GSSCORE

An Institute for Civil Services

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TEST COPY

VYOM BINDAL

RANK - 141

GEOGRAPHY, DISASTER MANAGEMENT & AGRICULTURE TEST - 5

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TEST - 5

GEOGRAPHY, DISASTER MANAGEMENT & AGRICULTURE

Time Allowed: 3 hrs. *Max. Marks: 250*

Q.	Marks
1.	4
2.	3.5
3.	4
4.	4
5.	4
6.	3.5
7.	3.5
8.	3.5
9.	2
10.	1
11.	5.5
12.	6.5
13.	6
14.	6.5
15.	6
16.	6
17.	6.5
18.	3.5
19.	5.5
20.	5

90

Instructions to Candidate

- There are **20 questions.**
- All questions are compulsory.
- The number of marks carried by a question is indicated against it.
- Answers to questions no. 1 to 10 should be in 150 words, whereas answers to questions no. 11 to 20 should be in 250 words.
- Keep the word limit indicated in the questions in mind.
- Answers must be written within the space provided.
- Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

Invigilator Signature Rohit Lodha

Invigilator Signature

Name VIOM BINDAL

Roll No.

Mobile No.

Date

Signature

REMARKS

Section - A

Q1. There is an urgent need to rethink disaster management in India. The responses to disasters must be proactive, not just reactive. Comment. (10 Marks)

India is one of the world's top ten disaster prone countries with 58% area prone to earthquakes, 68% to droughts, 12% to floods apart from slew of human made disasters like industrial accidents, stampede etc.

Present approach to disaster – Reactive

→ It focus more on management of disaster rather than mitigation e.g. rehabilitation instead of flood plain zoning.

→ Law enforcement of safety rules and regulations e.g. Building collapse in Laxmi Nagar Delhi in 2010 as well as 2017

→ Agencies do not focus on mitigation research eg. non formation of disaster mitigation fund.

→ Lack of co-ordination among the various state and central agencies leads to delayed response.

Firstly Discuss Sendai Framework on disaster

Remarks discuss the urgency, keeping in view India's varied topography; high disaster proneness, weak infrastructure and current climate change risks.

Also mention: reactive approach leads to more loss of people & property.

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Risk reduction, as well as National Disaster Management Plan emphasise on Pro-active approach, which focus on disaster prevention, preparedness and mitigation.

Proactive approach

1) Vulnerability analysis: Proper hazard mapping and vulnerability analysis to the lowest level possible.
2) Early warning system: It includes information centres for pre-disaster warning eg. ITEWC for Tsunami warning stationed at INCOIS, Hyderabad.
3) Mitigative measures: they help reduce occurence and damage eg. Afforestation (for floods), Retention walls (landslide).
4) Community Capacity building: Community is first responder in 80% of disasters it needs to be prepared by mock drills, sensitisation.
5) Proper enforcement: of building codes, safety audit, construction norms.

The idiom that "prevention is better than cure" applies aptly to disaster management.

Remarks 4 well-conducted

Q2. It is not deficit monsoon, rather the lack of policies and mechanisms to drought-proof susceptible areas that turn the situation into a crisis. In the light of the above statement, discuss the causes of drought in drought-prone Bundelkhand region and suggest the way forward. (10 Marks)

Around 68% of India's area is prone to droughts which wreaks havoc by spreading famines, agriculture crisis, fueling migration, disturbing livelihoods. Droughts are product of both natural and anthropogenic factors.

Also bring the context of Bundelkhand

Natural factors

1) Erratic Monsoon: In era of climate change, rainfall variability had increased.
4) Concentrated rainfall: 85% of India's rains are concentrated in Monsoon season,
3) El-Nino effect: global climate events like El-Nino weakens Indian Monsoons.

these are general points

Anthropogenic Reasons for drought

One of the biggest reason is lack of policies and mechanisms for drought proofing which is guaged from following facts

Explain these points specific to Bundelkhand region

Remarks

Write in the context of Bundelkhand, policy failures like low MSP for pulses, coarse cereals, less procurement & irrigation facility

Pre-drought phase
- Absence of vulnerability mapping
- Promotion to water intensive crops like rice even in water scarce region
- Absence of water conservation, rain water harvesting (only 8%)
- Adoption of water wasting irrigation - canal and flood irrigation

During Disaster Phase
- Lack of co-ordination in relief work
- Leakages in delivery of food grains
- Exclusion of remote area, marginalised etc

Post-drought Phase
- Delay in relief and rehabilitation
- Inadequate compensation
- Inability to cope with migration

Way Forward

- Promotion of efficient irrigation like micro-irrigation, zero-tillage
- Promotion to rain water harvesting, water-shed development.
- Cropping pattern be aligned to climatic conditions like pulses, coarse cereals.

While natural factors are beyond control, policy flaws needs to be removed to better tackle droughts

Remarks Though points are good, the + context of Bundelkhand missing. A rather generic answer. 3.5

Q3. "India's 60% of farmers depend upon rain-fed agriculture which is largely impacted by global phenomenon such as El-Nino effect." Critically evaluate overdependence of Indian farmers on monsoon. Examine the policy bias against rain-fed agriculture with reference to rain-fed agriculture atlas released by Revitalizing Rain-fed Agriculture (RRA) Network. (10 Marks)

Around 60% of India's landmass is rainfed which exposes farmers to vagaries of nature like El-Nino, climate change, drought among others.

Also discuss Spatial & temporal variation in monsoon rainfall, poor irrigation infra.

Consequences of over-dependence on Monsoon:

Economic consequences:

→ Low farm incomes: due to uncertainity farm incomes remain low.

→ Threat of food security: 50% of agriculture output comes from rainfed areas, hence over-dependence on monsoon hampers food security.

→ Inflation: In case of crop failure due to monsoon prices of agriculture commodities go up.

