

# GEOGRAPHY

Time Allowed: 3 hrs.

Max. Marks: 250

Q.	Marks	Instructions to Candidate
1.		<ul style="list-style-type: none"><li>• There are 20 questions.</li><li>• All questions are compulsory</li><li>• The number of marks carried by a question is indicated against it.</li><li>• Answer the questions in <b>NOT MORE THAN 200</b> words each. Contents of the answer is more important than its length.</li><li>• Answers must be written within the space provided.</li></ul> <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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Name Kunal Aggarwal

Roll No. \_\_\_\_\_

Mobile No. \_\_\_\_\_

Date \_\_\_\_\_

Signature Kunal

1. Invigilator Signature \_\_\_\_\_

2. Invigilator Signature \_\_\_\_\_

**REMARKS**

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Roll No. \_\_\_\_\_

Q1. India's sugar industry is the second largest agro-based industry in India; however, the production of sugar is skewed towards the states like Maharashtra, Tamilnadu, and Karnataka, which are not very suitable for sugarcane cultivation and have been suffering from water shortages. Analyse the reasons behind this trend? What are the problems faced by the sugar industry in India and the possible measures to overcome the crisis?

(12.5 Marks)

Sugarcane agriculture is a water intensive agriculture and states like Maharashtra, Tamilnadu and Karnataka are major growers. These states do not perennial river sources for water and uses excessive ground water resources for sustaining these crops. These states are not suitable for water-intensive crops due to their geographical features. Reasons for this trend are majority historical and political. Sugar industries were opened in these regions and since sugarcane is weight losing crop, it was grown in nearby regions.

Problems faced by industry

- ① Inefficient transport system
- ② Poor road connectivity to the villages
- ③ Credit availability to the industry is a big problem. Machinery is old and needs to be upgraded.

Remarks

④ High temperatures in the region cause fast depletion of available juices.

#### Possible measures

- Govt should invest in infrastructure providing road connectivity and rail connectivity. A fast transport is important for the industry as the crushing period is small.
- Upgradation of machinery is important. This can be encouraged through subsidy schemes for tech upgradations.

Remarks

- Q2. Analyze whether the monsoon rains play a role in reducing air pollution in Indian cities. State the reasons why air pollution has increased in Indian cities post monsoon and winter. (12.5 Marks)

Monsoons are the seasonal reversal of winds which bring rain to the Indian subcontinent during the summer months. It has been seen that air pollution levels decrease during monsoon.

It could be attributed to following:-

- ① ~~Air~~ blowing wind cleans the environment by moving the pollutants.
- ② Rains wash away the pollutants in air in the form of liquids.
- ③ Due to the rain, the dust particles do not remain in air and are either washed away or settle on roads.

Post monsoon, after the withdrawal of winds there is generally low winds.

Due to less movement of air, pollutants remain for longer time in air.

In winter, excessive burning of farms and wood for heat also contributes to pollution.

Remarks

*Remarks*

- Q3. Why are North Eastern states preferred for palm cultivation in India? Discuss the government's measures to support this. (12.5 Marks)

Palm cultivation requires a high rainfall and a tropical like climate which is readily available in North eastern states. These states have high rainfall and a moderate temperature all around the year.

Remarks

Remarks



Q4. India is a paradox as the country with largest malnourished children in the world along with being the third largest obese country in the world. Why? How can this paradox be addressed successfully? (12.5 Marks)

India is a country with largest malnourished children as well as third largest obese country in the world. This situation arises because of the skewed food habits. Malnourishment is because of it is because of following :-

- ① Consumption of less nutritious food
  - ② Increased dependence on fatty foods leading to obesity
  - ③ Decreasing physical activity is leading to obesity among the rich children.
  - ④ Increased consumption of fast food.
- There is high income disparity b/w people in the country leading to extremes in both malnourishment and obesity. There is an urgent need to attack both the problems to ensure a healthy growth for children.

① fortification of food :- Nutrients can be provided through fortification of food like milk powder, Mid day meals.

Remarks

② Education and awareness about wrong food habits.  
Taxes like fat tax in Kerala can discourage  
consumption of unhealthy food by children.

③

India has a huge wastage of food items.  
We must focus on reducing wastage by  
building infrastructure, connecting markets,  
irradiation etc. Only through these, can  
we achieve the nutritional security.

