

GEOGRAPHY + DISASTER MANAGEMENT

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. • 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.
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1. Invigilator Signature _____
 2. Invigilator Signature _____

Rohit kumar

Name SHIREEN PRAKASH
 Roll No. _____
 Mobile No. _____
 Date _____
 Signature Shireen Prakash

REMARKS

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GS MAINS TEST SERIES 2020

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Section - A

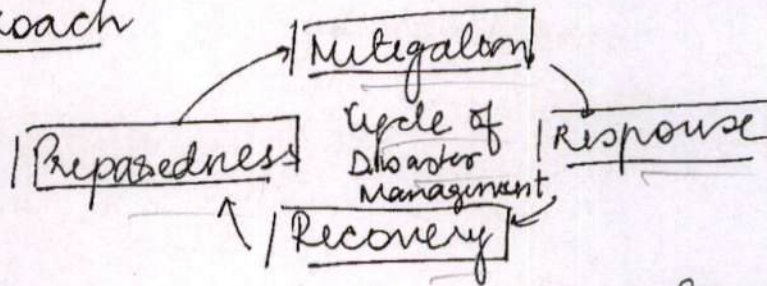
Q1. There is an urgent need to rethink disaster management in India. The responses to disasters must be proactive, not just reactive. Comment. (10 Marks)

India's vulnerability profile indicates that it is vulnerable to many kinds of disasters. Like floods (12% of the total land area), earthquakes (58.6%), cyclones (5700 km coastline), landslides, etc. Hence there is a need for efficient disaster management.

Good

intro

Proactive approach



• Preparedness: Early warning systems, hazard mapping and vulnerability analysis, zoning have to be carried out for efficient forecasting and response mechanisms. eg: landslides, early warning systems

• Mitigation: mainstreaming disaster management in development, construction of housing, dams, etc will prevent huge physical and financial losses arising out of disasters.

• Response and Recovery - must be based on the premise of 'build back better' and learning from the disaster. use of Information Technology and other tools for effective prioritisation and

Remarks

Before this, need to discuss India's approach towards disaster uptill now.

follow up are essential.

Thus, a proactive approach has to be based on a holistic institutionalised set up delineating the responsibilities of multiple stakeholders.

2½

Robust implementation of National Disaster Management Plan, 2016 and the Disaster Management Act, 2005 ^{is} ~~with~~ ~~are~~ necessary for cementing a holistic approach to Disaster Management.

- Why do we need proactive approach?
- Highlight steps to build proactive approach.

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 light of the above statement, discuss the causes of drought in the drought-prone Bundelkhand region and suggest the way forward. (10 Marks)

Spatial and Temporal variability of rainfall in India makes ^{certain} regions like interior parts of Maharashtra, Telangana, Rajasthan, Bundelkhand ~~is~~ prone to droughts. Heavens mismanagement of drought situation leads to a crisis

Mention other reasons except of less rainfall

Gaps in policy and mechanisms

→ Inadequate ^{drought} early monitoring systems in the Bundelkhand region

→ Lack of crisis management centres and inadequate implementation of the district and village ~~own~~ contingency plans.

→ Mismanagement of water resources in Bundelkhand both surface and ground water resources as well as absence of sufficient infrastructure to deliver ^{drinking} water to households.

→ Lack of agro climatic planning which leads to overexploitation of water resources and crop failure causing farm livelihood insecurity.

Measures have to be proactive in nature

- early monitoring systems and inter last mile

Remarks

→ There is lack of traditional water management system.
 → Govt. policies such as subsidies for particularly intensive crops aggravate the problem

Connectivity for information dissemination

→ Formulation of district and village contingency plans with multi stakeholder approach → Mention

→ Agricultural support systems ~~for~~ and developing its drought resistant varieties for dry land agriculture objective

The threat of climate change looms large over the country. Hence effective drought management is necessary to safeguard food and livelihood security. too.

3

→ Water conservation method should be promoted & improved.

→ Alternative employment should be created in the region.

Remarks

Q3. To double the income of farmers in India, 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)

The real incomes of farmers have been declining as a result of which they are pushed into debt trap and poverty.

Come to doubling farmers' income directly.

Livestock rearing

Importance

contributes 29% of agricultural crop
 livelihood diversification for

Small and marginal farmers
 food and nutrition security

export potential of processed products from livestock rearing.

