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An Institute for Civil Services

# IAS TOPPER'S

# TEST COPY

## KALLAM SRIKANTH REDDY

## AIR - 801

## (CSE 2022)

# GEOGRAPHY OPTIONAL

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Geography Test Series 2019

TEST - 04

# GEOGRAPHY

Time Allowed: 3 hr. Max. Marks: 250

## Instructions to Candidate

- There are EIGHT question divided in Two Sections.
- Candidate has to attempt FIVE questions in all
- Question No. 1 and 5 are compulsory and out of the remaining, three are to be attempted choosing at least one question from each section.
- The number of marks carried by a question/part is indicated against it.
- Answers must be written in the medium authorized in the Admission Certificate which must be stated clearly on the cover of this Question-cum-Answer (QCA) Booklet in the space provided. No marks will be given for answers written in medium other than the authorized one.
- Word limit in questions, wherever specified, should be adhered to.
- Attempts of questions shall be counted in chronological order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-Cum-Answer booklet must be clearly struck off.

95.5

Name Kallam Srikanth Reddy

Mobile No. [redacted]

Date [redacted]

Signature K. Sri Reddy

1. Invigilator's Signature Rohit Lodha

# REMARKS

Roll No. 17144

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## SECTION-A

Attempt all questions:

1. Answer the following questions in about 150 words each: (10 × 5 = 50)

(a) Write a short note on Archean and Dharwar rock system.

(b) Discuss the views regarding the formation of northern plains.

(c) Discuss the emerging problems in the cropping pattern of India.

(d) Write a short note on emerging sources of clean energy

(e) Write a short note on Middle Himalayas.

Q1(a)

Archean Rock System :-

- Formed in Pre-cambrian period (~~before~~ 4 billion ago).
- Formed due to solidification of molten magma
- Plutonic origin
- Also called 'Basement complex' or 'fundamental Gneiss' because these rocks forms base to the other rock formations.
- Foliated rocks
- Azoic or ~~an~~ fossiliferous rocks
- The rocks are crystalline in nature due to volcanic origin.
- The mineral composition consists from granite to gabbro.
- covers almost 2/3rd of the peninsular India.

good. The points are crisp & short

Further divided into Bengal Gneisis, Bundelkhand Gneisis and Nilgiri Greissis.

- Consists both metallic and Non-metallic minerals like iron, copper, mica, bauxite, limestone, dolomite, silver, quartz & gold.

## Dharwar rock system

6.5

- Formed between 1-4 billion years ago
- Formed from metamorphic process of Archean Gneissis.
- Consists of igneous debris, Gneiss & Schists.
- Found mainly in Dharwar district of Karnataka.
- Aravallis formed from this rocks.

Try to draw diagram at relevant places rather than drawing them at the end

Distribution : Dharwar district of Karnataka to Nilgiris in Tamil Nadu, Meghalaya plateau, Aravallis (Delhi range upto south of Alwar) to Nellore district of Andhra

Very good

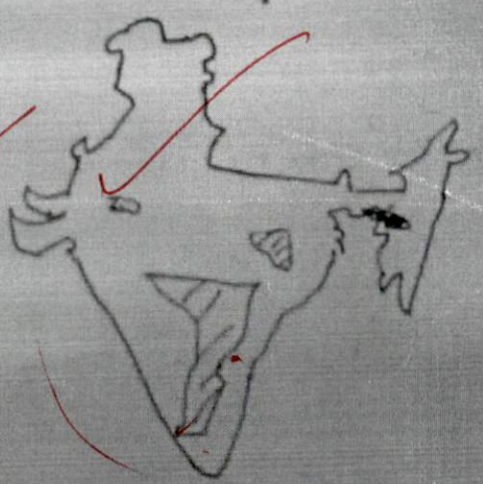

Fig: Archean rocks

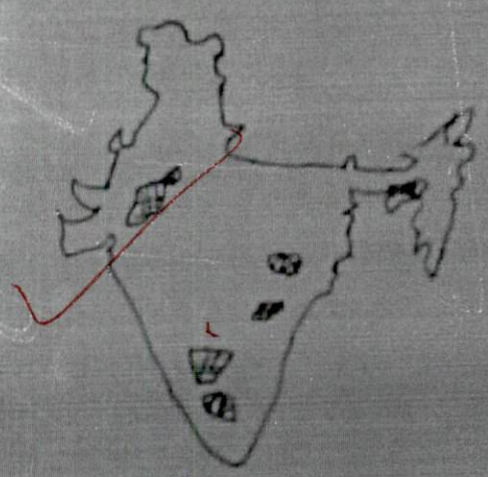

Fig: Dharwar rock system

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Q. (b)

Northern Plains :-

Great North Indian Plains extends from Indus basin to Brahmaputra. of total 3,200 km from west to east. In India, it extends 2,400 km. there are very fertile and supports extensive cultivation.

(Diagram should come here)

Following ~~are~~ the different views on the formation of Northern Plains.

1) Alluviation of foredeep by Edward Suess

According to E. Suess due to Himalayan orogeny, the foredeep is formed between Himalayas and peninsular Plateau. ~~Later~~, ~~This~~ This foredeep is irregular and undulating in the form of a syncline. (Diagram)

Later this foredeep is formed ~~by~~ is alluviated by the sediments brought by the

Remarks

rivers flowing southward slope of Himalayas and this process led to the formation of Northern plains.

2) Infiltration of the Rift valley by S. Bustard

According to S. Bustard, the rifty valley formed along the south of Himalayas. The North and South rift valley are the result of upward ~~shift~~ rise of Himalayas and Southern peninsular plateau respectively. Later, Due to the upliftment of Himalayas and sediments brought down by the Himalayas along its slope filled the rift valley led to formation of Northern plains.

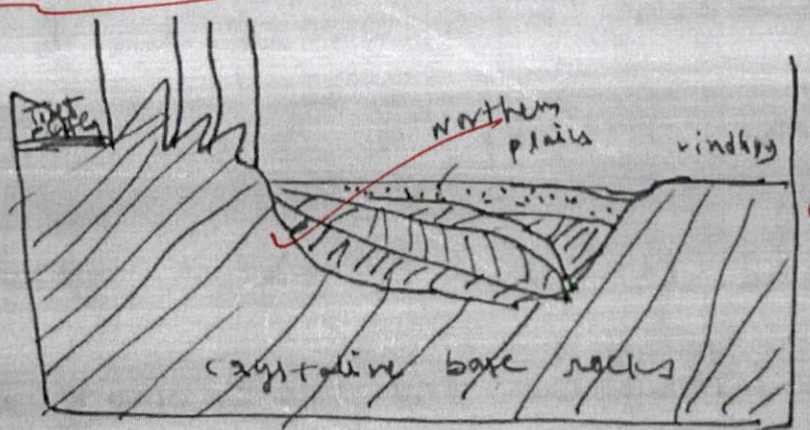



Fig: Northern plain

6/

Donot end your answer abruptly. give conclusion

Content is good

3) Remains of Teths After the formation of Siwaliks, the remained teths is forms like a Trough. this trough later filled by alluvial silt of Himalayan rivers and forms Northern plains

Q1(c)

## Cropping pattern

The cropping pattern refers to the area under different crops in a given period of time. It depends on Geo-climatic, socio-economic, cultural, govt. policies ~~etc~~. and various factors.

good

## Emerging ~~Pattern~~ problems of cropping pattern

1) **Mono culture**

- Due to government Sicweed minimum support price towards rice and wheat led to mono cultivation.

