

**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.

98

1. Invigilator's Signature \_\_\_\_\_

2. Invigilator's Signature \_\_\_\_\_

Rohit Lodha

Name KUNAL SHROTE

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

Date \_\_\_\_\_

Signature \_\_\_\_\_

**REMARKS****GS SCORE**

SECTION-A

Attempt all questions:

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

- (a) Influence of demographic factors on population distribution.
- (b) Scope and challenges in fish processing industry in India.
- (c) What is National Agriculture Market (NAM)? What precautions need to be taken for successful implementation of NAM?
- (d) Scope and significance of food processing industry in India. Also discuss the challenges of this industry.
- (e) Discuss the urban sprawls in India.

(a) Demographic factors refer to age, sex of the population. It has following influence.

*Narrow definition*

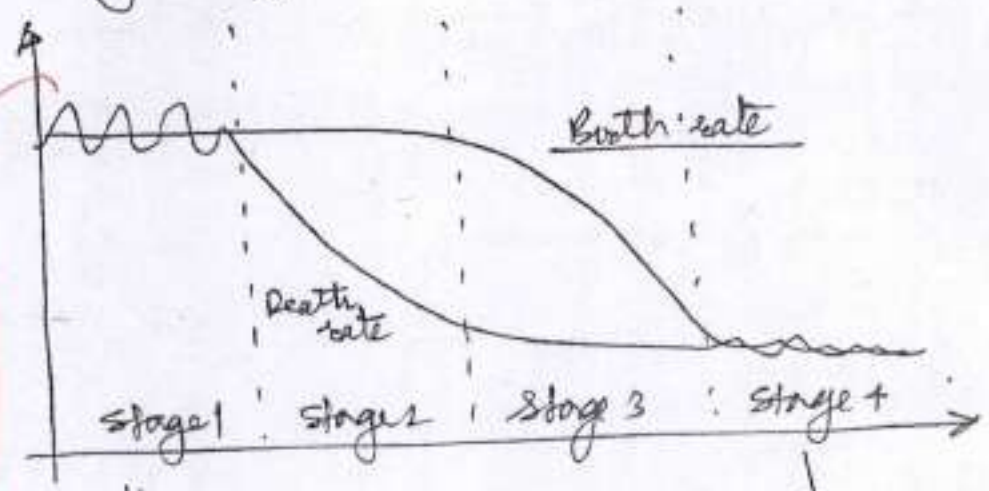
**2.5**

According to Demographic Transition Theory of Thomson, countries in different stages have different distribution of population. However, major population distribution is the function

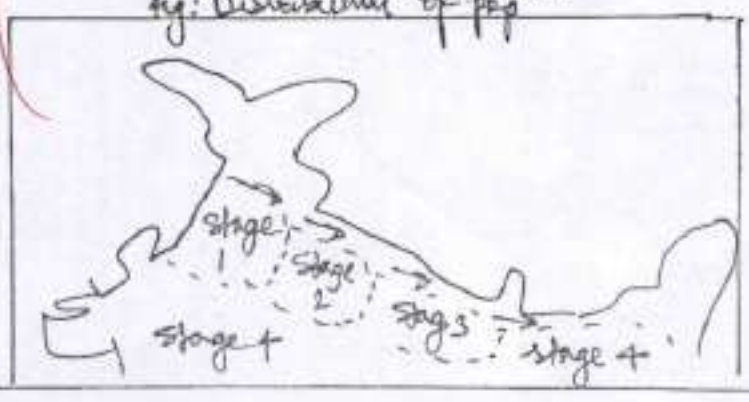
Remarks

of birth rate, death rate and most importantly migration

*Emphasis on these factors with example. Not required.*



- primitive
  - population clustered
  - living in tribes
  - living in agriculture such areas/forest
- modern concept
  - low
  - population dispersed.
  - people dependent on secondary and tertiary

