Bangalore etc.

These multiple socio-economic causes are involved in migration phenomenon of 21st century.

Remarks

Q6. 80% of India's geographical area is vulnerable to one or other kind of disasters; thus it needs a comprehensive disaster management plan. How NDMP serve this purpose? Discuss in context of Sendai framework. (12.5 Marks)

India is vulnerable to multiple disasters like cyclone, earthquake, flood & draught (sometimes at the same time), landslide etc. As per one estimate at least 80% of India's geographical area is prone to certain type of disasters. write areas
subject to

Taking these into consideration, National Disaster Management Plan was unveiled recently. The main point of the plan are as follows-

The brought down the disaster risk in the country significantly. This includes reduction in vulnerability and mapping of the disaster prone areas.

Capacity building among the population to deal with the disaster.

States are expected to bring similar state disaster management plans.

Strengthening the institutional mechanisms.

Sendai Framework for Disaster Risk reduction was concluded recently. The

Remarks: lack of knowledge

framework provides for an agenda of action to deal with disasters from 2015-30. (7 point agenda of action).

Although the Indian NDMP borrows

many things from the Sendai framework but it lacks on following points-

Refer-
sent

- unlike Sendai framework it doesn't put any target to be achieved.

- monitoring of different actions have also not been specified.

Hence although NDMP is a good idea and will help in tackling the disasters the need is to fine tune it more to provide for specified targets. This will help in accountability setting and better implementation.

Remarks

Q7. Urbanization in India is suffering from "spatial illegality", Discuss. How urbanization should be planned to establish the right to city for every resident? (12.5 Marks)

Urbanisation in India has been largely unplanned and unorganised. The phenomenon of 'urban sprawl' is quite visible in many of the big Indian cities. eg. Delhi, Mumbai etc.

Urbanisation in India is suffering from 'spatial illegality'. The term stands for illegal development of areas that are in the vicinity of a city. There have been instances of illegal acquisition of lands of farmers to build the city. eg. Land was acquired for public purpose & then it was handed over to constructors to build housing areas.

To establish the right to city for every resident, urbanisation must be planned. True planning means planning the city development for every section of the society. There should be provisions of low cost housing to the poor sections. Parks & open spaces should be developed to provide for recreation.

- lack of understanding of issues

Remarks

activities. The city planning especially needs to take care of needs of elderly and disabled. Then only the city can be said to be truly inclusive.

The recently launched Smart City mission tries to address many of the problems that the Indian cities are facing, eg water supply, transportation, ~~gar~~ solid waste management etc. The mission adopts an area approach to holistically develop the city.

There are provisions for development of parks & pavements.

Thus these kind of missions need to be implemented in Indian cities to make them inclusive.

Q8. How tropical cyclone is different from temperate cyclones? What are the necessary conditions for formation of tropical cyclones? (12.5 Marks)

Difference between tropical cyclones & Temperate cyclones

Tropical cyclone

1. These are thermal in origin. They originate in ocean and SST should be greater than 27°C .
2. They move from east to west (As they are embedded in Trade winds)
3. They have circular isobars
4. These are less frequent & more destructive.
5. Size \Rightarrow 500 km or less than that.
6. They last for maximum one week or so.

Temperate cyclone

1. These are frontal in origin. They originate due to meeting of polar cold ~~and~~ wind and subtropical warm winds.
2. They move from west to east (As they are embedded in westerlies)
3. They have elliptical isobars.
4. More frequent & less destructive.
5. Size - 1000-1500 km.
6. They can last for more than 15 days.

— show diagram

(5)

Remarks

Formation of tropical cyclones - Following are the necessary conditions for formation of tropical cyclones -

- Sea Surface Temperature should be greater than 27°C .
- ITCZ should be located beyond $5-10^{\circ}$ of the equator.
- An anticyclone should be there in the upper atmosphere.
- Good amount of supply of vapour.

As these conditions are generally present on India's east coast so these cyclones are formed on India's east coast.