- Even in dry land areas due to its soil properties (supports mainly bajra, Ragi etc). mono culture prevaing.

~~ex~~ examples

2) **Ground water depletion**

Due to cultivation of water intensive crops in water stressed areas led to ground water depletion. Eg: Sugarcane in maharastra.

Give specific eg. Latur district of Maharashtra

3) Less Preference to pulses, oil seeds and crop rotation.

4) Less land under grass cultivation for livestock
e.g: Only 5% of land under grass cultivation.

5) Due to Rapid unplanned urbanization and Urban Sprawls led to agriculture land diversion and unplanned Horticulture practicing around those areas.

6) No practice of crop sequence

Points are bit general. Try to substantiate your arguments

explain this

Conclusion is missing

This diagram is not relevant in this question. Rather you could have drawn the issues of cropping pattern in different parts of India

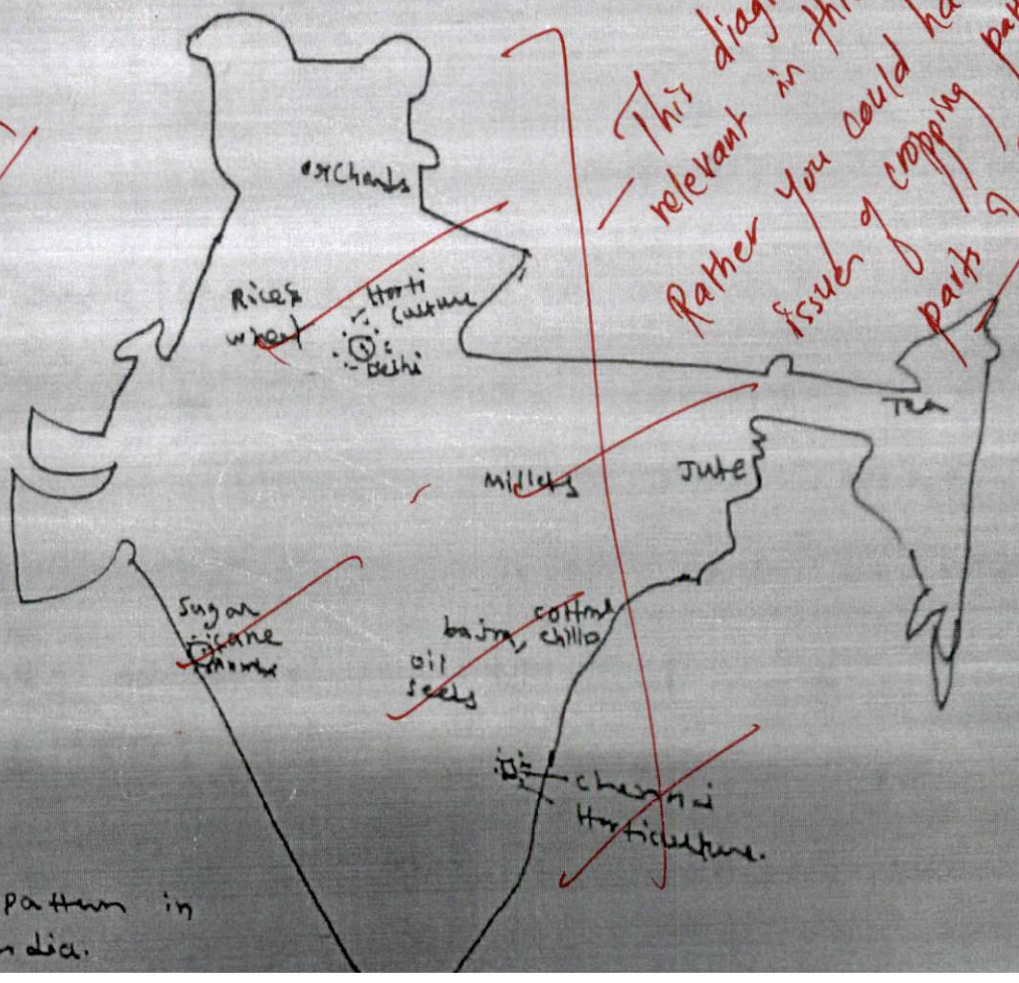



Fig: crop pattern in India.

Q1(d)

Clean energy refers to the energy sources which are not release Pollutant and Green house gases like sulpher, carbon, Nitrous oxide etc.

**Emerging sources of clean energy**

1) **Solar energy**

India has a target of 100 GW of solar energy production by 2022. In 2014, we have 2,650 MW of solar energy production but now, as of 31 March, 2019, we achieved 28.81 GW. i.e, 8 fold increase.

Government supporting this sector through different initiatives:

1) National solar mission
2) Rooftop solar production through Grid.
3) 100% FDI allowed in solar manufacturing
4) Establishment of solar Park Eg: Kurnool in Andhra pradesh recently started Operations.
5) 25% credit concession facilities.
6) Solar mitra for skill development etc.

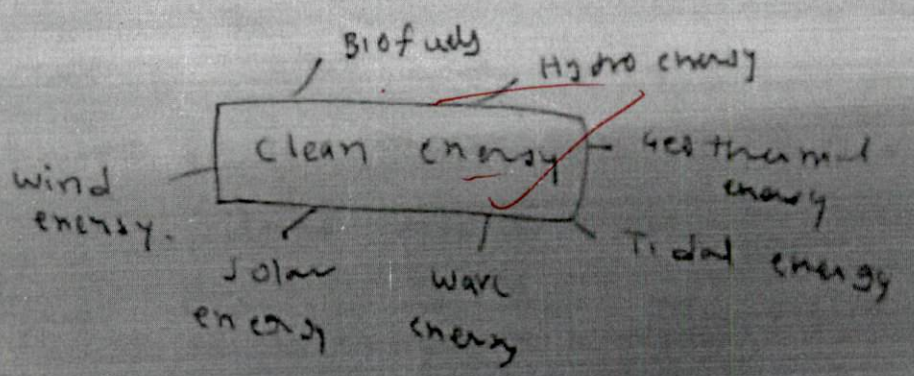
But this sector facing problems of low manufacturing base, high import dependence on solar manufacturing equipment (92.11%) etc.