→ Trapped in low-value products: Due to inadequate irrigation farmers cannot take up high value crops like horticulture, meat among others

You need to critically evaluate over dependence of Indian farmer on monsoon

Remarks

not relevant as per demand of question

Social Consequences

→ It raises the divide between small and rich farmers.

→ Regional disparities: Mostly Eastern rainfed states lack economic development.

→ Farmer protests: due to crop failure accentuate loss of social capital.

Policy Bias against rainfed agriculture

→ Procurement bias: PDS procurement is confined to wheat and rice, rather than rainfed crops like pulses, coarse cereals.

→ Irrational subsidies: subsidies on water and electricity favour the irrigated areas more than rainfed.

→ Buffer stock crops: Buffer stock is mainly maintained of water-intensive crops like rice, wheat

→ Inadequate investment: Much of agriculture investment goes to rich irrigated states like Punjab, Haryana.

Govt. steps to change: Bringing Green revolution in East India, 20 million tonne pulses buffer stock, micro-irrigation etc.

Also mention (4) → Less irrigation facilities, farm mechanization, agri-extension and low MSP for pulses, coarse cereals etc.

Remarks

Q4. "Most of the earthquake zones be it Mid-Continental Belt or Mid-Atlantic Belt are plate boundaries." Elucidate the role of plate-tectonics in identifying Earthquake prone zones. (10 Marks)

Earthquakes refers to the sudden shaking of earth due to release of accumulated energy

Role of Plate tectonics: Most of the earthquakes happen along the boundaries of plates (large parts of earth's crust) due to three type of interactions -

Discuss plate tectonics briefly

1) Convergent: when one plate collides with another, it leads to subduction, due to this stress is generated eg- Nazca subducts beneath South American plate., Indian plate under Eurasian Plate.

discuss Mid-continental Belt here

4) Divergent interactions: when tectonic plates move away from each other it causes stress in nearby crust eg. Mid-atlantic belt

5) Transform interactions: when tectonic plates slip past one another eg. San Andreas fault, California.

Remarks: Try to show plate movements through diagrams.

10

Illustrate also

Mid-Atlantic Belt

mid-continental Belt

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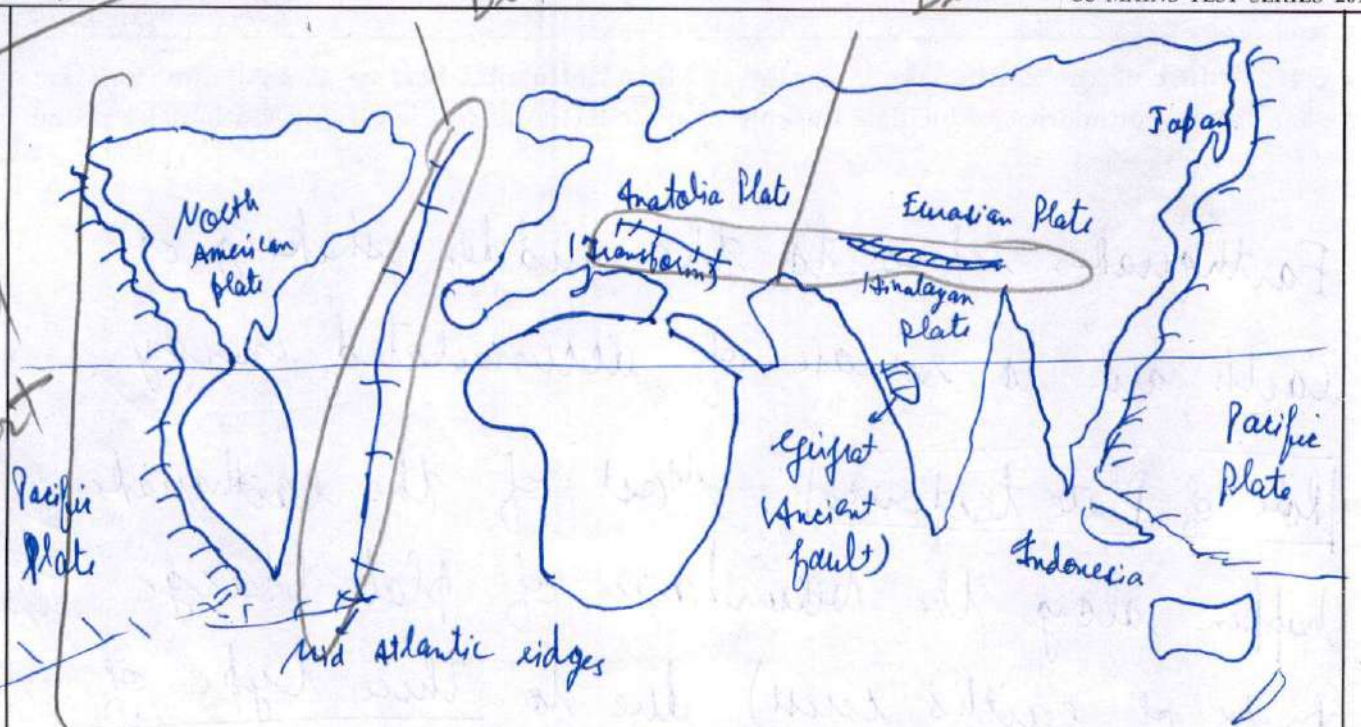


good effort

Plate boundary (Major earthquake prone regions)

- Most of the earthquakes happens along the plate boundaries.
- Hence, one of the important mitigating measure is identification of plate boundaries
- Taking preventing measures like avoiding heavy construction on earthquake prone zones.
- Fostering global co-operation in earthquake warning system as plate tectonics are inter-related.

Nice measures suggested.

4.