Steps taken by the government

National Mission on Bovine Productivity, which focuses on provision of quality inputs like feed, fodder, livestock extension services, quality germplasm, etc

Rashtriya Jyotshu Mission → focus on development and conservation of indigenous breeds, conservation and developing indigenous breeds in their native tracts genetic upgradation of nondescript cattle, etc.

National Animal Disease Control Programme launched recently in order to provide vaccination to cattle, ~~and~~ sheep, goats, turkeys, etc against Foot and Mouth Disease and Brucellosis.

Need to examine each of these in brief.

Remarks

e- Pashu ~~Plant~~ portal for facilitating information on availability of quality ^{breed} germplasm to farmers.

National livestock policy for a holistic approach to the sector → ^{elaborate} ^{infrastructure} its objectives

• Animal husbandary ^{fund} under NABARD for enabling infrastructure development of animal husbandary sector and inclusion in the Kisan Credit ~~sect~~ card for animal husbandary.

3

Despite such initiatives, problems remain relating to lack of adequate investment, quality feed, extension services, etc. ~~an~~ Efficient development of this sector is important for doubling farm income

→ Conclusion requires more clarity.

Q4. "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)

A Volcano is an opening or vent on the Earth's surface from which lava gushes out. Volcanoes when violent and explosive cause huge harm to life and property. Good intro

Effects of volcanoes

→ Mudflows: lava erupting from volcanoes when mixed with water gushes out into adjoining areas leading to loss of lives and property as well as displacement of people.

→ Air pollution: The Nuee ardente or the bright cloud over a volcano along with pyroclastic materials cause air pollution. Emission of sulphur dioxide, hydrogen sulphide, etc can cause respiratory issues.

→ Water pollution: ^{along with other materials} lava may seep into the underground water table causing water contamination

However, there are certain benefits too.

→ Volcanoes give rise to an assemblage of landforms which can generate tourism opportunities in the area. In India, Maharashtra and Karnataka, have certain landforms like domal hills of granite rocks etc from the deccan trap eruption.

→ Formation of soils like black soil in India formed

Need to emphasize more on benefits

Remarks

from the eruption of Deccan trap which is beneficial for the cultivation of cotton, etc and is also self ploughing, helpful in dry regions.

2 1/2

Volcanoes are ^{a part of} endogenetic movements and the constant interaction of endogenetic and exogenetic forces gives rise to ~~variously~~ ^{various} on the Earth's surface

- Focus on benefits of volcanoes.
- It helps in global cooling
 - It leads to formation of hot springs
 - It brings volcanic minerals & stones.

Remarks

Specify it approximately

Q5. 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)

In Meghalaya, the practice of rat hole mining has led to a huge number of deaths despite a ban on the practice by the supreme court.

Rat hole mining: The topography of Meghalaya the coal seams are very thin and close to the Earth's surface as a result of which narrow tunnels are dug which can only accommodate one person, frequently children.

→ This leads to high chances of subsidence, collapse of tunnels and resultant suffocation due to release of harmful gases.

Sound analysis of Causes

→ Lack of enforcement of safety rules and regulations by the mining authorities etc. is the most important cause behind the mishap.

→ Meghalaya has reserves of coal, limestone, dolomite, etc. but at the same time, lack of significant employment opportunities forces people to take up this dangerous occupation.

→ Rat hole mining also has ecological consequences with deforestation, land degradation, environmental pollution, waste accumulation and poor disposal, etc.

→ Hence, lack of timely action by the

Better discuss with respect to recent incident

Remarks

authorities and loopholes in implementation of ban on the practice have led to a huge loss of lives.

2

- Analyse reasons of delayed rescue operation
- Discuss intervention of the apex court & NGT in this regard.

Remarks

Q6. What are the major glacial features? Discuss the significance and threats glaciers are facing. (10 Marks)

Glaciers are large masses of ice which have been formed due to several geological and climatic events in the Earth's geological past. They give rise to a variety of landforms ~~being~~ on the Earth's surface. *Satisfactory intro*

Processes by which glaciers operate on the Earth's surface - plucking, abrasion, etc

landforms formed by erosion
landforms of glaciated highlands:

Arêtes or pyramidal peaks: When two or more cornices or ice radiate backwards, horns or serrated ridges are formed. These are called arêtes. We can see such phenomenon in the Himalayas.