Remarks

- Q5. According to the latest data from Census 2011, India's population growth is slowing down and it might reach replacement levels of fertility by 2020 but there is an unnaturally higher mortality rate, both for infant girls and for girls under the age of five than for boys, a trend that runs contrary to the global trend. Discuss the reasons and the implications of this trend. (12.5 Marks)

India's fertility rates are decreasing and will reach replacement level soon. However, this population has been skewed against girl child.

The mortality rates for infant girls and under-five girls is high. This could be due to following:-

- ① Girl child is not given equal attention and nutrition compared to male child during infancy.
- ② Many girl child are killed intentionally which has been a major cause.
- ③ Even during the first 30 days, girl child at many places are not fed with mother's milk which is very important for survival.
- ④ Neglect in medical attention like medicines and vaccination by the parents.

Remarks

This leads to demographic changes and a skewed sex ratio. Its implications can be felt in economic, socio-cultural and political sphere.

Economic - low productivity due to frequent health issues.

Socio-cultural - Skewed sex ratio, destruction of institution of marriage and dependence on other states. Women are a major pillar for moral standards of society which is destroyed.

- Q6. What are the reasons behind water scarcity in India? Even though India has many dams, rivers to provide irrigation to the fields, farmer suicides is a never ending problem especially in dry land farming areas. Why? What are the compelling steps needed to be taken? (12.5 Marks)

India is a country surrounded with water bodies on three sides with a large coastline but still faces a huge water scarcity. Water scarcity in India is regional. There is high regional disparity with states like Punjab which has abundant water and states like M.P. facing scarcity or Rajasthan.

### Reasons

- ① Huge geographical differentiations - Deserts in West and Plateau in the center gets low rain.
- ② Some states lie in rain shadow zone and does not receive rainfall.
- ③ Misuse of water and increased pollution is a major cause of increasing scarcity.

Despite the available dams, rivers to provide irrigation, farmer suicide are common because:-

Remarks

① Already created potential by dams is not being used to provide irrigation.

② There presence is high in high rainfall areas and less in poor rainfall areas like Vidarbha, Baghelkhand.

③ Changing environment is adding to the problems of farmers through erratic and unpredictable rains.

Following can be done in dry land farming areas

① Drought resistant crops should be introduced so that losses could be reduced.

② Markets should be developed like e-Nam and Infrastructure should be provided.

③ Less water consuming crops like pulses should be promoted.

④ Research in biotechnology to develop crops suiting to the dry land areas should be developed.

Farmers are the cornerstone of India's food and nutrition security. Maximum steps should be taken to protect them.

- Q7. India still relies on coal for 58% of its primary energy needs. The energy consumption and demand in India is not being met by the coal production. Critically analyse on the causes and consequences of this trend. (12.5 Marks)

India's energy needs are increasing with increasing growth of the nation. However, we still depend on coal for majority of primary energy needs, it is used in thermal power plants, house hold activities and in industries like iron & steel. However, this coal demand is not being met by domestically produced coal and we resort to imports.

### Cause of coal dependence

- ① Upgradation of thermal power plants to use renewable source take time.
- ② Availability of electricity to many industries is less due to which they depend on coal.
- ③ In Unconnected areas, household usage of coal is high. Recent PAHAL scheme is a great way to reduce the dependence.
- ④ Some industries depend on high quality coal which needs to be imported as India does not produce that such coking coal for iron & steel.

Remarks

### Consequences

- ① Environment damage - Coal usage releases huge pollutant gases in air.
- ② Impacts the health of women in households using coal for cooking.
- ③ Due to dependence on imports, energy security is threatened.
- ④ Unsustainability - As coal is a non-renewable source of energy, it is depleting.

India needs to upgrade its energy consumption basket. Recent steps of solar usage and procurement has helped bring down costs and increase adoption. We must move towards renewable sources as committed in Paris Climate Deal.

Remarks



- Q8. The contribution of Gujarat to India's pharmaceutical and health sectors can be gauged by the fact that this Western State, having only 4 per cent of the country's population, accounts for more than 40 per cent of medicines manufactured in India. Why is the pharmaceutical industry concentrated in the western region? (12.5 Marks)

Gujarat has attracted huge investment from all sectors of the industry be it automobile or pharmaceutical. It produces about 40% of medicines manufacture in India.

Following are the factors leading to growth of Industry

- ① Huge coastline available for import and export of the products and raw material.
- ② Gujarat has developed its industrial infrastructure by providing electricity, fast clearances and increased connectivity.
- ③ Labour laws and land acquisition laws have been conducive for industries to set up in the region.