Remarks

Q5. Discuss the role of albedo of ice caps in maintaining heat budget of earth. Analyze the impact of deposition of black carbon on ice caps on their albedo. (10 Marks)

Albedo refers to the reflection capacity of a particular substance ; it varies from substance to substance, fresh snow has one of the highest albedo → 80%.

Bring the content of albedo of ice caps

Heat budget : despite continous falling of sun rays earth do not gets progressively hotter due to balancing of incoming radiation with outgoing radiation

For instance → global wind circulation, ocean currents help in melting heat surplus and heat deficit regions., reflection by certain surfaces also help in heat balance.

well-discussed

Albedo of ice-caps : Ice caps have one of the highest albedo of all substances, They help reflect back the incoming solar radiation and prevents earth from getting hotter.

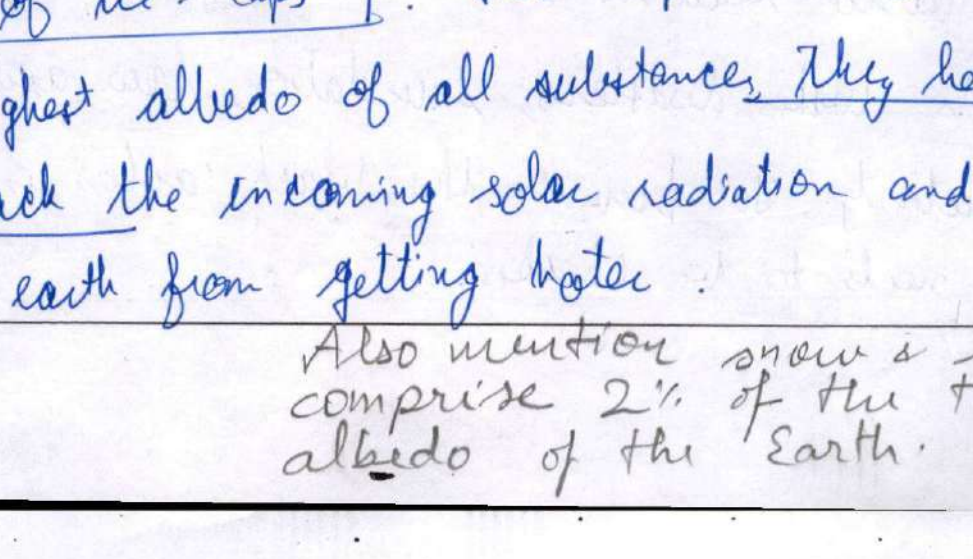
Remarks

Also mention snow & ice caps comprise 2% of the total albedo of the Earth.

Deposition of black carbon : Due to anthropogenic activities like air pollution, fossil fuel burning, lot of black carbon is emitted, which sticks on ice-caps.

This reduces their reflection potential and sets up a negative chain reaction of increasing melting, rising temperature.

well-showed the multiplier effect through diagram



→ Hence due to black carbon emission, there is increase in global warming, which will disturb heat balance lead to climate change bringing in its wakes disasters, inundation, low agriculture productivity. To prevent this black carbon emission needs to be checked.

Suggest some measures also

Remarks

nice conclusion

Q6. Identify the major parameters of public health, where India has made a marked progress. Also, discuss major public health challenges for the next decade? (10 Marks)

First write introduction telling the importance of public health infrastructure

India's health parameters had made continous progress over the years, which can be seen from following:

1) Total Fertility Rate (TFR): It had come down to 2.3 and India is on its way to acheive replacement TFR of 2.1.

2) Elimination of certain diseases: India has successfully eliminated Polio, neo-natal tetanus from our country., yaws, trachoma, leprosy

3) Increased life expectancy: Life expectancy in India has increased manifold since independence. data crossed 67 yrs.

Major Public Health Challenges

1) Non-Communicable Diseases: There share had increased to 60% in overall disease incidences.

Remarks

Also mention, reduction in IMR, MMR, though still high.

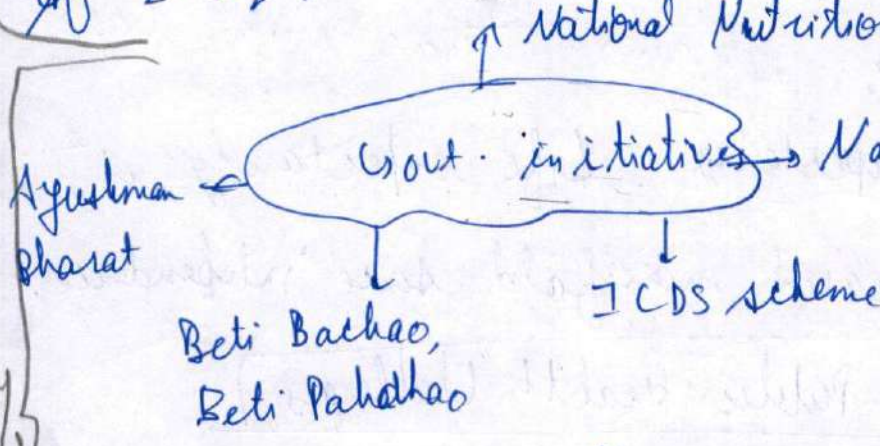
Also mention → Very less no. of medical practitioners in rural areas, high out-of-pocket medical expenditure, Vector-borne diseases, epidimics etc.

2) Malnutrition: As per NFHS-IV, 38.4% of India's under five Children remain stunted, it is a big challenge.

3) Maternal Mortality Ratio: It is still above 100, putting millions of lives at risk.

4) Skewed Child Sex Ratio at Birth: Child Sex Ratio declined from 927 (2001) to 919 (2011), it is a cause of great concern

5) Low investment: Public investment in healthcare remains below 2% of GDP, compared to target of 2.5%.



Nicely covered

There is need for multi-stakeholder approach to tackle our health challenges.