Moraines which are rock fragments embedded in glaciers brought down the valley. lateral moraines are found on the sides; medial moraines in the centre, ground moraines, etc

Hanging valleys: when the main main valley is eroded more than the tributaries, tributaries plunge down as waterfalls.

landforms of glaciated lowlands

→ Roche Moutonnée -

→ Eskers are long, narrow sinuous ridges composed of gravel, sand

→ Drumlins, etc (till)

Need to discuss major physical features like crevasse valley, glacier etc. rather than erosional & depositional landform

Remarks

Briefly explain each of these.

Significance of glaciers: → source of minerals
 → source of perennial rivers like Ganges, etc
 → tourism potential
 → maintaining Earth's albedo and hence global temperature

Threats to glaciers:

→ climate change and global warming have led to a rise in temperature as a result of which the pace of glacial melt is accelerating not only in the polar regions but also in the third pole that is Tibet and the Himalayan region

→ Threat to rivers which are essential for sustaining agriculture in the Himalayan and Hindu Kush region

→ Vulnerability to floods in the low lying areas as well as glacial lake outburst flood.

Rather than focusing on impact of melting glacier, need to discuss threat to glacier

Remarks

Q7. What is the sub-terranean twin river system? Discuss with reference to the Amazon-Hamza twin river system. (10 Marks)

Remarks

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Remarks

Q8. Discuss the phenomena of El-Nino, La-Nina, and Madden-Julian Oscillation in alignment with their impacts on the Indian Monsoon. (10 Marks)

The atmospheric-oceanic phenomena like El-Nino, La Nina and Madden-Julian Oscillation have an impact on Indian Monsoon. Satisfactory

intro
Need to explain this phenomenon clearly with respect of ENSO

El Nino: is an oceanic atmospheric phenomenon which is characterised by the appearance of warmer waters off the coast of Peru in South America. This leads to a reversal of the normal pressure conditions that is, high pressure in the ~~west~~ Indian Ocean (low normally) and low pressure in western Pacific.

Impact on Indian Monsoon: The distortion in equatorial westerlies and ^{surface} pressure on the ocean leads to drought like situation in the Indian subcontinent, Indonesia and Australia. South west monsoon will be in deficit in the years of El Nino but North East monsoon will be in excess.

La Nina: is the increase in the magnitude of the or augmentation of the normal ocean atmospheric conditions over the Pacific and the Indian Ocean that is low pressure in the Indian Ocean and high pressure in the western Pacific.

Thus, during the La Nina years, the south west monsoon in India may bring excess rainfall however, the North East (winter) monsoon may be in deficit.

Precisely explain this phenomenon

Remarks

Madden Julian Oscillation is a monsoon phenomenon (West to East) with phases of enhanced and suppressed rainfall (lasting for 30-60 days) and its enhanced phase brings heavy rainfall

in India → Need to be precise with this like when it enhances Indian monsoon and their

(3½)
All these phenomena are ~~not~~ relationship with the Indian monsoon is not yet fully understood. Advanced models of forecasting may prove helpful in this regard.

Remarks

Q9. "Most of the tropical deserts of the world are found adjacent to cold currents and in areas of offshore winds". Discuss the factors responsible for the formation of tropical desert climate citing examples. (10 Marks)

→ Come to the point directly.

The pattern of wind and oceanic circulation on the Earth's surface gives rise to climate variations in ~~the adjoining~~ different regions of the Earth.

Most of the tropical deserts of the world are found in the subtropical latitudes (that is around 35-40° N/S of the equator) ~~due to~~ on the western side of the continents. It's between 5-30° latitude

due to a) being in the offshore region of the Trade winds: The North East and South East Trade winds are offshore on the west coast which leads to

- high pressure anti cyclonic conditions
- inadequacy in moisture and precipitation
- subsidence of air and lack of

convictional current formation inhibiting rainfall
Thus, ^{the} Sahara, Arabian peninsula, west Australia Deserts are all found in this region and formed due to these factors.

b) West coast of continents in the sub tropical latitudes are also desiccated due to cold currents: like Peru Current (Atacama)

Analyse low offshore trade wind loses it moisture.