Western region has gained huge importance in pharmaceutical due to easy connectivity to the western nations. The medical export is facilitated through ports in the Western region.

Remarks

*Remarks*

- Q9. Lack of professionalism and autonomy of the major port boards led to the dismal performance to the ports in India. Critically comment in the light of Major ports authorities act, 2016. (12.5 Marks)

Port infrastructure in India has not, developed to the scale to provide efficient transport options to industries. This has killed the competitiveness of Indian exports in international market.

There are 13 major ports in India governed by the Union government and many minor ports governed by state govt.

New Major Ports authorities Act, 2016 have been passed to provide

- Autonomy to the port authorities in management of port
- Ease in upgrading the technology at ports.
- It allows ports to raise funds from international sources through S.P.V.

However, the act is only a peaceful upgradation to the ports.

Remarks

- It does not provide for additional investment by governments.
- The port infrastructure can not be upgraded by just these 13 ports and more ports need to be improved.
- Executive still controls the major ports and they are not being like private bodies.

Port infrastructure should be developed with international standard as it has large positive side effects for the country and people.

Q10. Examine the availability and extent of ground water resources in India. What are the reasons for the declining ground water and suggest measures for its effective management. (125 Marks)

Ground water resource in India is a major resource for survival of people and agriculture. However, there is huge disparity in availability of groundwater.

- 1) Northern plains have huge groundwater potential that even agriculture is highly dependent on it.
- 2) States like Rajasthan, Central Plateau and Deccan region has low groundwater availability due to porous soils and plateau uplift.
- 3) Coastal regions also have a good groundwater availability.

However, groundwater has been declining even in the regions with high availability.

- ① Excessive extraction of groundwater in northern plains for agriculture.
- ② Recharge of water table has reduced due to concrete roads and flow of rainwater to sewers.

Remarks

③ Salination of ground water in coastal areas is making it unfit for consumption.

Following are some steps to check the decline of ground water.

① Rain water harvesting :- It can help in recharge of ground water table.

② The design of policies :- Free electricity supply has contributed to excessive extraction at many places. Policies to check spread of tube wells should be put in place.

Groundwater is an important resource. It should be protected by the society. India is home to a huge population with less water resources proportionally. So, it must ensure a sustainable use of the resource.

Remarks

Q11. While India has retained a near monopoly regarding naval presence in Indian Ocean, it has recently been challenged aggressively by China. Examine the geopolitical significance of the Indian Ocean region in context of the above statement.

(12.5 Marks)

Indian Ocean has been a ground for India. She has asserted her monopoly through increasing naval presence and partnership with island nations like Reunion Island & Seychelles.

It has been geopolitically important because of following reasons

- ① India's long coastline will be under threat if the ~~ocean~~ is not protected.
- ② Island nations in the Indian Ocean are great partners to provide naval bases for the countries.
- ③ All ~~nation~~ major powers including Russia, US, Japan and China have tried to increase their presence due to connectivity with a large geographical area.
- ④ The ocean has huge mineral resources as well. Recently, China has been aggressively expanding its presence in Indian Ocean. It has signed an agreement with Malaysia recently and deployed a submarine at their port.

Remarks

last year, China had increased its cooperation with Sri Lanka and Pakistan. It's maritime Silk Road, a complement to the old silk route ensures its presence in Indian Ocean.

Remarks



Q12. A mass bleaching event on the Great Barrier Reef this year killed more corals than ever before sounding the alarm over the delicate ecosystems. What is coral bleaching? Discuss the conditions favourable for coral formation. What are the recent environmental conditions that are leading to mass bleaching events? (12.5 Marks)

Coral reefs like Great Barrier Reef are killed because of bleaching. Coral bleaching refers to the loss of algae from the polyps. Corals lose their colour and are prone to dying because of bleaching.

Coral bleaching occurs due to following

- ① Increased temperature of the sea water
- ② Excessive pollution in the water
- ③ Growth of planktons due to which light does not reach them.

Environment around us is changing. Global warming has come out to be a major problem. following are

the recent environmental conditions:-

- ① Increased global warming has contributed to ocean warming as well due to which coral bleaching occurs.
- ② Excessive disposal of wastes in world oceans which decrease the available oxygen for the algae to grow.
- ③ There have been threat to ~~corals~~ corals due to the ballast water carried in ships. Increased trade and movement of people impact their growth.