Remarks

3.5

Q7. If we have to double the income of our farmers, we need to focus equally on animal rearing apart from traditional crop farming. Examine the steps taken by government in this regard in the last five years. (10 Marks)

Govt. has set up ambitious target of doubling the farmer's income by 2022, one of the central pillar of this strategy is focus on animal rearing

Animal rearing and farm income

1) High value products: Animal products like meat, egg, fisheries, have higher market price.
2) less vulnerable to climate risks: In context of rainfed agriculture, erratic monsoon animal husbandry acts as well-discussed risk insurance.
3) Inclusivity: Animal rearing can be practised even by small, marigan farmers, landless labourers.

Government initiatives:

1) Rashtriya Gokul Mission: to promote development of indegeneous breed, gene bank of cattles.
2) Neel Kranti Mission: It aims to triple the fisheries production by 2020.

Read question Keywo carefull & examin

Remarks

3) New funds: Government set up Animal Husbandry Infrastructure development fund, Fisheries and aquaculture Infrastructure development fund.
4) Technology dissemination: opening Kisan Helpline, Extension services by Dairy Development Board, Summer training for farmers.
5) Logistics: building cold chain storage, Mega food park scheme to ensure farm to market connect, value addition, reduction of wastage.

Challenges faced by animal rearing sector:
- Inadequate corporate investment (less than 2%)
- lack of modern technology adoption like reefer vans, genetics
- lack of awareness among farmers about benefits of animal rearing
- Inadequate veterinary infrastructure
- Indian livestock sector lacks integration with global supply chains.

3.5

Above challenges needs to be tackeled as animal rearing has full potential of making agriculture viable, profitable and sustainable.

Remarks → Good points but recompose them as per the need of the question i.e. examining whether the steps taken by the Govt. have been successful or not

Q8. "On the one hand volcanoes cause harm to life and property, displacement of people and air and water pollution, but at the same time it provides benefits to people in different ways." Elucidate. (10 Marks)

Volcanic eruptions refers to large scale flow of lava, ash, volcanic dust, pyroclastic material from inside of volcano, it is regarded as major natural disaster worldwide. A good start

Harmful effects of volcanoes

1) It cause huge loss of life and property as everything gets engulfed in hot lava.
2) It impacts ~~air-crafts~~ movements due to poor visibility.
3) It can permanently damage the landscape and land use pattern
4) Release of harmful gases like sulphur dioxide, nitrogen dioxide leads to air pollution.
5) Mixing of volcanic ash with water causes water pollution.

well discussed but you need to explain with example

Remarks

However, despite, volcanoes do have some positive impacts such as :

1) volcanoes deposit the rich, fertile soil in areas nearby to it e.g. Mt. Etna in Italy.
4) Volcanic eruption releases gases, which are reason behind presence of atmosphere on the earth.
3) Volcanoes help in formation of new landforms like Islands, lakes among others.

good points but explain with examples

Hence Vulcanic eruptions can be regarded as necessary evil for the humanity at large.

Also mention
- Atmospheric cooling effect of volcanic eruption i/d 'global dimming'
- Hot springs and sources of geothermal energy

3.5

Remarks

Q9. After more than half century, India is yet to achieve goals set by its population policy. Critically analyze. (10 Marks)

First discuss population scenario & population policy of India its goals

India is falling short of many of our population goals such:

1) Child Sex ratio in India has declined to 919 as per Census 2011

2) 38.4% of children under five years of age are stunted.

3) Nearly 52% of adolescent women suffer from anaemia and iron deficiency.

4) Maternal Mortality ratio remains higher than 100.

5) Out of pocket Health expenditure contributes to more than 60% of total medical cost.

Good points

Remarks Discuss the loopholes of our Population policy of 1976 & 2000

6) Inadequate geriatric care facilities for India's elderly population.

7) Family planning measures remain disproportionately focused on women..

There is need to review the population policy to meet needs of new age India.

Discuss

- Why population stabilization target had to be pushed to 2070 from previous 2045.
- Analyse, why there is high TFR in BIMARU states.
- Factors which facilitated states of Kerala, Tamil Nadu to achieve the TFR target well in advance.

2

Remarks

Q10. Meghalaya Mining Disaster is a shocking reminder that in a fast-growing economy such as India, life of people matters the least. Critically Examine. (10 Marks)

Meghalaya Mining disaster was outcome of unregulated rat hole mining, whereby wall of the mine collapsed leading to several deaths. It was accompanied by suffocation due to coal burning.

Such human made disasters disproportionately impact the marginalised sections, hence there is need for strict enforcement of safety norms.

Explain why it is a shocking reminder in a fast-growing economy

Incomplete

(1)

Complete the answer

— Discuss previous disasters in which greed & profits were emphasised to such an extent that led to high death toll.

Remarks — Focus on such causes, nexus and aberrations which lead to disasters and endanger the life of the people

6) Inadequate geriatric care facilities for India's ageing population.

Remarks

Section - B

Q11. "Deforestation of tropical rainforests for different reasons has caused serious concern for the global community as they are called 'Lungs of the World'." Discuss in context with deforestation of Amazon rainforest and rainforests of South-East Asia.