Remarks

Desert) in South America, and cold currents again induce high pressure anti cyclonic conditions which inhibit rainfall and precipitation. It brings stability in the atmosphere.

Thus, we see that oceanic and wind patterns are the prime reasons behind the location of world tropical deserts.

3
 → Need to be more clear with the concept & explain phenomenon precisely.

Remarks

Q10. Discuss the formation of Polar Stratospheric Clouds and their role in the depletion of the ozone layer. (10 Marks)

The ozone layer is situated in the stratosphere and is responsible for protecting us from the harmful ultraviolet rays of the sun.

Polar Stratospheric clouds are formed ^{over} the Arctic and Antarctic during their respective winters. due to the presence of cold weather and ~~these clouds are reservoirs of~~ circumpolar whirl (stronger in the Antarctic) which traps the constituents.

These clouds are made up of chemicals like chlorine nitrate and the chemicals released from ~~by~~ chlorofluorocarbons, etc which are trapped in the whirl.

Thus, they are reservoirs of chlorine, a molecule which is responsible for forming chlorine monoxide, the destroying ~~factor~~ chemical for ozone.

During the Antarctic or Arctic summer, when the sun ~~is~~ rises above the horizon, these clouds melt releasing their compounds. Hence they

You do not seem to be sound with the given concept

Remarks

act as the base for chemical reactions which destroy ozone. Thus, these play a significant role in the ozone layer depletion.

Sustained efforts ~~by~~ under the Montreal Protocol have led to a significant improvement and closing of the ozone hole.

1/2

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)

Tropical rainforests are found straddling the equator in the equatorial regions of the world. eg: Amazon rainforests, tropical rainforests in South East Asia in Indonesia, Malaysia, etc. However, many studies have reported the accelerating loss of these ^{precious} resources.

Role of Tropical Rainforests

- Lungs of the world: one of the chief sources of oxygen, necessary for life
- Biodiversity: The tropical rainforests are host to a wide variety of species both floral and faunal and thus are significant for the world food web.
- ecosystem services: Research has shown that Amazon rainforests as well as others play an important role in rainfall patterns throughout the globe
- Carbon sequestration: These forests store a large amount of carbon, the release of which will lead to a temperature rise beyond 1.5°C .

Give a brief account of deforestation in tropical rainforests in intro

Remarks

ist
out
various
other
causes
of
deforestation
in
these
regions.

However, these forests have been subjected to a lot of deforestation and degradation. For example: Amazon rainforest in Brazil witnessed a 90% rise in forest fires from last year due to political apathy, dry weather, ~~etc~~, shifting cultivation, etc. The tropical forests in South East Asia are cut down due to palm cultivation which has given rise to monoculture adversely affecting the ecosystem.

Consequences of large scale deforestation

- Release of a large amount of stored carbon may potentially add to global warming leading to changes in rainfall patterns and ocean acidification.
- Loss of biodiversity: many endemic plant and animal species face extinction due to deforestation adversely affecting food webs and ^{the forest} ecosystem.
- Potential loss of livelihood of tribal communities due to destruction of forest resources like wood, etc.

Remarks

Way forward

- International support and political will.
- Effective implementation of UN REDD+ umbrella for incentivising forest conservation
- Sustainable development that ~~does not~~ mainstreams conservation of forests.
- Awareness among the public

Make each of these points self-explanatory for clarity

5 1/2

The future of the Earth depends on our willingness to save the lungs of the planet

Q12. 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)

Reliable and efficient electricity supply is necessary for manufacturing industry and also for economic growth. Although India is the third largest energy consumer but its per capita energy consumption is low. *Good intro*

Energy mix: Coal and other fossil fuels still contribute more than 70% to the total energy mix and thermal power is responsible for a bulk of the electricity generation.

Problems with coal and other fossil fuels:

→ air pollution: release of toxic gases like nitrogen oxides, sulphur dioxide, etc from power plants causes respiratory issues and leads to global warming.

→ inadequate efficiency of the coal and thermal power plants due to poor plant load factor, absence of power purchase agreements, obsolete equipment, etc

In view of the ^{environmental} problems of coal related power generation, in recent times, there has been a ~~shift in the~~ a steady rise in the installed

Remarks

Capacity of renewable energy India added almost 40 GW of renewable energy in the last 5 years.