Remarks

Coral act as a major defence line for mainland. They protect from tsunamis and strong waves. Hence, these must be protected. Bleaching makes them vulnerable to death but they can be protected if colonised again.

Steps must be taken to ensure recolonisation of bleached corals and protect the healthy reefs ecology.

Remarks

Q13. The Recent UNICEF report 'Clean the Air for Children' points out that around 300 million children live in areas where the air is toxic - exceeding international limits by at least six times. Discuss how children are uniquely vulnerable to air pollution and what concrete steps can be taken to ensure children breathe clean and safe air.

(125 Marks)

Clean Air is important for livelihood in general for everyone. ~~There~~ increased Air Pollution across the world has led to an increased attention and policy focus. Children are more vulnerable compared to an adult because -

- They are more involved in outdoor physical activities
- Their body breathes twice as much as an adult leading to inhalation of more pollutants as well.

300 million children living in areas with toxic air needs to be protected. Recently, Delhi had come under severe criticism for its dangerous polluted air.

Governments have taken action to resolve such problems. Stringent environmental norms for industries, control on vehicles and fuel consumption have been tried. However, much more needs to be done.

To ensure, a cleaner air for children, following can be done:-

Remarks

- ① Filter masks for the children as a short term measure as cleaning the pollutants would take time.
- ② Stringent curbs on pollutants through construction in schools and near by areas.

In long term, steps need to be taken to clean the air for all.

- Better transport system in cities
- Vacuum cleaning of roads to control dust
- Strict implementation of laws to curb pollution.
- Schools should be established out of city to protect children specifically.

Remarks

Q14. While Arctic scientists warn that the increasing rapid melting of Arctic ice could lead to disastrous consequences, most nations will be touched by developments in the Arctic. Discuss the impact of Arctic ice melt. (125 Marks)

Global warming has led to increased melting of Arctic ice. Scientists have warned against disastrous consequences for most nations.

Following is the impact of Arctic ice melt.

- ① Rise in sea level : Rise in sea level is impacting island nations the most. Coastal areas will be submerged and people will be facing the problems.
- ② Change in species diversity : This is impacting the survival of many marine species in the Arctic as the waters are getting warmer.
- ③ Economic losses to coastal people : It will impact the fisheries and people dependent on the sector.
- ④ Further increase on global warming due to increasing albedo of the earth (due to less ice cover)
- ⑤ Impact on agriculture in temperate regions : Increasing warming and less availability of water from arctic source will impact the productivity of agriculture.

Remarks

Remarks

Q15. Habitat-III conference of the United Nations came with a new urban agenda that sets the global vision of urbanisation for the next 20 years. Discuss this new urban agenda and how far the smart cities mission is able to achieve the objectives.

(12.5 Marks)

Urbanisation across the world has led to problems with growth patterns. These problems include pollution, congestion and pressure on urban infrastructure. The increasing urban poverty is a sign of a skewed development strategy.

Habitat-III conference of UN discussed the problems of urbanisations and sets an agenda for urbanisation:-

- Increasing the urbanisation so that the growth matches with urbanisation
- Improved transport systems in the urban areas for mass commutes
- Expanding the urbanisation to hitherto untouched areas
- Ensuring a good public infrastructure like education & healthcare.

Remarks

Smart cities mission aims at improving the urbanisation strategy of India.

It aims at use of technology and ICT to provide better governance and service to its people.

- It focuses on developing mass transit systems like metros, hyperloops etc.

- Public infrastructure will be developed to accommodate all sections of society.

However, it aims to develop 100 cities which is less for the scope of Indian population.

There are huge challenges in meeting the financial needs for ensuring development of smart cities.



Q16. The Kigali Amendment to the Montreal Protocol was signed recently by the world countries. What are the provisions and significance of this amendment?

(12.5 Marks)

Montreal protocol signed by countries is to stop the usage of Chloro-Fluoro Carbons (CFCs) across the countries. This was ~~majorly~~ done to protect the Ozone layer in Stratosphere. CFCs were replaced by Hydro-Fluoro Carbons (HFCs) which are not detrimental to Ozone layer but are strong greenhouse gas.

Recent Kigali Amendment to Montreal Protocol was signed to curb the use of HFCs across the countries.