2) **Wind Energy** wind energy already have a share of 10% in total renewable. According to ministry of renewable energy, India have the potential of 302 GW of wind energy. specially, Gujarat, Tamil nadu, Andhra have highly potential states. But these sector facing problems of land availabilty, Harm to birds etc. To overcome this now government focusing in Off-shore wind Production.

Elaborate in more dimension

3) **Bio-fuels** with National bio-fuel policy, government of India came with the target of 20% blending with petrol and 5% with diesel by 2030. Made balance to food security and bio-fuel production through focusing on Advance bio-fuel in the policy.

4



Q1 (e).

Middle Himalayas

Always give some introduction

- ~~These are also called as Lesser Himalayas~~ or Greater Himalayas or Himadri

They are aka Lesser Himalayas or Himachal

- Average elevation is 6,100 m and width varies from 25 to 30 km and extends 2400 km from east to west.

avg altitude varies betn 1000 to 4500 m

Avg width = 50 km

- the Northern slops are gentle and southern slopes are steep. (Hogback topography)

- Syntaxial Bends : In its west and east extremes it bends southwards sharply.
western end : Nanga Parbat
Eastern end : Namcha Barwa.

You writing about Greater Himalaya

→ major peaks in the Range.

ML. Everest (8,848 m) in Nepal, K2 (8,611) ~~Kanc~~ in Jammu and Kashmir, Kanchenjunga in Sikkim, Makalu & Annapurna in Nepal, Kamet in Uttarakhand.

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→ Major passes :

- Jammu and Kashmir : Zoji La and Burzil La
- Himachal Pradesh : Shipki La
- Uttarakhand : Niti La, Lipu Lake and Thang La
- Sikkim : Nitu La
- Arunachal pradesh : Bomdi La

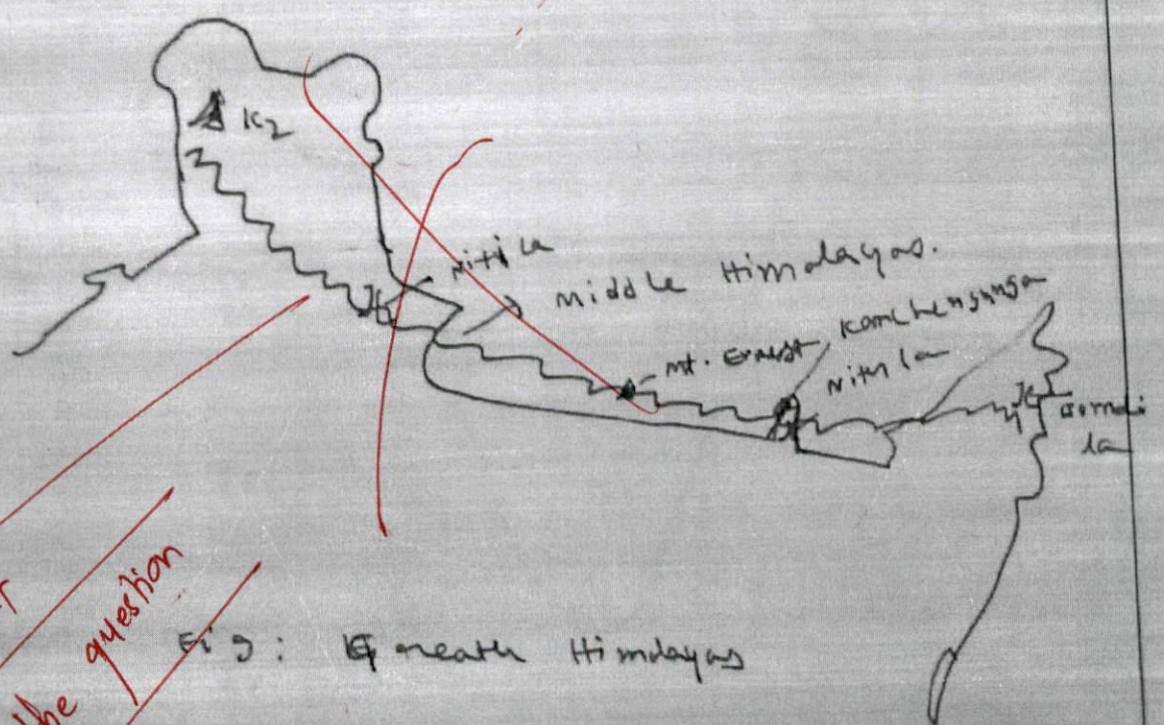



Fig : Greater Himalayas

0/

Out of context
You misread the question

2. Answer the following questions:

(a) Recently Aravali was in the news because of vanishing lakes. Discuss the causes of their disappearance and suggest the appropriate solutions. (250 Words) (20)

(b) Discuss the application of geospatial technology for monitoring natural resources in India. (200 Words) (15)

(c) Discuss the impact of climate change on agricultural productivity and farm revenue. Also, discuss its implications on agricultural performance in the long run. (200 Words) (15)

Aravalis

Aravallis are oldest fold mountains in India. Extending in North east to South west direction from Delhi to Palanpur in Gujarat. It covers Southern Haryana, Delhi, Rajastan, Northern Gujarat (692 km).

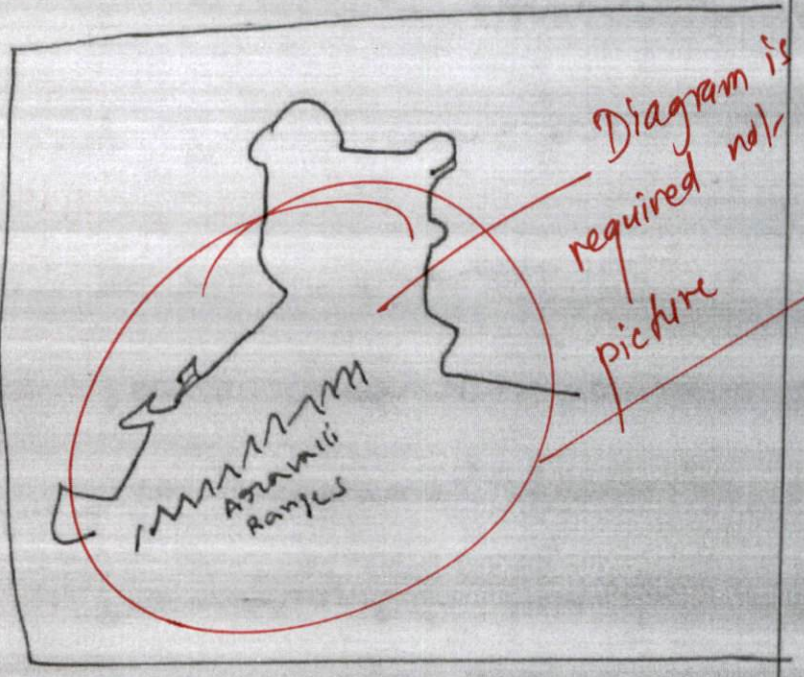



Diagram is required not picture

Recently, Aravallis are in news due to increasing human impact on mountain ranges and vanishing lakes.