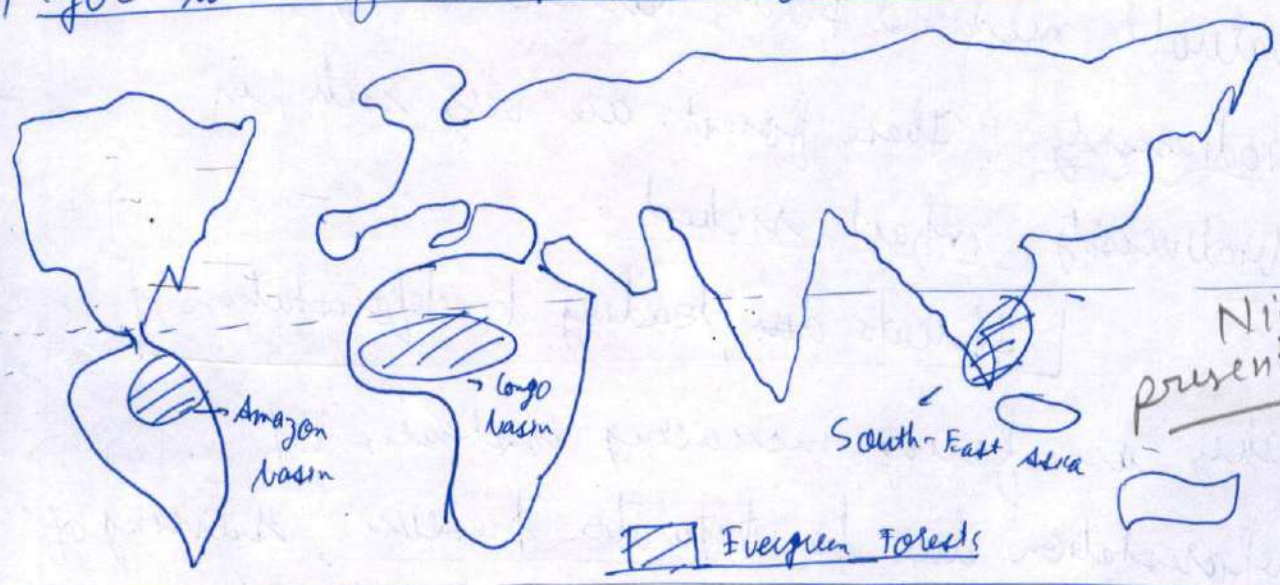
(15 Marks)

Also bring the context of rainforests in the intro.

Deforestation refers to the removal of primary vegetation from an area without replacement.

Tropical rainforests: These are the forests lying better write around the in 0-5° North and South of Equator and are characterised by high biodiversity, high density, distinct canopy formation.

Major areas of tropical rainforests are:



Nice presentation

Tropical evergreen varieties include- rosewood, ebony, Mahogany, aini among others.

Remarks

Importance of tropical forests

Climatic significance: tropical rainforests are large sink of greek-house gases like carbon dioxide, they help in maintaing earth's temperature

Oxygen supply: It is estimated that photosynthetic activity of tropical rainforests supply nearly half of world's oxygen, hence they are aptly called as "lungs of the earth".

Economic Significance: These forests yields many valuable medicinal plants, hard and sturdy timber.

Biodiversity: These forests are very rich in biodiversity, infact richest.

well covered

Threats leading to deforestation

They are facing increasing instances of deforestation due to population pressure, raising of monoculture crops like rubber, industrialisation, urbanisation.

Elaborate, in the context of Amazonian rainforests due to sugar plantation, infrastructure development while in SE Asia main reasons of deforestation are palm oil plantation, timber, mining etc

Remarks

Serious Concerns due to deforestation

1) Accentuate climate change: Since they are sink of carbon dioxide, their deforestation will promote global warming, air pollution.

Loss of bio-diversity: They are bio-diversity rich, even monoculture plantations cannot recompensate for their biodiversity.

Disrupts food chains: Loss of evergreen forests will serious disrupt inter-related food chains, may lead to food scarcity.

Decrease in oxygen supply: Rainforests are dominant oxygen supplier, which is essential for human existence

Soil degradation: Deforestation will lead to soil degradation, which is an inter-generational asset.

Hence, there is need to check growing deforestation of evergreen forests as humanity cannot live without their multiple benefits.

well addressed this part

Remarks

S.S

Q12. Agriculture is not only sensitive to climate change, but also one of the major drivers of climate change. Critically evaluate. (15 Marks)

Take a global context

Indian agriculture has very deep relation with climate as close to 60% of India's agriculture is rainfed and around 60% of livestock production comes from rainfed areas.

Climate change refers to change in long term average temperature of earth making it hotter which has wide ranging consequences.

Impacts of Climate change on Indian Agriculture

1) Loss of productivity: high temperatures will decrease yield of crops e.g. as per 4×4 report of INCCA, wheat yield will decline

2) Encarbate the water scarcity: Climate change will induce changes in rainfall pattern severly impacting rainfed agriculture.

3) Reducing farm incomes: Economic Survey estimated

Remarks well discussed

Also mention increase in pest attacks

that climate change related uncertainities can reduce farm income by as much as 25% in rain-irrigated areas.

4) Soil degradation: Climate change can also lead to soil degradation, having long term impact on productivity.

Frequency of disasters: Climate change will increase frequency of disasters like droughts, floods leading to damage of crops, inundation of agriculture land.

However, on other hand Agriculture is also one of the contributors to climate change, as a result of various activities

Agriculture as driver of Climate Change

1) livestock emissions: livestock used in agriculture like cattles contributes to emission of green house gases like Methane.

Remarks

Very well covered

2) Field emissions: paddy fields emit methane, a greenhouse gas.

3) Stubble burning: Stubble burning by farmers leads to accumulation of particulate matter, smog formation e.g. Delhi smog.

4) Unscientific agricultural practises: like excessive use of fertilizers, lead to eutrophication, disturbs marine food chains, primary productivity of plankton. → Nitrous Oxides emissions, a GHG

5) Diversion of forest land: Cutting of trees for agriculture practises, contributes to global warming, as agriculture crops have much low CO_2 absorption potential.