While renewable energy is significantly less polluting and a lower greenhouse gas emitter, it can't completely overtake coal as the primary source of electricity for manufacturing and supply chain for households.

- Storage is still an issue with lack of ready availability of storage technologies and the intermittent nature of solar and wind energy generation.
- Grid parity or grid integration has not been achieved yet hence exclusive reliance on renewable energy may not guarantee energy security.
- High capital costs in setting up solar or wind energy plants as compared to thermal energy plants. Such factors may not be able to provide cost effective electricity or energy supply to manufacturing adversely affecting our competitiveness.
- Plant load factor of solar, wind and other renewable energy plants still remains lower than that of thermal energy plants.

Way forward → Improving the efficiency of

Sound analysis of challenges

thermal power plants through technologies like the combined gasification cycle.

→ Research and development in storage and grid integration of renewable energy.

5/2
~~Area~~ Energy security of which supply of electricity is an important component ~~is~~ is crucial for manufacturing competitiveness household income security and socio-economic development.

→ Discuss various initiatives taken by govt. to modernize India's energy supply.

Remarks

Q13. Analyze the role of rural tourism in facilitating community development, poverty alleviation, boosting cultural heritage, and conservation. Also, elaborate on the steps taken by the government to augment this sector. (15 Marks)

Even today, India predominantly remains a rural country with more than 65% of population living in ~~the~~ rural areas. The climatic, socio-cultural and economic diversity make rural areas potential sites of tourism. *Satisfactory*

Rural tourism is an important part of the rural Non Farm Sector (RNFS) and ^{can} play an important role in the rural economy. *intro*

Role of rural tourism in facilitating

a) community development

→ Rural tourism can have positive spillover effects on development of community infrastructure like health, education facilities, sanitation, etc.

→ It can also increase awareness and knowledge of the rural inhabitants and facilitate ^{form} the feeling of shared heritage and cohesive bonds among the people, ~~particularly in areas~~ more so since these areas are still subject to caste, gender discrimination etc.

Remarks

b) Poverty alleviation

→ Rural tourism can absorb the surplus labour in the agriculture sector and provide alternative employment (non farm opportunities)

→ It can boost rural consumption and improve the quality of life of the people living in rural areas, thus increasing economic growth and development

→ sustainable, equitable and inclusive growth can also be facilitated by promoting rural handicrafts sector

c) Boosting cultural heritage

• By facilitating the identification of places of cultural interest and creation of repository of cultural heritage, eg: many small villages in Tamil Nadu have ancient temples which house important artefacts. These are have not been documented properly which puts them at risk

• Revival of traditional art's dance and music forms, like scroll paintings, folk dances, and musician give a fillip to the livelihood of traditional artists.

d) Conservation: Eco tourism as well as agri tourism wherein unique agricultural practices are showcased can help in conservation of environment

Government measures:

Remarks

Need to discuss negative aspect of rural tourism as well.

Sound analysis of benefits of rural tourism

• The Suadesh Darshan scheme of the ministry of Tourism which stipulates theme based tourism has Rural Circuit which focuses on rural tourism

Facilitating rural development through provision of basic amenities

→ Shyama Prasad Mukherjee Mission - cluster

based development of rural areas

→ Jal Teerav Mission, Swachh Bharat

Abhyaan etc to provide drinking water, sanitation facilities.

→ Livelihoods mission and Skill Development

(DDU-GKY)

Rural Tourism can promote inclusive growth and help in achieving Sustainable Development goals.

6

Remarks

* Need to be more lucid with your handwriting throughout.

Q14. 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 the population in India at present? (15 Marks)

Many experts credit China's one child policy as the driving force behind ~~its~~ preventing its population from drastically increasing. India ~~which~~ is expected to surpass China to become the world's most populous nation by 2027 according to the United Nations.

Many advocate that India should adopt this policy to stem population growth since a huge population implies resource stress, however, it would amount to a violation of human rights. Also, the forced population stabilisation measures of 1970s failed to yield any concrete outcomes.

However, a holistic approach could be adopted which focuses on nudge policies which ~~prevent~~? ~~the people from~~ can facilitate appropriate family planning choices.

→ Access to a wide range of health services::
 Making contraceptive and other reproductive health services accessible, affordable and inclusive.