Remarks

Q9. What are the factors responsible for generation of Oceanic currents? How these current affects the regional climate? (12.5 Marks)

Factors Responsible for Generation of Ocean currents

1. Set of factors related to earth's rotation-

As the earth rotates from west to east, ocean currents move from east to west. eg. North Equatorial current, South equatorial current etc.

2. Coriolis Force - Due to Coriolis force currents

In northern hemisphere move in anticlockwise direction & they move in clockwise direction

in southern hemisphere. eg. Sargasso sea area is created by anticlockwise moving currents.

3. Gravity - As the North equatorial & South

equatorial currents move from east to west there is a piling of water in western regions. This creates counter equatorial currents due to gravity.

4. Temperature & Salinity difference - These both create density difference & water

Remarks — draw map

moves from less dense areas to higher density areas. These are also called thermohaline circulations.

effects on Regional climate:-

- Help in moderating the regional climate:
eg. Gulf stream ensures that harbours in the Canada coast are open even beyond 40°N during the winter. This is not the case with European coast.
- Change in precipitation: current in the west coast of South America (which is a cold current) helps in further enforcing the dry condition in that area.
- where cold & warm currents meet, there is a prevalence of foggy climate. eg. meeting of kurushio & oyashio of the coast of Japan.

Remarks

Q10. Corals are called as rain-forest of oceans. Highlight the significance of corals. Enlist the major threat of coral bleaching. Suggest measures to contain this problem.

(12.5 Marks)

Corals are one of the most productive ecosystems in the ocean. In ocean areas they are considered to be the ocean counterpart of tropical rainforests.

Significance of Corals — carbon sink
 — stop erosion = refer back

— They embody huge fish resources & hence provide huge livelihood opportunities to the population.

— They are diverse ecosystems & hence provide for tourism activity which helps the local population in their livelihood. + address

Coral Bleaching — coral bleaching occurs when

when the symbiotic partner Zooxanthellae

die due to any reason. This is actually

loses the colour of corals. The prime reasons are as follows:

— climate change which is increasing the temperature

of ocean. Since corals can survive in the

temperature range of $21-27^{\circ}\text{C}$ hence bleaching occurs.

Remarks

- El Niño - which significantly increases the ocean temperature and this results in coral bleaching.
- Overfishing - Fishermen have been found to use dynamite to disperse fishing from corals.

There is a need to protect this productive ecosystem. The actions that can be taken are as follows-

- Address the problem of climate change.
- Fishing activity in coral areas needs to be regulated.

As per one estimate almost 50% of the corals in the world are facing existential threat so there is an urgent need to reverse this trend.

Remarks

Q11. A map of India reveals that the North-Eastern region of our country is most prone to floods. What are the reasons for the routine occurrence of floods in these regions? How can the same be controlled? (12.5 Marks)

North Eastern Region of our country is one of the most prone regions to floods. The reasons are as follows-

① Heavy precipitation - Since the Bay of Bengal branch of South West Monsoon reaches first in the north-east regions, it results in heavy precipitation. Diphail Mawsynram is the highest precipitation area in the world which is located in this region only.

② Huge siltation of rivers especially Brahmaputra - Due to huge amount of erosion by rivers, heavy siltation in the rivers occurs in these regions. This results in spreading of river water over a large area.

③ Topography - As the region is dominated by hills, precipitation above the hills comes to the lower areas as runoff and creates the problem of flooding.

Remarks

- solution part need more content

4

To develop the northeastern region, the problem of flooding needs to be sorted out.

- Creating huge reservoirs to collect the surplus water.
- Putting constraints on settlement in flood prone areas.
- Building up of dams.

Remarks

Q12. The food processing industry in India is not developed as per the resource endowments of different regions, many resource rich areas have practically no industry, whereas some states like Haryana and Maharashtra have high concentration of these industries, despite relatively less resources compared to some other regions. Critically analyze.

(12.5 Marks)

Food processing industry in India has huge potentials. In the context of low agricultural income, this industry can help boost the agricultural income and hence helping the farmers.