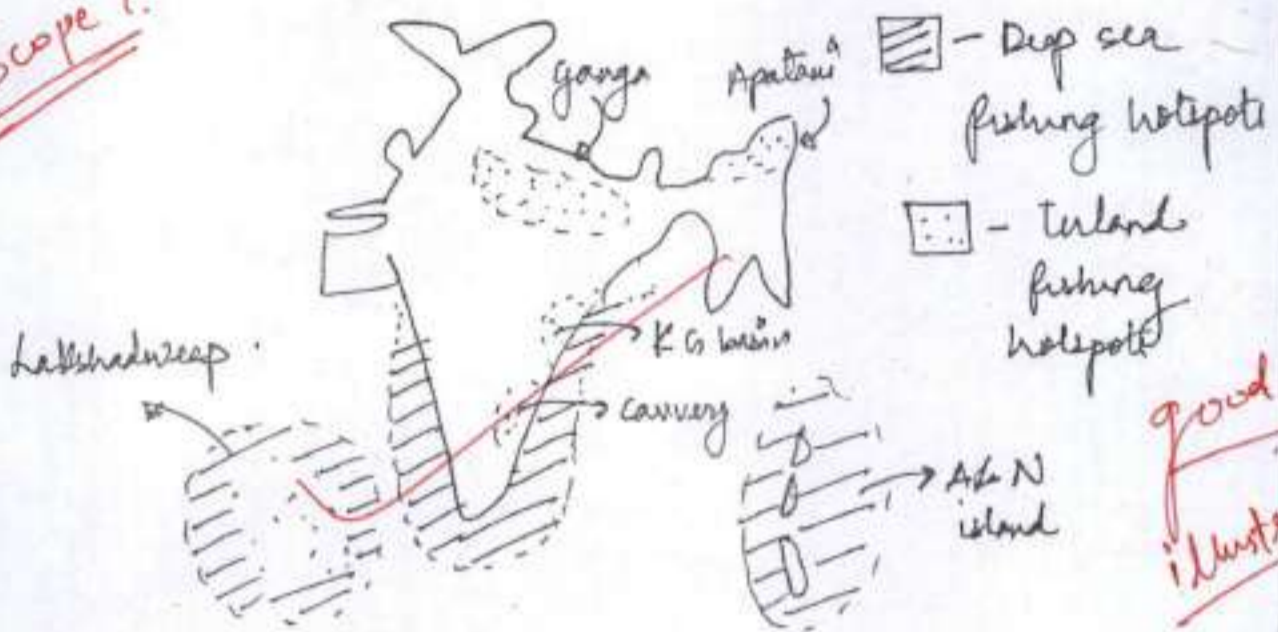


Remarks

② India has coastline of 7500 Km. ~~Major~~  
inland water drainage of 15000 Km. Tramendous  
potential for deep sea fishing, inland sweet  
water fishing ✓

3.5

Scope?



Good illustration

Challenges:-

- fish processing and preservation not effective.  
 i.e. lack of cold storage in fishing vessels ✓

Remarks

Add more points  
 Complicated like:  
 exporting procedures  
 - high Operational cost.  
 Can Add suggestions

- Improper branding and marketing of processed fish product

- disputes with neighbouring country like Sri Lanka, Mauritius, Bangladesh etc.

- Lack of private sector investment in commercial fishing and processing

- Formalin (cancer causing) used to store fish → Sanitary and phyto sanitary business

④ National Agriculture Market is the platform for integration all local level mandis into a single nation wide agricultural market.

Remarks

Precautions

- Agriculture is state subject. States need to be convinced for adoption
- proper infrastructure like weighin scale, storage facility, grading facility at each APMC
- proper IT services to make markets online and easily accessible
- breaking the monopoly and modernization of tenders and providing single national licensing licence
- encouraging etc encouraging private sector investment in upgrading APMC

Add  
 → removing interstate transfer barriers  
 → including fruits and vegetables to reduce the volatility etc