Remarks

will ensure family planning within a rights based framework.

→ Women empowerment → It has been found that women with higher levels of education have lower total fertility rates. Financial independence will lead to higher age of marriage, delay in birth of first child and spacing between children.

→ Information, Education and Communication Campaign.

An intensive public awareness campaign holistically targeting ~~and~~ even adolescent age groups about appropriate reproductive health practices.

→ Incentives for access to ^{higher} education and other services may be tried on a pilot basis for those with appropriate family sizes.

The government has initiated several schemes like

- a) Mission Parivar Vikas which is aimed at assuring access to family planning services within a rights based framework

- b) Access to injectable contraceptive, (MPA) like Antara and Chhaya (fill)

Remarks

Not clear

- c) Strategic family planning programme
 d) Carrying out awareness campaign through Accredited Social Health Activists, etc

5
 Enabling access to basic amenities for a growing population is necessary for the achievement of sustainable development goals.

- Mention various population control measure at present time
- Scheme for home delivery of Contraceptives by ASHAs
 - Pregnancy testing kits
 - Compensation scheme for sterilization acceptors.

Remarks

Q15. "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 is the capital which is generated through community, interpersonal relationships that can help in achieving common objectives of development. Good intro

While social capital is intangible in nature and not easy to measure, it supplements physical, financial and human capital in growth objectives.

Role of social capital in human development

→ Facilitates social cohesion which enables permanency in welfare objectives.

→ enables moving towards an outcome based approach in sectors like health, education. For example, in India, ⁱⁿ public health care in rural areas, Accredited social health care activists (ASHAs) are a group of women who rely on social capital to improve demand side health seeking behaviour.

→ In education, social capital can facilitate better learning outcomes ~~by~~ ~~holding~~ and

Remarks

bringing about positive changes in attitudes towards education, particularly for girl children.

→ Social capital can also lead to more efficient management of community resources and assets leading to supplementing government efforts in resource delivery ^{and services}

eg: Better maintenance of village water resources, grazing grounds, common property resources, etc

→ Delivery of services like ^{electricity} ~~power~~, etc: People public private partnerships for monitoring services delivery are helpful in areas like electricity supply, etc

→ moving the community towards better behaviour and attitudes particularly in areas environment conservation, etc.

5

Remarks

→ Need to discuss negative aspect of social capital as well → Draw a sound conclusion at the end.

Remarks

Q16. Discuss the major soils of India. Critically evaluate the role of the Soil Health Card in the context of the changing pattern of cultivation. (15 Marks)

Soil is a thin layer on the surface of the Earth. There are around ~~seven~~ ^{eight} types of soils in India.

Good intro

Alluvial soil

and other materials

• formed by silt deposited by the rivers on their way to the sea in both North and South India

• found in the deltaic regions, Northern plains - Uttar Pradesh, Bihar, West Bengal, etc and in the Krishna, Godavari and Kaveri deltas ~~in the South~~

• soil is rich in phosphorus, nitrogen, humus.

but poor in potassium

• supports the major agricultural belt of India

Black soil • formed by the weathering of ~~basaltic~~ ^{basaltic} rocks in the Deccan and iron containing ferruginous schists in the Tamil Nadu, etc

• found in parts of Maharashtra (Deccan trap), Karnataka, Tamil Nadu, etc

• rich in calcium, iron, aluminium, magnesium

but poor in nitrogen, phosphorus and humus.

• cotton, sugarcane, etc grown

Red soil • formed by the weathering of crystalline igneous and metamorphic rocks. containing iron

Remarks

It's actually red & yellow soil

→ found in Madhya Pradesh, Tamil Nadu, Andhra Pradesh, Karnataka etc.

→ deficient in nitrogen, phosphorus and humus.

Laterite soils → found in areas of high temperature and heavy rainfall where lime and silica are leached away leaving iron oxide and potash in excess.

→ deficient in organic matter, (humus), nitrogen, phosphorus, while iron, aluminium in access.

→ Plantation crops grown - found in Assam, West Bengal, etc.

Peaty soils → found in humid areas with heavy rainfall with accumulation of a large amount of organic matter. eg: Bihar, West Bengal, Kerala, etc.

Saline and Alkaline soils:

→ arid, semi arid, water logged areas
→ high amount of salt content making them unfit for cultivation

→ also a result of excessive irrigation.