But the development of Food Processing Industry in India has been quite uneven. Areas like Haryana & Maharashtra have huge concentration of these industries primarily due to closeness of cities like Delhi & Mumbai. Also these areas are where green revolution has resulted in increased agricultural income. Through this increased agricultural income these regions have been able to acquire latest technology like cold storage facilities etc. which are essential requirements for this industry.

But at the same time other regions like Karnataka, Jammu & Kashmir & Himachal Pradesh
write area specific strength

Remarks

— write multiple points

— conclude with recent Govt measures.

Pradesh have not been able to develop these industries. The prime reason is infrastructural hurdles (eg. Roads, cold storage facilities etc). Also governmental support to develop these industries has been quite low. It ^{is} only recently that govt. has realized the potential of these industries and launched National Mission on Food Processing & Mega Food Park schemes to holistically develop the food processing industry.

Remarks

Q13. Discuss the strengths and weaknesses of the drainage system in India? How is the river interlinking going to affect the Drainage System in India? (12.5 Marks)

Drainage system in India can be divided into two major parts - Himalayan drainage & South Indian peninsular drainage.

Strengths:- Most of the north Indian rivers are perennial & hence, they provide for water requirement throughout the year. Also the drainage system in India is spread throughout the country and there is no area where we cannot find a river except Rajasthan.

Weaknesses:- The rivers in India overflow in the monsoon season whereas in the summer season, they hardly have enough water to fulfill the demand. Also the rivers in India create huge flooding and hence causing a lot of damage. The south Indian rivers are mainly ephemeral in nature.

- draw a map
- issues with river linking?

Remarks

River Linking Project:- Government is planning to link the northern rivers with southern rivers by building canals. This is expected to tackle the problem of flooding and also solve the water scarcity problem in southern part. This project will impact the drainage system by increasing its reliability & reach. Also it will have many economic benefits to people living in southern India.

Remarks

Q14. What do you mean by Soil Quality? How does soil get deposited over the time? How Soil Health Card Scheme does aims to rejuvenate the nutrient status soil?

(12.5 Marks)

Soil quality is the measure of presence of appropriate nutrients in the soil that are required for plant growth. There are many micro & macronutrients required for plant growth like - Calcium, potassium, phosphorus etc.

Soil is the upper layer of earth's crust. Due to denudation/erosion of earth's crust, many small particles are formed. These particles are carried away by agents like water, air, glacier etc. Over a period of time this results in deposition of soil over the earth's crust.

Government recently launched soil health card scheme to regularly check the quality of soil and nutrient requirements so that farmers can be provided with appropriate information about the nutrient requirements of the soil.

weather
&
deposition

34

need
more
info
about

Remarks

This will help in appropriate use of nutrients.
As the problem in India is heavy use of
urea as compared to other nutrients. This
is leading towards acidity and alkalisation
of soil. The scheme intends to provide
information about soil quality every three
years.

Remarks

Q15. What do you mean by Desertification? Is India facing the same problem? What efforts have been taken both at the global as well as at national level to counter the problem of Desertification? (12.5 Marks)

Desertification is a process where cultivable land get converted into non-cultivable land. There are many reason ~~for~~ of desertification as follows:

- overcultivation.
- Forward movement of desert area like Sard areas moving forward.
- Deforestation & soil erosion etc.

India is facing huge problem of desertification. The major regions that are facing this problem are Punjab, Haryana, Rajasthan and also some areas of central

India. The major reason for this is overirrigation especially canal irrigation, indiscriminate use of fertilisers and advancing of Rajasthan desert.

A number of steps have been taken both at global & local/national level to tackle

4 1/2

Remarks:

this problem.

- In Rio Summit 1992, UN Convention to Combat Desertification was adopted to prepare strategy for desertification.

- At the national level building of tree barriers to stop the advancing of sand desert.

- Schemes like Soil health card to regulate the nutrient/fertiliser use which is a major reason for desertification.

- Promotion of organic farming. Government launched 'Paramparagat Krishi Vikas Yojana' to promote this.