## Causes

1) **Illegal mining**

Due to unregular illegal mining of granite (Bhindwala, Udaipur, Ajmeer), sandstone and marble the fragile ecosystem getting distrubed

2) over grazing and faulty agricultural practices.

give examples

3) Agriculture :- Due to Green revolution, water intensive crops like rice, wheat etc. started farming already water stressed regions of Aravallis.

4) Introduction of invasive species like prosolis Jelifora, caused threat to ecosystem stability.

good

Also explain in what way it is disturbing the ecosystem

5) Aravallis comes under National

conservation zone in National capital Delhi plan - 2021. But, it not properly implemented due to real estate boom and manipulations.

6) Rapid Industralization and unplanned urbanization led to human encroachments in lakes.

This point is too general

Solution

- Strictly regulate the mining activites and take stringent action against illegal mining.

Very general point

- Agriculture should be practiced in the 'more crop per drop' approach and less water needed and area suitable crops.

- Improve natural pastures through social forestry initiatives.

- control Industrialization to establish in sensitive zones and ban on existing one.
- Use technology like remote sensing and Geo spatial technology to monitor Aravallis.

8/

Aravallis are significant for limiting Thar desert and dust storms to extend to eastern part of it and providing ground water recharge to it surrounding area, hence need above measures to protects aravallis and its lake ecosystem

Recently Aravalis was in news because of degradation of Damdama & Badhkhal lakes. Also desertification due to cutting of Aravalis has resulted into intrusion of sand in regions of Haryana & other fertile lands

You have not drawn any proper diagram as well

Q 2(b)

## Geo spatial technology [4

It is a computer based tool and it visualize, Analyze, Store and use the data, usually in the form of a maps.

good

By using this tool, we can Analyse the data/image of any area collected through Remote sensing, high-resolution cameras, etc. and can store the same and utilize when ever needed. It helps to better management of natural resources in the following way.

1) **Mineral resources**

The data/image of any mineral region can be analyzed by using Geospatial technology. Through this, we get to know, the mineral composition, what level we can mine that area further etc. Hence, helps in sustainable mining

2) Urban land use management

By using geospatial technology, we can analyse the urban land area to better planning like water management, traffic management, solid waste management, road widening etc.

3) Agricultural land use management

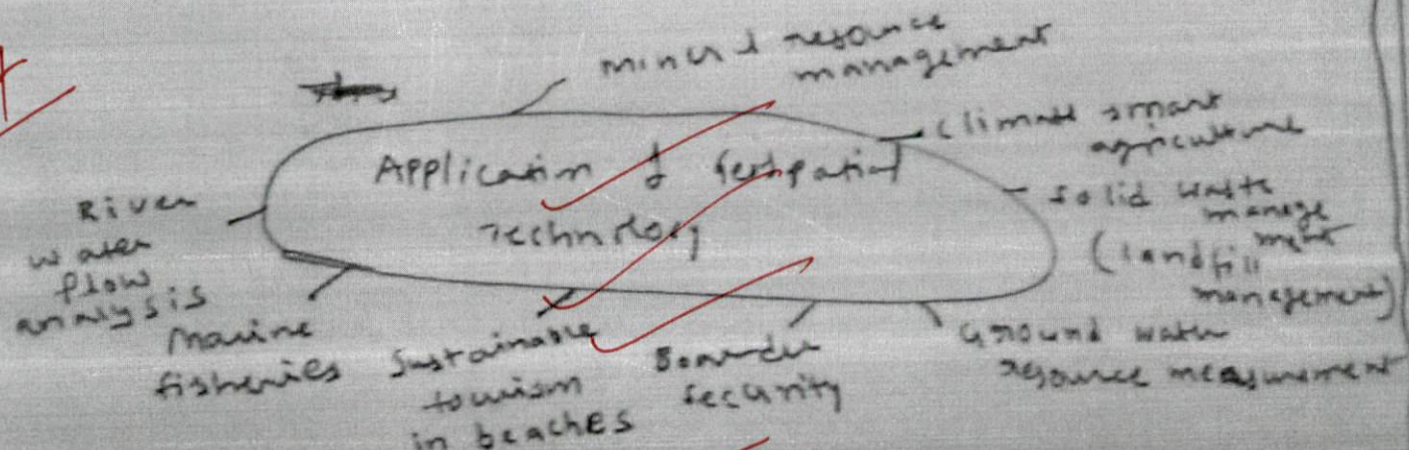
4) coastal zone management

5) Boarder Area Development and security management

6) Infrastrure Development Projects.

Elaborate your arguments

7




Thus, Geospatial technology is one of the vital tool to sustainably use natural resources and balance resource use in the era of consumption.

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Q 2(a)

climate change due to global warming lead to temperature increase and erratic rainfall causing negative effects on Agricultural productivity and farm income.

- ~~Indian~~ agri
- Monsoon is the backbone of the Indian agriculture and economy. Due to climate change global phenomena like El-Nino and decrease in temperature differences between ~~and~~ land and sea cause monsoon failure. It decreases agricultural productivity & farm income.
- Increase in temperatures causing higher temperatures in seas, cyclone formation even in march & April, damages to crops in coastal Areas and post-harvest losses.

Need to dependant on warehouses. Hence, farmers income decreases.

- Melting of Glaciers increases river flow, causing floods and the same time continued droughts in dry lands. Both causing harm crops and decreasing agriculture Productivity.

Point again are very general

- Ground water level diminishing, climate change also one of the main reason. Leading to drilling more borewells to high depths and more electricity use. Leading decrease of farmers income.