Punjab, Haryana, Gujarat, etc.

Desert soils are found in desert areas and

Mountain soils of varying types in mountainous regions

Soil health Card ~~is~~ contains nutrient wise and crop wise recommendations to farmers to aid them in crop cultivation (contains soil status also

Forms on major types of soil like arid soils, forest soil etc.

is ~~10~~¹² nutrients and 6 crops) -

Role in Changing Cultivation : Changing crop patterns with monocropping, lack of agri climatic planning have led to soil ~~use~~ degradation and ^{falling} crop productivity. Soil Health card can help in optimum application of fertilisers and cultivation of crops suitable for the soil conditions

→ Need to discuss lacuna of this scheme as well.

Remarks

Q17. Discuss the degradational and aggradational landforms formed by sea waves. Elucidate the role played by them in shaping the coastal economy. (15 Marks)

Remarks

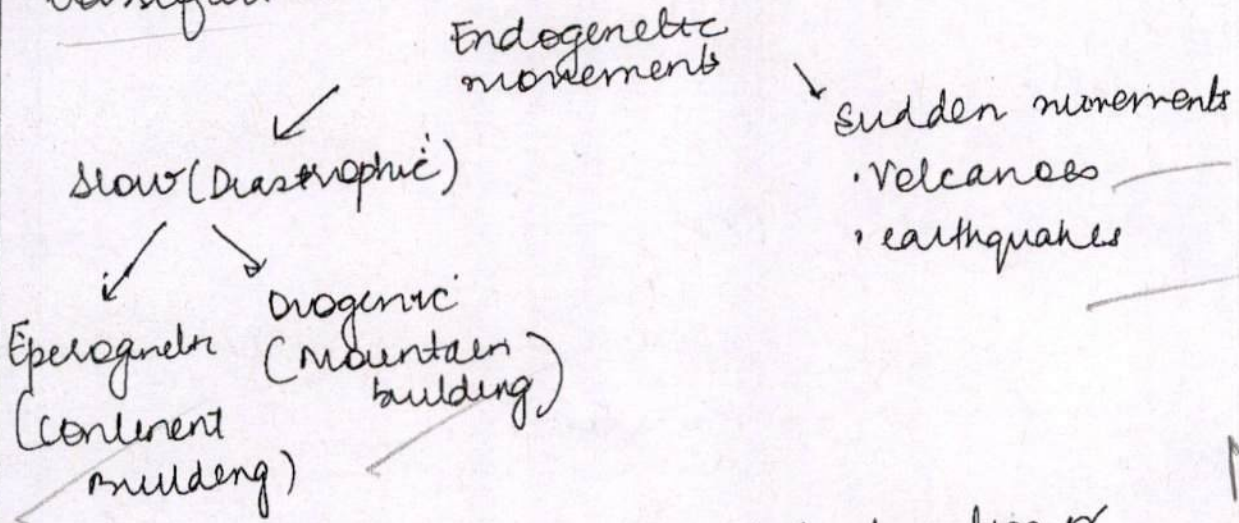
Remarks

Remarks

Q18. "Present landforms are the result of continuous constructive changes in the earth's interior and continuous gradational activities above it". Elucidate. (15 Marks)

The assemblage of landforms on the Earth's surface is the complex interplay of endogenetic and exogenic forces simultaneously (interior) (exterior) acting on the Earth's surface. *Good intro*

The endogenetic forces and movements are broadly classified into



hence these movements lead to denudation or aggradation of the Earth's surface
for eg: fold and faulting give rise to mountains (fold and block mountains)

These surfaces may be worn down by denudation that is all those activities which lead to a fall in the elevation of the Earth's surface

Need to explain each of endogenetic forces

Remarks

The agents of denudation include air, water, wind, glacier, etc driven by solar energy

Mass movements driven by gravity like soil creep, landslides, slumping, etc also lead to wearing down of the Earth's surface

~~Wind and water erosion lead to result in the forms~~

→ These agents have different erosional and depositional landforms associated with them and they also have an effect on tectonic landforms. eg: tectonic plateaus may be eroded by wind, water, glaciers etc to form dissected or residual plateaus.