Way forward: There is need for sustainable agriculture practises like vertical farming, sensor based farming, genetic improvement to develop new breeds with lower emissions to maintain harmony between agriculture and environment. Also mention climati-smart agriculture, Agro-forestry etc

Remarks

6.5

Q13. Considering India's agro-climatic zones and the extent of smaller farms, analyze how far agricultural diversification can help in achieving food security, improving human nutrition and increasing rural employment. (15 Marks)

India has 141 million hectares of arable land, out of which more than 50% is concentrated in growing cereal crops, it leads to monoculture, problem of hidden hunger and stagnating rural incomes.

Also, profitability of cereal crops is on decline which is particularly hard on small and marginal farmers, which constitute close to 85% of total farmers.

Subsume the context of variety of agro-climatic zones

Agriculture Diversification: It refers to focusing of diverse range of agriculture crops and allied activities like — fruits and vegetables, fisheries, bee-keeping, agro-forestry, farm forestry, growing of pulses, dairy, livestock sectors like meat, milk, eggs

well-explained

Remarks

Discuss employment prospects in various components of diversified agricultural activity

Benefits of Agricultural Diversification

In Rural Development Employment

→ **Higher incomes**: It can boost farm incomes.

Crop	Return on investment/hectare
Cereals	Rs. 30,000
Horticulture	Rs. 300,000

(NITI AAYOG)

Nice

→ **Rural infrastructure**: It helps develop rural infrastructure like ware houses, cold storage due to forward backward linkages.

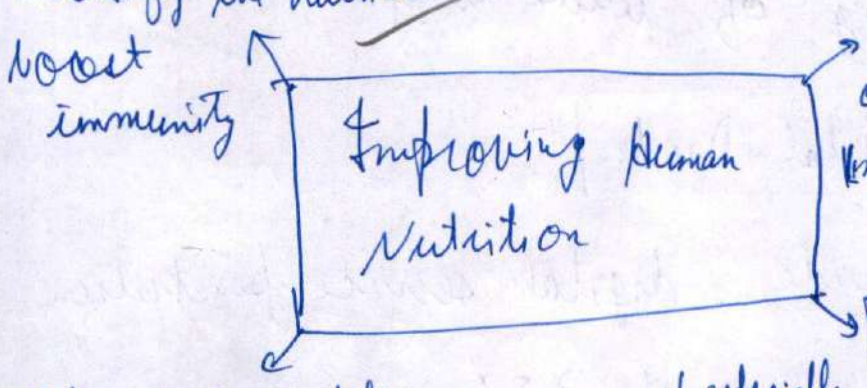
→ **Employment generation**: Livestock, horticulture can lead to self-employment for youth eg. keeping of 100 bee-hives generate annual income of 2-5 - 3 lac rupees.

→ **Value added exports**: Global demand is shifting from cereal towards animal products, hence diversification will boost exports.

→ **Inclusivity**: practises like animal rearing can be done by small and marginal farmers, tribals.

Remarks

→ Forward linkage with food processing: agri-diversification will provide raw material for agro-based food processing industry, contribute to overall economic growth and will increase rural employment



Nice presentation with comprehensive coverage

Food security: In context of climate change leading to water scarcity, land degradation, diversified agriculture products like meat, milk, Pulses (grown on dry land), livestock rearing can act as shock absorber in cases of droughts, floods.

Hence agriculture diversification is key to ensure rural development, food and nutrition security.

Elaborate

Remarks

6

Q14. The phrase "digital divide" refers to the unequal and disproportionate pace of development in societies in having access to digital infrastructure and services. Analyze the extent of incidence and prevalence of digital divide in India. List in measures taken to bridge this divide. (15 Marks)

Even as India enters into race of becoming global digital super-power, it also faces the stark reality of wide digital divide.

extent of the incidence and

Prevalence of Digital Divide:

→ Rural urban divide: digital service penetration in rural India is just (35%) in Feb, 18 only 18%. but very soon 35% will be achieved

→ Digital literacy: As per NSSO survey, digital literacy in rural India is less than 10%.

→ Gender divide: studies show that women have lesser access to digital services (compared to men.

→ Social divide in access: The rich-poor divide is also manifest in digital domain with poor

Remarks

well-explained with support of data.

4

Also discuss the causes behind this 'digital divide' like language issue. Most of the content is in English.

and underprivileged sections like dalits, tribals lacking access to digital services.

Digital infrastructure: infrastructure like optical fibre, telecom towers are mainly concentrated in urban pockets.

Government initiatives to bridge the gap:

1) Bharat Net Project: It aims to link all the 2.5 lakh Gram Panchayats to high speed internet by optical fibres.
2) Digital Saksharta Abhiyaan: It entails inculcating digital literacy among the rural populace.

Common Service Centres: These are being set up in villages, small towns whereby various digital facilities are available at one centre, it also

good points

Remarks

generates employment.

Incentives to private sector: Government offers concessions and subsidies to set up telecom towers in remote and left wing extremism affected areas.

Saubhagya Yojana: This aims at 100% household level electrification, which is a pre-requisite for digital India.

Spectrum auction: Repeated rounds of spectrum auction, which will help telecom companies to widen their reach.

Hence several steps are being taken to bridge digital divide, without which digital India will lead to "divided" India.

good

→ Also mention Digital content and platforms should also be available in Hindi and regional languages to bridge this digital divide.

Remarks

6.5

Q15. Can India modernize its manufacturing economy and supply electricity to its growing population without relying heavily on coal and other related fossil fuel basket? Examine. (15 Marks)

India is second largest energy generators in absolute terms, but when it comes to per capita energy consumption (25 KJ/person/year) it is very below the world average.

At present close to 60% of India's energy requirements comes through fossil fuel based energy mainly the coal.

well-introduction with use of data

However, in context of global climate change, heightened concern for greenhouse gas emissions, there is global call to reduce or possibly eliminate reliance on polluting fossil fuels and shift to renewable sources of energy like – solar energy, wind energy, biomass among others.