Remarks

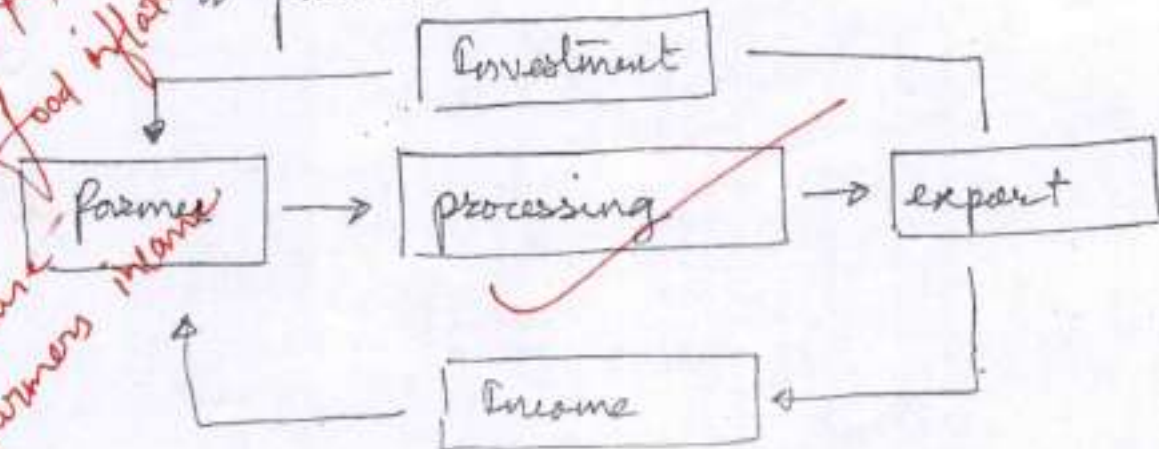
(d) 20-30% of horticulture perishable produce is wasted due to unavailability of food processing industry [Down to Earth]

Scope :- Indian processed food consist of less than 1% of global food trade

17% of total food produced, is produced in India

Significance : creating backward and forward linkage provide significant returns

4.5  
 + India's position as major food producer  
 → Add: → ↑ employment → curb food inflation → increase farmers income



Remarks

farmers become part of both investment and income cycle. life of poor farmer significantly changes.

challenges:

- Land acquisition in setting up Mega food parks under SAMPADA scheme
- Sanitary and phytosanitary measures creating non tariff barriers.
- farmers not aware of future and commodity markets, FPO could not establish link with farmers.

Lack of Skilled workforce, Storage facilities, Transportation etc.

② Urban sprawl is the outgrowth of a urban place due to expansion of

4

Remarks

commercial and business activity of main city.

Unlike conurbation of Patrick Gedder, urban sprawl does not form its independent central Business District. It still depends

on main city for economic activity

Add more examples:-  
Pune, Ahmedabad, Dewankali (Bangalore) etc.

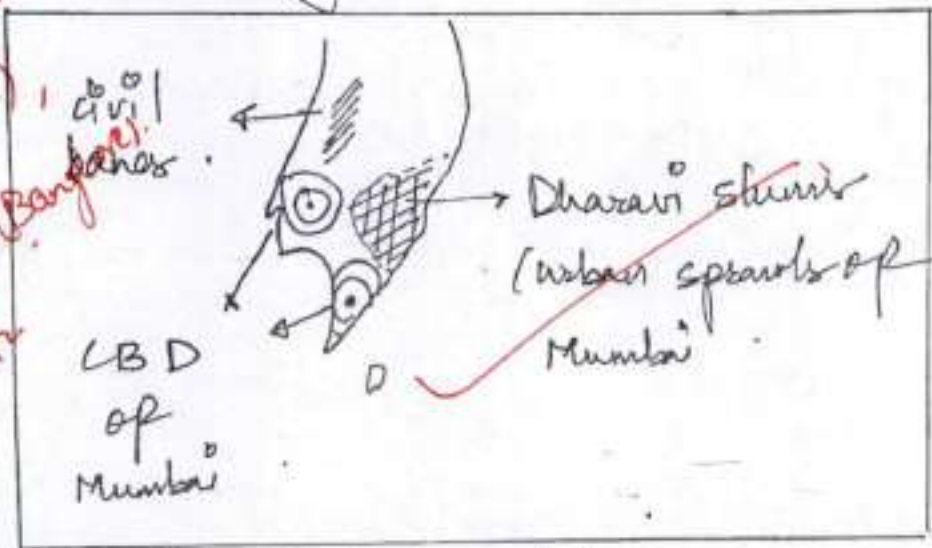
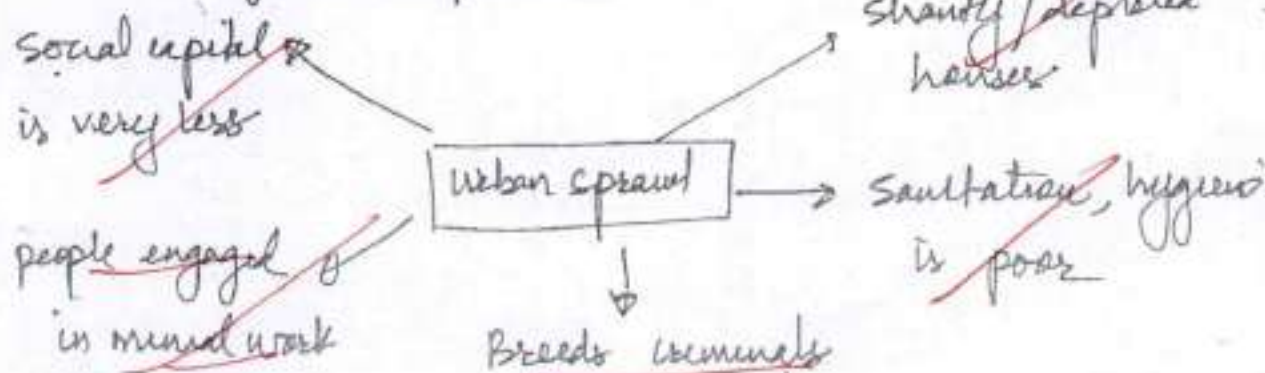