→ Their interaction of these opposing sets of forces gives rise to a unique set of landforms on the Earth's surface. eg: volcanic rocks - and landforms within the earth's surface may be exposed by denudation by wind

→ Rocks formed by epeirogeny and orogeny may be weathered and converted into rocks of different types by agents of denudation

Better explain each of the endogenous forces & their role clearly

Remarks

Hence, relief and landscape configuration is being subject to slow yet constant change as a result of this interplay

5

Remarks

Q19. Elaborate on Oceanic Trenches and their formation. How do they contribute to the biodiversity of oceans? (15 Marks)

Oceanic Trenches are formed as a result of ^{tectonic} plate movements ~~under the~~ in the oceans. and are one of the varied relief features on the oceanic crust.

Formation of oceanic trenches:

→ The phenomenon of oceanic-oceanic and ^{ocean-continental} subduction or collision of the two plates gives rise to oceanic trenches.

→ As two plates collide, the denser plate is subducted beneath the overriding plates. As a result enormous friction is produced and the heat generated makes the rocks of the overriding plate melt as it plunges downward into the mantle.

→ Trenches are produced at the junction of this collision. eg: Kurile Trench, Mariana Trench, in the Pacific Ocean, Toga, Sandwich Trench in the Atlantic Ocean. There are island arcs on their proximity as a result of the rising magma.

→ Oceanic Trenches may be found at the ^{end} ~~edge~~ of the continental margins (continental rise) and are 3-5 km deeper than the surrounding.

Explain its feature

Need to explain each type of collision & formation of trench

Remarks

abyssal plain (deep sea plane).

Contribution to biodiversity of oceans

• Oceanic Trenches are situated in deeper parts of the ocean where it is difficult to sustain living forms

• However, certain unique species of leptotheca are associated with the deep sea hydrothermal vents found in their proximity called hydroclastic bacteria.

• ~~These~~ some of these bacteria live in conditions not conducive to other forms and have been found to be effective in clearing oil spills, plastic waste disposal, etc.

Hence, oceanic trenches play an important role in increasing the diversity of organisms found under the oceanic waters.

4 1/2

Not clear

Remarks

→ Discuss what kind of organisms are found over there
 → what are the sources of energy available there?

Remarks

Q20. Discuss how physical features and climate shape the economic and social patterns around the globe. (15 Marks)

Sound intro

The socio economic characteristics of an area are influenced by physical features and climatic conditions of the area. Attitude, latitudinal variation in insolation, pressure belts movement, presence of mountain barriers, topographic variations are some of the influencing factors.

Influence of physical features

Terrain or relief plays an important role in determining economy of an area.

eg: → the plains are favourable for large scale agriculture and are also densely populated regions. They can also be well connected by road and rail transportation network.

→ on the other hand, mountainous regions are generally dependent on cattle rearing and other activities, they are also not easily accessible due to difficulties in construction of infrastructure.

→ physical features can also include the distribution of mineral resources in the region.

eg: plateau regions of the world are generally rich in minerals and hence are conducive for the location of heavy industries. eg: the Chhotanagpur

Remarks

Need to discuss with respect to major physical features & climate the world.

plateau is called the Ruhr of India.

→ Presence of water resources: Coastal areas are important for trade and connectivity.

Physical features may influence the pattern of settlements particularly rural areas.

Climatic influences

→ Favourable climatic conditions attract significantly large population and ~~economy~~ economic growth can be facilitated.

→ Agricultural economies are influenced by climate patterns which determines the types of crops that can be grown in a particular area.

→ Hence, drought prone regions of the world and those in the interiors where there are temperature extremes are largely sparsely populated eg: Siberian plain, Desert regions, etc.

→ Areas with moderate climatic conditions also attract industrial growth. The coastal areas are particularly important because of their moderate climate and ~~base~~ connectivity and have the potential to become growth hubs eg: the ports of western Europe being ice free because of hinterlands are significant for Europe's economy.

Remarks

lives as per the environment.

Analyse how people living in cold & dry climate have moulded their lives as per the environment.

Both physical features and climatic conditions have social impact due to changing pattern of settlements, tourism opportunities and economic development.

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Human beings have also impacted the physical features and climate through their activities and hence have been able to overcome some of the barriers posed by them.

Discuss:

- People living in arid region
- People living in tropical rainforest region

Remarks