6.5

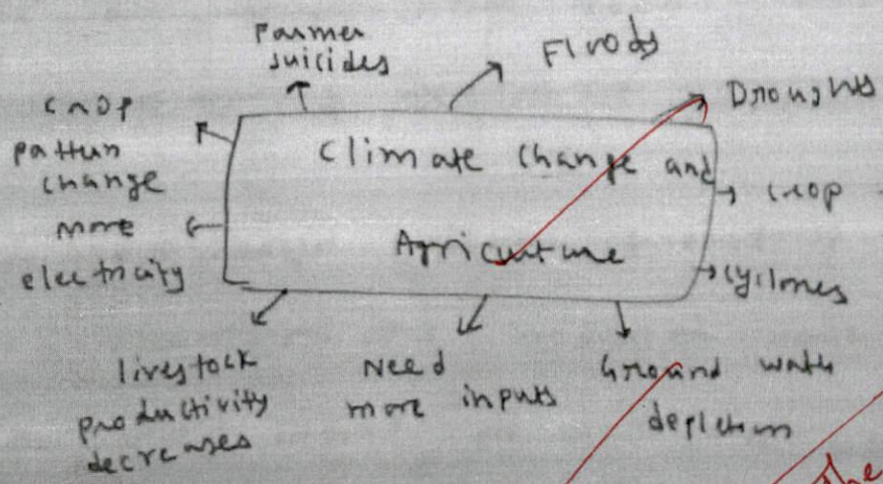



Fig: climate change impact on Agriculture

The problem with your answer is you are not giving any examples or case studies etc

- Live stock need to change its metabolism to changing climate & decreases its productivity.

* Implication on agriculture in long run

- Change in crop pattern
- Prevent Health problems to livestock and deaths.
- Ground water depletion and reaches critical level.
- More inputs needed but less productivity
- More barren lands

Vague

Hence, to counter these negative implication climate smart agriculture and precision agriculture should follow.

## SECTION-B

Attempt all questions:

5. Comment on the following into 150 words: (10 × 5 = 50)

(a) Discuss the mitigation strategies against the tropical cyclone in India.

(b) Koeppen's Classification of Climatic Regions of India

(c) Discuss the gender specific interventions in agriculture taken by India.

(d) Discuss the Jet Stream and Kootishwaram theory of Monsoon.

(e) Discuss the challenges in agriculture of the north-east region of India and suggest some measures.

Q5(a).

Tropical cyclones are low pressure circulations in tropical oceans. India is more prone to these tropical cyclones of Bay of Bengal and ~~Arabian~~ Arabian Sea.

* Mitigation strategies

- construct vertical shelter houses with cyclone prone to Rehabiliate people in quick manner.

- Use the technology like wake-tockies at the time cyclones because other communication devices may not work that time.

- Effective prediction system development → Vague

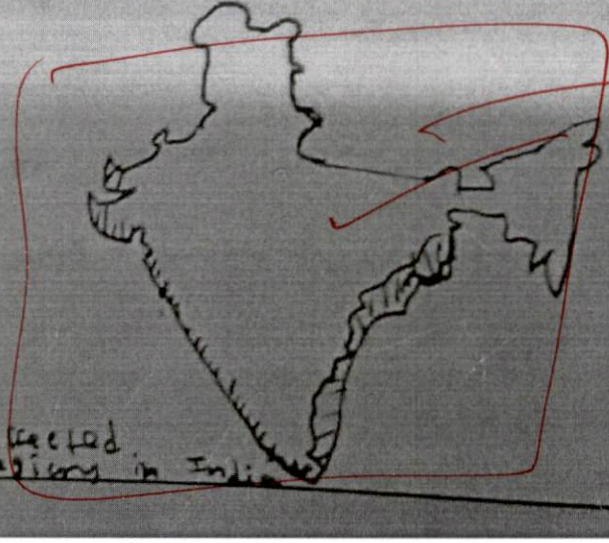
- Mock Preparation drills in ~~coastal~~ cyclone effected regions → example?

- Agriculture crops, cultivation should be, water logged tolerant crops. → Vague

- Andhra pradesh model digital wall monitring connecting root level officers and free to higher level officers to communicate in quick manner.

3.

cyclones are natural but without effective measures lead to disasters. Hence, need effective mitigative measures.



Not relevant here

fig: cyclone effected regions in India

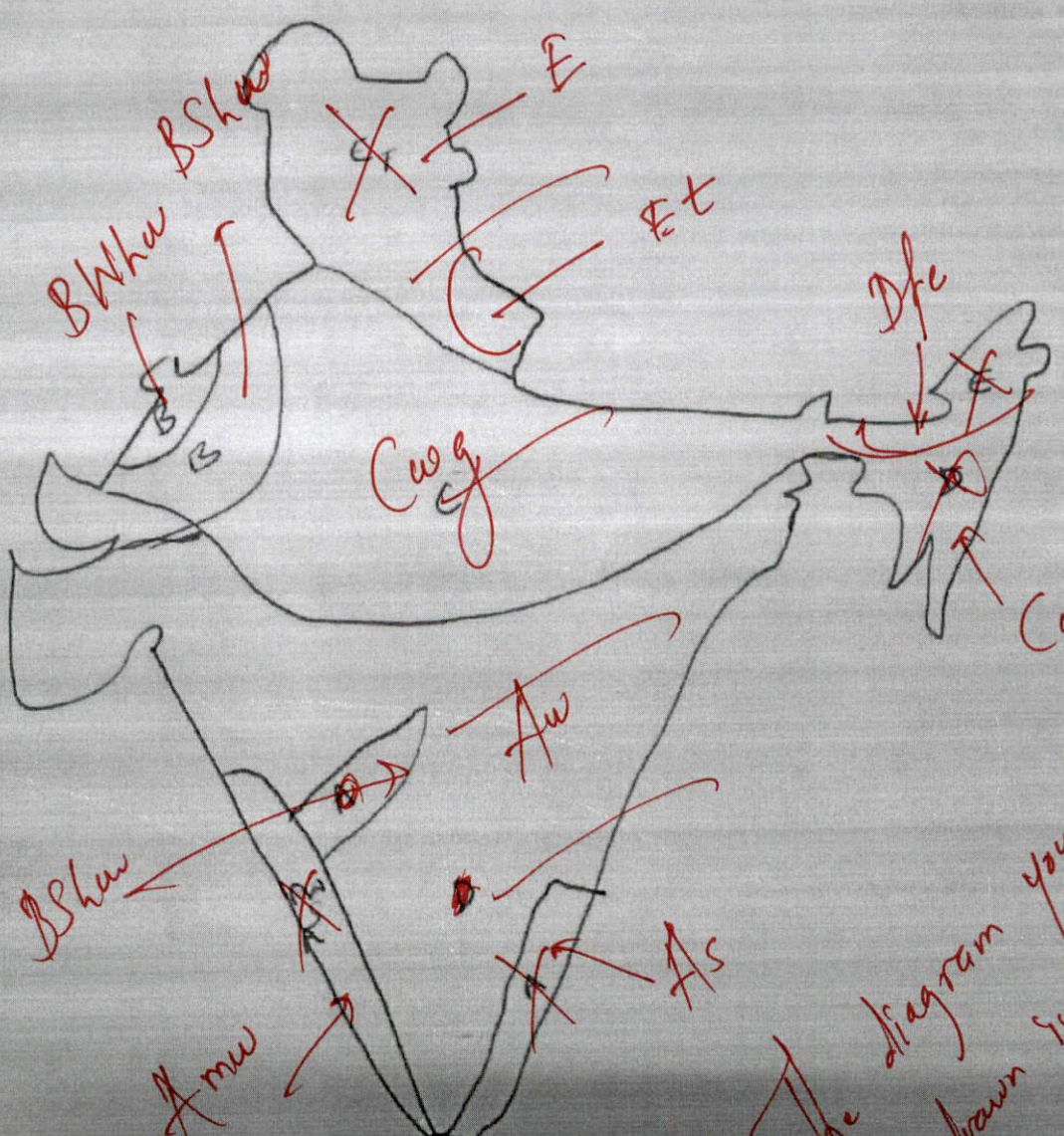
Remarks

1 (b)

~~Koeppen~~ ~~dtai~~

According Koeppen, Indian climates regions can be divided into 9 types based on temperature and rainfall variability.