- Promoting innovative methods of irrigation like Sprinkler.

Remarks

Q16. What is meant by Rain Variability? What are the causes of rain variability? Discuss its impact on agricultural production and household welfare in rural India.

(12.5 Marks)

Rain variability is the variation in amount of precipitation from the average precipitation.

There are many causes of rain variability.

Phenomenon like El-Niño of Indian Ocean Dipole can impact the Indian monsoon adversely and hence affecting rainfall.

Rainfall in India depends upon formation of monsoon depression. The spread of this depression affects the rainfall in India.

Phenomenon like cyclone can increase the rainfall and hence they can affect the rain variability.

The intensity of high pressure near Maldives Island has huge impact on rainfall in India.

Many regional factors also play an important role in rainfall (like cities generally receive more rainfall than rural areas)

Remarks

Impact - Monsoon is still the biggest gamble in Indian economy. Any amount of rain variability affects the agricultural production & hence life of many farmers. If the rainfall is high it results in flooding in many regions which not only affects agriculture but also other daily lives. eg. Recent floods in northern India. Also if the rainfall is less it results in reduced agricultural production which impacts the food security & farmers income. Two successive years of draught in recent years have resulted in many farmers committing suicide & food price soaring to very high level.

Remarks

Q17. "Inclusive growth in India requires collective efforts". Explain the private sector's participation in driving growth particularly in the laggard states. (12.5 Marks)

The concept of Inclusive growth was put forward by earstwhile planning commission in 11th five year plan. It stands for growth of entire population of the country & not of any particular sector, section or region.

In the contemporary times under the Neo-right philosophy, the role of state in providing multiple goods & services is being questioned and the private sector is being called upon to provide goods & services. Thus it is clear that any inclusive development to take place the role of private sector is very important.

In our country, the private investment and foreign investment has been centered only in comparatively well-off states like Delhi, Maharashtra, Karnataka etc. But for the development of laggard

- Ans too general

Remarks

- need multiple points/dimensions

3 1/2

States like BILAPUR states. The role of private sector is very important. It can provide for employment opportunities by setting up of industries. Also it can help the state economy by increasing the consumption level in the state.

But for all this to take place, a suitable strategy needs to be put in place. private sector can be provided with suitable policy like Tax cuts, Infrastructure services, skilled workforce so that it is attracted towards these areas.

Remarks

Q18. Discuss briefly the theory of Isostasy? What is its role in the geo-morphological context?
(12.5 Marks)

Remarks

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Remarks

Q19. Evaluate the theory of Continental Drift as given by Wagner. How does the Plate Tectonic Theory seek to remove the shortcomings of the Continental Drift Theory? (12.5 Marks)

Wagner gave ^{most} the continental drift theory.
 In this theory he argued that continents are moving towards & apart from each other.
 To prove his point he took the example of similarity of coastlines of ^{23° S} South America & Africa, presence of similar type of vegetation and species (like monkey) in far-off areas.

But there were few shortcomings in his theory which were later removed by plate tectonic theory.

Plate tectonic theory argues that instead of continents moving, it is actually the plates that are moving. These plates are divided into three parts -

- Continental plates
- Oceanic plates
- Partially continental & partially oceanic.

further the interaction among the

Remarks

23
22

plate boundaries was classified into three parts-

- Convergent plate boundary interaction - when plates are coming towards each other. ($\rightarrow | \leftarrow$)

- Divergent plate boundary interaction - when plates are moving away from each other. ($\leftarrow | \rightarrow$)

- Transform interaction - when plates are moving past each other ($\uparrow | \downarrow$)

This theory argued for matching the boundaries at the continental slopes.

Thus this theory was able to sort out the present shortcomings in Wegener's theory and it is considered to be the most accepted theory even today.

Q20. Compare and contrast the concept of Agro-Climate and Agro-Ecological Zoning. Which one do you think is better for agricultural planning in our country? (12.5 Marks)

Remarks

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Remarks