Relate it to modernise manufacturing economy without relying on fossil fuel

Remarks

Needs of electricity: It is pre-requisite for development of industries, meeting needs of people and acheiving goal of 5 trillion $ economy by 2022.??

→ 5 year plans

Alternate Sources of Energy : (Benefits)

→ They are environment friendly

→ Cost of renewables are coming down e.g. solar energy cost coming down to Rs. 3 per unit. Not yet achieved

Challenges in expansion of Non-Fossil energy

1) Lack of reliability: renewable energy like wind, solar is based on resources which are changing, hence supply is not constant.

2) Issue of raw material: Solar energy requires high quality silicon, which is not available in India and has to be imported.

Remarks Also provide data of the contribution of non-fossil fuels in total energy supply and prospects in increase by 2030.

Also discuss how these challenges could be overcome keeping in view India's INDCs under Paris Agreement.

37

3) Technology constraints: Non-fossil fuel energy is technology intensive and requires heavy investment on R&D. ✓

2) Land acquisition issues: Various renewables like solar, wind require huge land, posing land acquisition problems. ✓

1) Grid stability: Due to erratic nature of renewable energy generation, there is issue of maintaining grid stability. ✓

4) Cost of renewables: Although it is coming down, but is still higher than coal based energy

well addressed

Way forward: As suggested by Economic Survey, we cannot totally rely on non-fossil fuel energy, there is need for intelligent mix and technical improvements in thermal energy like super-critical thermal power, electro-static precipitators. ✓ nice conclusion

6

Remarks

38

Q16. About 85 percent operational holdings are small and marginal lacking access to capital, technology and market for growth. Also, there is a lack of mutually supportive agriculture - industry symbiotic linkages. In this context, examine prospects and challenges of Agro-Industrial sector. (15 Marks)

Also subsume the context of small holdings ← lack of tech and market

Despite witnessing record production in food grains (285 million tonnes), Horticulture (300 million tonnes), agro-based industries perform sub-optimally like low share world food processing industry, stagnation in textile sector etc. ✓ A good start

Prospects of Agro-Industrial sector:

1) Employment generation: Agro based industries can be a major employment generator eg. textile, leather, food processing. ✓

2) Boosting exports: Industries like Apparel, footwear, food processing can significantly boost India's export. ✓

3) Integration with global value chains: Agro-based industries can help link India with global

Remarks → Also mention — Only 3% of the workforce is in agro-industrial sector and very less agro-processing so scope in this.

supply chains

d) Raising farmer income: Agro-based industries can help realise goal of doubling farmer's income by its backward linkages.

use data from economic survey

e) Tackle disguised unemployment: It can help absorb excess unproductive labour from India and help reduce disguised unemployment.

f) Attract Private Investment: Agro-based industries can increase corporate investment in agriculture, which is just 2% at present.

Challenges of Agro-Industrial Sector:

i) Small and marginal farmers
- Low marketable surplus
- Incapacity to adopt technology
- less capacity to invest in productivity

Nice coverage with brevity

ii) Poor Agri-logistics: Post-production logistics like warehouses, reefer vans is inadequate eg.

Remarks

Seasonality of crops is also an issue

We have less than 10% of cold storage capacity needed for horticulture.

iii) Unfavourable Policy regime
- unstable trade policies create uncertainty
- Restrictive APMC markets
- cereal centric agriculture, demand is Animal based
- Focus on leather, cotton than synthetics [Economic Survey]

food

iv) Obsolete technology: Both agriculture and agro-based industries are trapped in low technology trap — handlooms, low farm mechanisation.

v) Low investment on R&D: Less than 1% of agriculture GDP is ~~de~~ spent on R&D leads to low productivity, poor quality.

Govt. has taken several initiatives to address this such as — model APMC Act, Model land leasing and contract farming laws, 100% FDI allowed in food processing. There is need for collaborative effort among govt., farmers and pival sector to boost agro-industry linkage.

Remarks — In initiatives also mention SAMPADA scheme and Mega Food Parks

6

Q17. Analyze the role of rural tourism in facilitating community development, poverty alleviation, boosting cultural heritage, and conservation. Also explain the steps taken by the government to augment this sector. (15 Marks)

Rural tourism is one of important means of diversifying rural incomes, address rural overcrowding in agriculture as well as reducing distress rural-urban migration by generation of alternate livelihood opportunities.

Also define rural tourism as showcasing rural life, art, culture and heritage.

Role of rural tourism:

1) Poverty alleviation: It helps in addressing rural poverty by

- Self employment opportunities as tourist guides, drivers, porters etc.
- Attract private investment in hotels, lodge, restaurants etc.
- Supplements income from agricultural sources.

nice presentation

Sale of handicraft items and home-cooked food to tourists

4) Boosting cultural heritage: Rural tourism gives recognition and brand value to the rural

Remarks

well cited

cultural heritage e.g. Champaran tourist circuit highlights historical contribution of Champaran farmers

3) Conservation: Tourism due to its multiple economic benefits encourages local people to conserve their natural and cultural heritage

4) Community development: Rural community comes to interact with outside tourists, develop their knowledge base, raises social capital. Add specific examples

Government initiatives to boost Rural tourism:

1) Rural circuit tourism: rural circuit is one of the circuits intended to promote tourism.

2) PRASAD scheme: this scheme aims to boost

Remarks

religious tourism in the country.

3) Har gaon ki kahani (Himachal Pradesh): rural tourism is promoted by linking it to peculiar cultural traditions of each village. good

4) Bed and Breakfast scheme: Govt. approved B&Bs can be started by local people, to augument their incomes. Add Swadesh Darshan

5) Rural Connectivity: by means of Grameen Sadak Yojana, waterways, railways help tourist movement in rural areas.

Apart from this there is need for skill building of tourist industry workers, brand building and widespread publicity campaign to leverage full potential of rural tourism.