0




The diagram you have drawn is wrong

Fig: Koppen climate regions of India

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Q5(c)

According to Agriculture census 2015-2016, (10th census), women share in land ownership increased from 12.87% to 13.79%. Government also taken measures in the direction of supporting women farmers.

- Less interest loans to women farmers especially through self-help group - linkage programme.
- Declaring October 15 as women farmers day.
- Proving skill development to women farmers in livestock rearing.
- Focusing on women friendly agricultural mechanisation.
- Encourage women to land titles.
- conducting workshops for women in rural areas about new techniques in farming especially in dry land farming areas.

Too general

2/

5(d)

Jet Stream and Koteswaram theory of monsoon

In winter, the tropical westerly Jet stream extends upto 20° N (Nasim, Raisad) lattitude ~~due~~ and this Jet stream bifurcated into two, one is in the north of Tibet and another one is south of Himalayas. the high pressure and anti-cyclone conditions prevail over Afghanistan and ~~Afghan~~ Pakistan. That cause subsiding of air and stable conditions on the northern ~~ne~~ India.

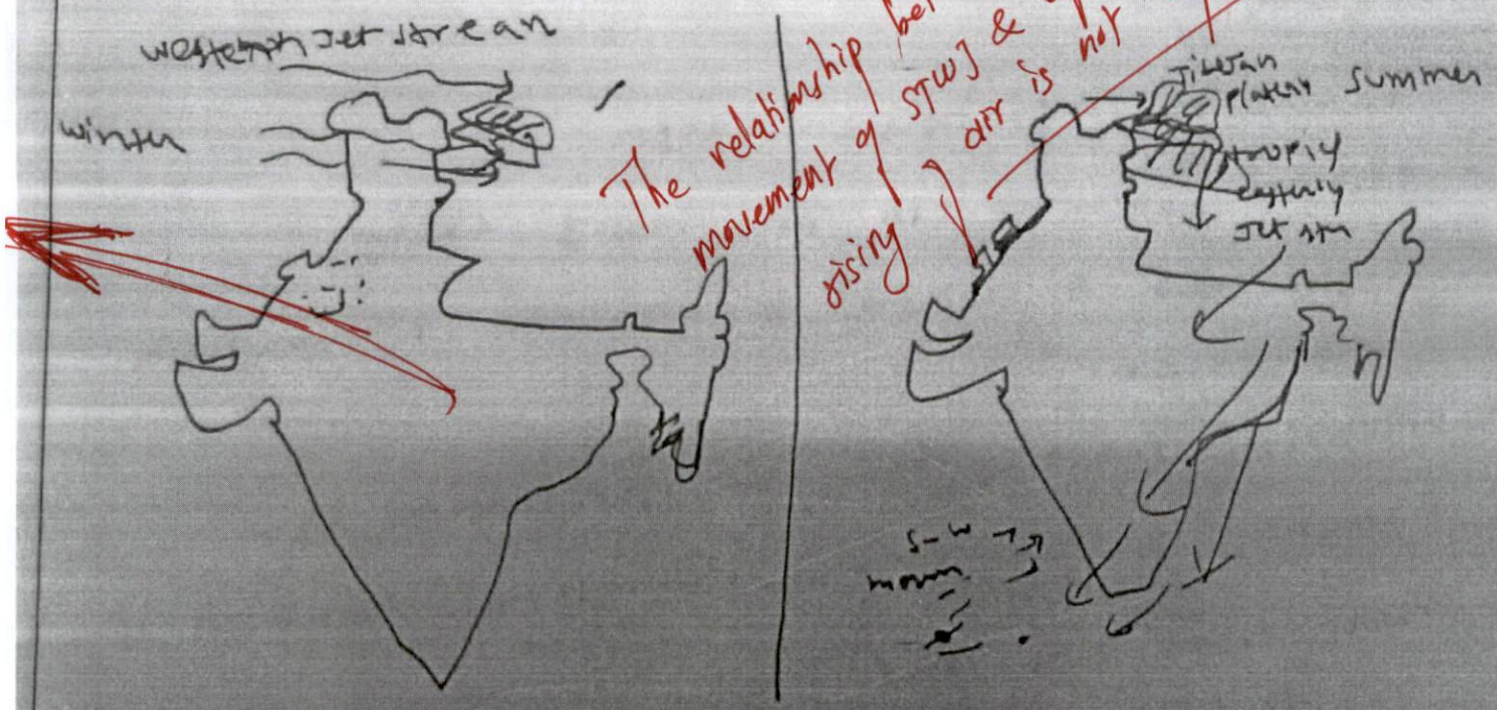
Diagram

But, In summer, ~~To~~ Due to shifting of sun to northwards, the Southern branch of western Jet stream disappears and here Koteswaram explained

that the Tibetan plateau play crucial role. Due to heating of Tibetan plateau, the air rises upwards. The ~~east~~ western jet stream, due to coriolis force, turn to eastwards form sub-tropical easterly jet stream and extends as Kolkatta - Bangalore axis. This esterly jet stream after reaching south of equator, intensifies already high pressure massarene high to move towards India as south west monsoon.

5

The relationship betn northward movement of STWJ & upward rising air is not explained



Q5(c) In North eastern region 70% of people enaged in agriculture but only it contributes 1.5% of food production.

**Problems of Agriculture in N-E**

- Rugged and hilly topography
- lack of connectivity & timely transportation facilities.
- Frequent floods
- Low soil fertility
- Shifting cultivation
- Primitive practices
- Lack of credit facilities and Lack of timely availability of inputs.

Explain your point

2

**Measures**

- Focus on Horticulture crops
- organic farming (in the lines of Sikkim)
- Cluster based Agriculture to overcome transportation bottle necks
- Diversify practices like silk, apiculture etc.
- Branding of N-E products in national markets
- Skill development and timely credit facility improvement.