According to the agreement, countries will phase out HFCs from the industries majorly refrigerators. It also provisions for technology support from developed countries.

Significance.

① Environmental significance - Green house gases are heating up the environment. Phase out of HFCs can protect environment.

② Economic - It will ensure technology transfer at affordable cost from developed nations.

Remarks

- ③ Global political significance :- the agreement is a step further in global collaboration to protect environment; -the North-South divide is also being bridged by such initiatives.

Remarks

Q17. There is a need for holistic transport planning to improve the city's mobility, liveability and sustainability. In this light, suggest some of the climate friendly and sustainable public transport systems for the urban cities. (125 Marks)

Urban areas/cities in the country are expanding fast. ~~their growth is not~~ the transport infrastructure is not able to cope up with the pace of growth of cities.

Holistic transport planning is a must to improve city's liveability and sustainability.

Current condition of cities

- ① Excessive congestion on roads
- ② Huge air and noise pollution levels
- ③ Poor public transport systems.
- ④

For the continued growth of the cities, we need to ensure a better transport system.

Some of the climate friendly & sustainable public transport systems are:-

- ① Metros :- Metros in Delhi have to be highly beneficial in providing daily commute to its residents.
- ② Dedicated Bus Corridors :- CNG buses are non-polluting transport system. To increase usage, dedicated corridors can help.

Remarks

③ Pod taxis : Pod-taxis are fast becoming a trend. Recently, Minister of Road transport has also asked for looking into these options.

④ ~~Metros~~

Hyperloops : Vacuum tubes can help decongest cities and move people away from the core of the cities.

City needs to be developed with space for recreation, schools, living-space etc. Efficient transport needs to be provided as cities grow.

Remarks

Q18. What do you understand by carrying capacity of ecology? Answer in context of India, where many states have reached the limits of their capacity, due to mass tourism.

(12.5 Marks)

Ecological carrying capacity refers to the population pressure that can be sustained for a long time by the natural resources available.

The world has crossed the limits of carrying capacity of the environment in many places.

In India, states like Jammu and Kashmir and Kerala have huge mass tourism industries. These states attract people due to their geographical location providing

- pleasant weather
- Natural beauty like seas, beaches, valleys
- Opportunities for sports

However, the resources in these states are limited and has a capacity beyond which the environment's sustainability is threatened.

Remarks

It's impact can be seen in following areas :-

- ① Changing weather in these areas :- Average weather of Himalayan region, Kerala, Goa have deteriorated
- ② Increased frequency of landslides due to excessive immigration and meddling with the mountains.
- ③ Loss of forest cover :- forest cover of areas in Kerala have reduced to give space to resorts.

While tourism is an industry providing livelihood to locals, it must balance with environment. Eco-tourism is the right way to go.

Remarks

Q19. Discuss the impact of globalization on Indian plantation industry. Comment on the problems faced by women plantation workers in India. (12.5 Marks)

Plantation agriculture was introduced during the British rule in India. It is practised majorly in hills in Kerala, Tamil Nadu and North eastern regions. India is major producer of tea, coffee etc.

### Impact of Globalization

- ① Commercialisation of plantation has helped farmers discover better prices for the quality coffee and tea.
- ② However, the coffee from African countries have provided good competition.
- ③ Feminization of labour to increase to competitiveness of Indian products.

### Problems faced by Women plantation workers

- ① They are made to work for less wages than the male counterparts.
- ② Their working hours and work conditions are often poor and unsatisfactory.

Remarks

- ③ There is no job security as it is largely an unorganised labour market.
- ④ Women ~~to~~ are not provided with the required ~~to~~ maternity holidays impacting their health.
- ⑤ Often made to live on the farms, it impacts their family life as well.

Globalisation has increasingly impacted the life of women negatively. ~~Contra~~ It needs to be tackled with ~~to~~ conscious positive actions.



Q20. 'The harsh environment support less population'. Justify this statement with suitable arguments from the tundra biome. (12.5 Marks)

-Harsh environment support less population of species and has less species diversity as well.

There is a high species density in the tropical regions where there is less variation in weather,

Tundra biome which sees a ~~high~~ very low freezing temperature across the year has very low population of all species.

- Only alpine growth can be found in such region.

- There is hardly any diversity found in animal species.

- Less avenues for livelihood make them less attractive to humans as well.

Similarly, regions with very high temperatures like deserts in western India or Ladakh region in India attract less population.

Remarks

*Remarks*