Also mention rural tourism infra. development component under PIDDC scheme, rural cleanliness under SBM Rural, wayside amenities and Monuments refurbishment in rural areas

GS

Remarks

Q18. Though China's one-child policy has been criticized as against human dignity and rights, it has improved and controlled the nation's population by a possible 400 million people. Can we also adopt a similar approach, although not so drastic and punitive? What are various options to control population in India at present? (15 Marks)

Rising population is one of the biggest challenge as it leads to increased pressure on existing resources, challenges of food security, neutralising the economic growth. nice intro

Options to control population

→ Awareness generation regarding benefits of small family.

→ Ensuring availability of family planning measures to each and every section of the society.

→ Reward mechanism for those adhering to small family norms e.g. eligibility

Remarks Address the first segment of the questn i.e. can India adopt a milder version of China's one-child policy

criteria to fight for Pachayat level options.

→ Extension of healthcare facilities in the rural areas; will help increasing reach of modern population control measures.

→ B. Trained personnel to undertake counselling of the families.

Also discuss some other measure like contraceptives promotion, Preena and Santushti strategies under Population Stabilization Fund.

3.5

Remarks

→ Almost impossible in India's democratic set up and not required even.

Remarks

Q19. "Social capital can be described as a resource which focuses on social relations that have productive benefits". Discuss the role of social capital in determining the human development of a region. (15 Marks)

Social capital refers to inter-relationships among the human beings, and it is also an important determinant of development. important for peace, harmony and a feeling of unity

Role in Human development.

1) Peace in region : Higher social capital will lead to tolerance, peace less law and order problems, hence will facilitate investment.

2) Fosters collectivity and team spirit : Social capital increases the productivity of human being by fostering team work eg. co-operative farming in South India.

Remarks Discuss how social capital is a resource

3) Encourages innovation : A culture of fraternity, tolerance engenders acceptance of dissenting opinions, hence innovation is welcome and even encourage.

4) Resource use efficiency : Social capital instills sense of mutual responsibility for preservation of common goods like environment, judicious use of water etc.

5) Resource pooling : Social capital generates sense of trust and helps in resource pooling, leading to economic gains eg. car-pooling in Singapore

6) Makes govt. accountable : High social capital will help in extracting sense of

Remarks well addressed

accountability from govt. due to unified voice eg. December 16 rape protests

) Promotes micro-enterprizes : for instance women SHGs led micro-enterprizes in good India.

Hence social capital is a pre-requisite for high level human as well as economic development.

—Also discuss that in view of India's diversity in terms of regions, religions, castes, levels of development, achieving 'social capital' goals is really tough.

— Discuss some negatives of social capital like informal justice systems

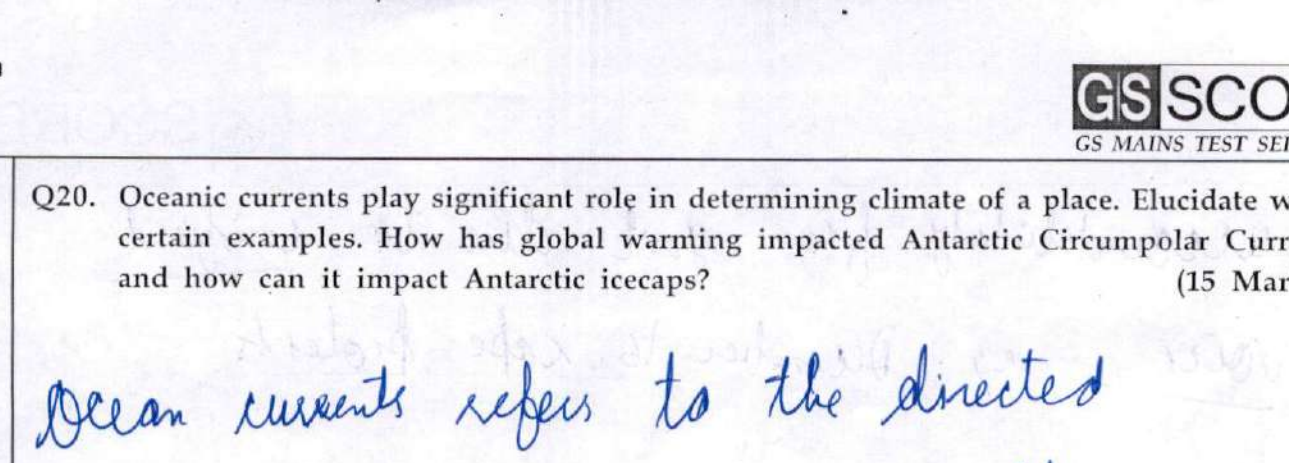
5·5

Remarks

Q20. Oceanic currents play significant role in determining climate of a place. Elucidate with certain examples. How has global warming impacted Antarctic Circumpolar Current and how can it impact Antarctic icecaps? (15 Marks)

Ocean currents refers to the directed movement of water in the oceans, they are like the large rivers in Oceans. They help in transfer of heat from lower to higher latitudes as well as in moderating the effects of climate. nice introduction

Cold currents induce aridity



Remarks good use of map

Moderating Impact: Winters in England are less severe compared to similar latitude in North America due to presence of moderating impact of warm North Atlantic Drift.

Location of deserts: Several deserts like Namib desert, Atacama desert, Sahara desert are located on margins of cold current as it induces aridity

Affects precipitation: Warm currents have high moisture carrying capacity, hence they help bring in rainfall.

Antarctic circumpolar current

Due to global warming, average temperature

well-discussed
Also discuss mixing of warm and cold current

Also discuss about the features of this current in short

Remarks

of this cold current is increasing and as it passes mainly through the antarctic region, rise in its temperature can aid the process of melting of polar ice-caps, creating ecological instability.

2nd part of Question is not explained comprehensively

5

Remarks