6. Answer the following questions:

(a) Give an account of energy resources in the country. Comment on the need for developing and harnessing alternative energy sources support with appropriate arguments. (250 Words) (20)

(b) What are minor forest produce? Discuss their significance to rural and tribal economy. (200 Words) (15)

(c) Discuss the importance of animal husbandry and also discuss socio-economic and environmental aspect of animal husbandry in India. (200 Words) (15)

Q 6 (a). Energy resources are vital for economic growth and overall human development. Energy resources are majorly 2 types:

Conventional and Non-conventional

- Coal
- Petroleum
  - Crude oil
  - Natural gas

- Solar
- Wind
- Tidal
- Wave
- Geo-thermal
- bio-energy

A Conventional Energy resources in India

1) Coal

- Jharkhand: total resures - 29%

  major coal fields: Jharia, Bokaro, Palamu, Dhanbad.

- Odissa: Total reserves - 24% and share in production 15%

  Major coal fields: Talcher

- Chattisgarh: total reserves: 18%, Major field: Korba
- Madhya pradesh: major field: Usmara, Singrauli
- west Bengal: Raniganj (11%)

~~Udgati~~ Andhra pradesh & Telangana : (7%). Singareni, Kothagudem.

Lignite reserves :- Neyveli in Tamil nadu, Palana in Rajasthan, kutch region in Gujarat and Nuachaon in Jammu and Kashmir.

2) Petroleum

→ Maharastra / Western offshore oil fields

- Bomba High : 65% crude oil production of the country and produces Natural gas also.

- Aliabet

This you could have shown in diagramatic form as well

→ Gujarat : 14% of crude oil production (Kosna oil fields located in vadodara)

- Ankaleswar
- Khambat region.

→ Assam : Nahamati and Nahalgarh

→ Eastern off-shore oil fields :- Krishna - Godavari basin.

Major Natural gas production in India.

Q1) Non - conventional energy resources

1) Solar energy

- Achieved 8 times production growth from 2014 (2,650 MW) to 28.81 GW in 31st march, 2019.

- Target 100 GW by 2022.

Huge potential due to presence of tropical region and almost all states receive reasonable amount of sun light.

8

2) Wind energy

- Target of 60 GW by 2022. Already producing 33 GW. Gujarat, Andhra and Tamil nadu are leading states. Government focusing on Off-shore wind energy production.

3) Bio-energy

Through National Biofuel policy, Government targeted to 20% ethanol blending in Petrol and 5% in diesel by 2030. Focusing on '2G' bio-fuels to eliminate food security issues with first generation biofuels

4) **Hydro - energy**

Recently, government included Hydro projects more 25 MW also into Renewable energy source to improve credit facilities to the projects. In Hydro - energy share is 13% in total energy production.

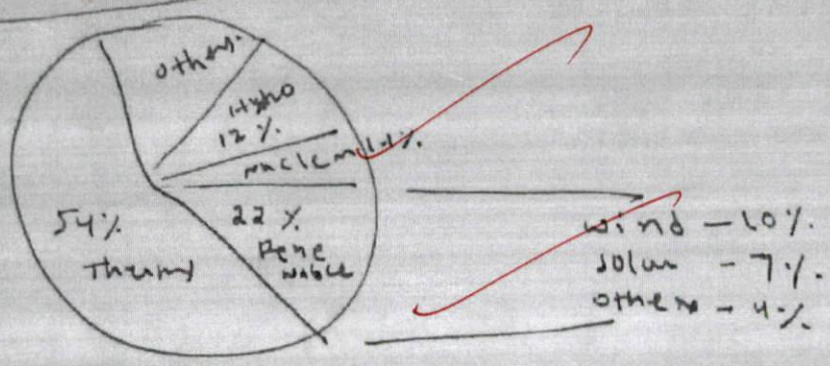



Fig: Energy share of different resources

☆ **Need for Alternative sources**

- conventional sources for fossil based and Non-renewable
- coal & petroleum energy sources are creating pollutants
- Air pollution
- Health problems

∴ There is need of Alternative clean and Renewable sources of energy.

You need to add some concrete point with good example

Q.6.(b).

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## Minor forest products

These are the forest products by Producing and using not cause any harm to the forest ecology. Eg: Honey, Tendu leaves, some medical plants etc.

According to Traditional forest Dweller Act, MFP is all non-timber forest produce

## Significance to Rural and Tribal economy

- Provides Basic livelihood opportunities to the Rural and tribal people.
- Provides employment.
- Creates new markets to the products
- ~~Helps~~ Helps in Infrastructure development.
- ~~Act~~ ~~has~~ Tribals ~~income~~ by collecting the minor forest product can act as security to the illegal smuggling in major forest produce

General point

- In Rural Areas, Agro - forestry and social forestry will develop.

- In Rural Areas especially Rain fed areas, these minor forest products act as a security in crop failure and erratic monsoon

- Agro - forestry helps to improve agricultural production.

- Minor forest products dependent tribal protects and promotes the forest ecology.

4/ Hence, Minor forest product in broader way help in Tribal and rural economy. Hence, there is need to provide incentives like marketing facilities, value addition facilities, credit availability and skill development etc.

Q.6 (c)

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## Animal Husbandary :-

It refers to the rearing of animals like cattle, buffallo, chicken, sheep, goats, pigs, rabbits etc. to get benefits from their products.

### Important of Animal husbandry

- Alternative income
- Inputs to agriculture
- Women empowerment
- Employment Provider
- Social status and social security
- Food and nutritional security etc.

Elaborate your argument

### Socio - Economic Aspects

**Positive :-**

- Livestock sector Provide 4.15% of GDP share and 25% of agricultural GDP share.
- Providing 16% of agricultural employment
- 2/3rd of total force in animal rearing are women. this provides opportunity of decision-making

power to women.

- Act has security to market fluctuations and monsoon failures.

~~- Provides manures to Agri~~

- Provides food security. Per capita availability of milk in India: 359 grams/day

Negative -

- maintaing livestock in drought situation is an extra-burden to already stressed farmer especially in dry land regions.
- Lack of market connectivity to livestock products hindering the value extration from them
- Super Bug problems in poultry farming etc.

* Environmental Aspect

+ve

- Helps in providing manure to agriculture soil fertility ~~improve~~ improvement. Hence, less dependent on chemical fertilizers.

- Helps in organic farming and zero budget natural farming

-ve

- Releases methane and nitrous oxide, mainly because of enteric fermentation
- overgrazing leading to deforestation.

5/ Animal rearing provides extensive opportunities. Hence, we need to focus on improving veterinary health services, value addition and credit facilities etc. to realise its full potential.

Again data, fact, diagram are missing

7. Answer the following questions:

(a) What are dry ~~the~~ the regions of India? How do the physical and human factors intervene to create the unique conditions of poverty and deprivation in these areas? (250 Words) (20)

(b) Agriculture in North-East India provides livelihood support to 70% of the region's population still it produces only 1.5% of the country's food grain production. Discuss reasons and suggest measures. (200 Words) (15)

(c) Critically analyze the overall change in cropping pattern in India post green revolution era. (200 Words) (15)

7(a)

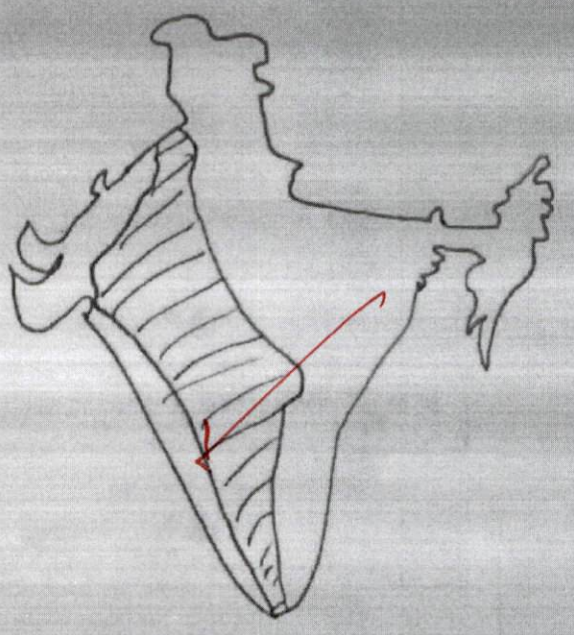
Dry Regions / Dry land Region

Dry land Regions are areas where rainfall is ~~[illegible]~~ less than 75 cm and low irrigation facilities.

Dry land Region of India

- Areas East of Thar Desert and west of Aravalis
- Part of Haryan and Punjab
- South-eastern Gujarat
- Rain shadow regions of western ghats i.e, parts of Maharashtra, Karnataka
- Telangana and Kadapa and Kurnool Regions of Rayalaseema in Telangana
- Parts of Tamil Nadu (extends upto Kanya Kumari)

In the Dry land regions, the farmers are facing extreme poverty, land degradation, low productivity. Farmer suicides are prevalent phenomena in these Reasons. Both physical and human factors are reasons for this situation



Dry land Regions of India.

* **Physical Factors**

- Dry land regions are in irregular, uncertain rainfall ~~reason~~ Areas. Frequent monsoon failures causing continuation drought conditions and crop failure.

Substantiate your argument with relevant data

- the soils here are low fertile and drainage pattern is poor. It leads to low productivity and if irrigation facilities available it may led to water logging and salinity.

- poor availability of natural pastures causing livestock rearing is unsustainable.
- crop diversification is not possible because land can't support varied crops.

* Human factors

- Due to land/soil constraints, mono-culture is practicising. It further leading to land degradation.
- Due to cultivation of same crops by farmers, they unable to get remunerative returns ~~due~~ ~~to~~ because of over supply.
- Farmers incapacity to invest in allied activities like livestock farming
- Government skewed policy towards irrigated areas like MSP to rice & wheat, HYV seeds and green revolution etc. and lack of dry land specific policies etc.

9.5

To overcome this situation innovative farming techniques like SWAR farming (System of water for Agriculture rejuvenation) should practice along with livestock farming and Government should [illegible] dry land specific schemes.

North - Eastern India with 8% of total country's land area and 10% of population engaged in agriculture still produce 1.5% of food grain production.

Reasons for this are :

**Geographical factors**

- soils are not much fertile [Red and yellow soils]
- Frequent floods [As seen in Assam]
- Undulating topography [mostly mountaneous regions]
- Only 3 months intensified monsoon rainfall.

**Infrastructural factors**

- poor connectivity
- Lack of timely transportation facilities
- Lack of timely formal credit facilities.
- poor markets and price informations to the cultivators.

* **Human factors**

- Lack of skilled people to intensively cultivate land.
- Still prevalent of shifting cultivation.
- Importance to subsistence farming than commercial farming.

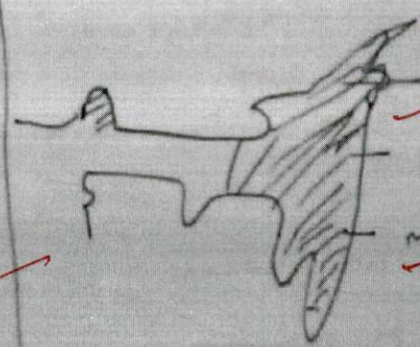
**Others**

7.5

- threats to ~~protection~~ of crops from wildlife
- Boarder states: security problems.
- People involving part time cultivation and involving other activities [E.g. Illegal coal mining in Meghalaya]

**Measures needed**

- Focus on Horticulture crops. which need less investment and remunerative prices. Government through Horticulture



Total land area: 8%. in India
People under agriculture: 70%
Major agricultural practices: Tea, sericulture, Horticulture, rice, wheat, pulses etc.

mission in North East", promoting this sector.

- Improve connectivity and transportation facilities.
- Establish food processing industries near to agriculture fields.
- cluster based farming practices
- Use of information and technology to improve skills of farmers and to educate them.
- Focus on organic farming on the lines of Sikkim and provide National and International marketing & branding to these products
- Investing in infrastructure to mitigate floods.
- Innovative methods like Hill farming along Slopes
- Use of Agricultural college students to educate on new farming techniques
- control shifting cultivation.

These all measures helps to improve farmers income and encourage food security in NE regions.

Q 1 (c)

## Cropping pattern

It refers to the area under different crops in given period of time.

In the pre - Green revolution, ~~due to~~ the cropping pattern slowly changing because the negative effects from Green revolution like mono cropping, Soil degradation, waterlogging etc.

## Present cropping patterns

- In Maharashtra, Farmers slowly moving away from Sugar cane production. Government support this through "Beyond sugarcane" policy.
- Due to urbanization, the agricultural lands around urban areas increased practice of vegetables and fruit production along with grass cultivation for cattle.

- In Rainfed areas, the farming of pulses like millet, bajra, Ragi etc. and oil seeds increased. Government also supporting this by increasing minimum support price to pulses
- The area under organic farming is increasing E.g. Sikkim.
- Zero-budget natural farming also got more support in Andhra and Karnataka.
- In Andhrapradesh, Guntur, East Godavari and Prakasam districts farmers are moving from Tobacco to millets farming

7.5

- In Bihar, millets farming increased due to markets availability.
- In Punjab and Haryana Regions land under wheat and millets increasing and Horticulture also practising widely.