Fig: Island of Mumbai



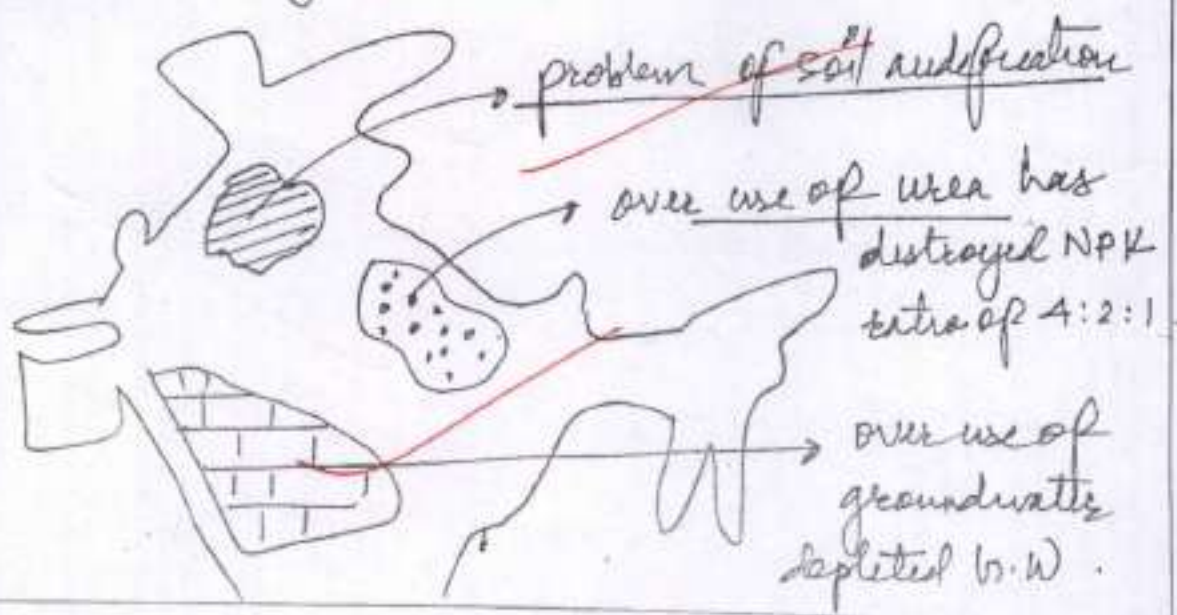
Remarks

2. Answer the following questions:

- (a) What do you understand by Zero Budget Natural Farming? Discuss the various components, benefits and challenges of ZBNF. (250 Words) (20)
- (b) Discuss the salient features of FAME-2 scheme. How will it help to improve charging infrastructure? What steps under this scheme are being taken to make electric vehicles more affordable? (200 Words) (15)
- (c) Discuss the need of introducing solar manufacturing policy in India. (200 Words) (15)

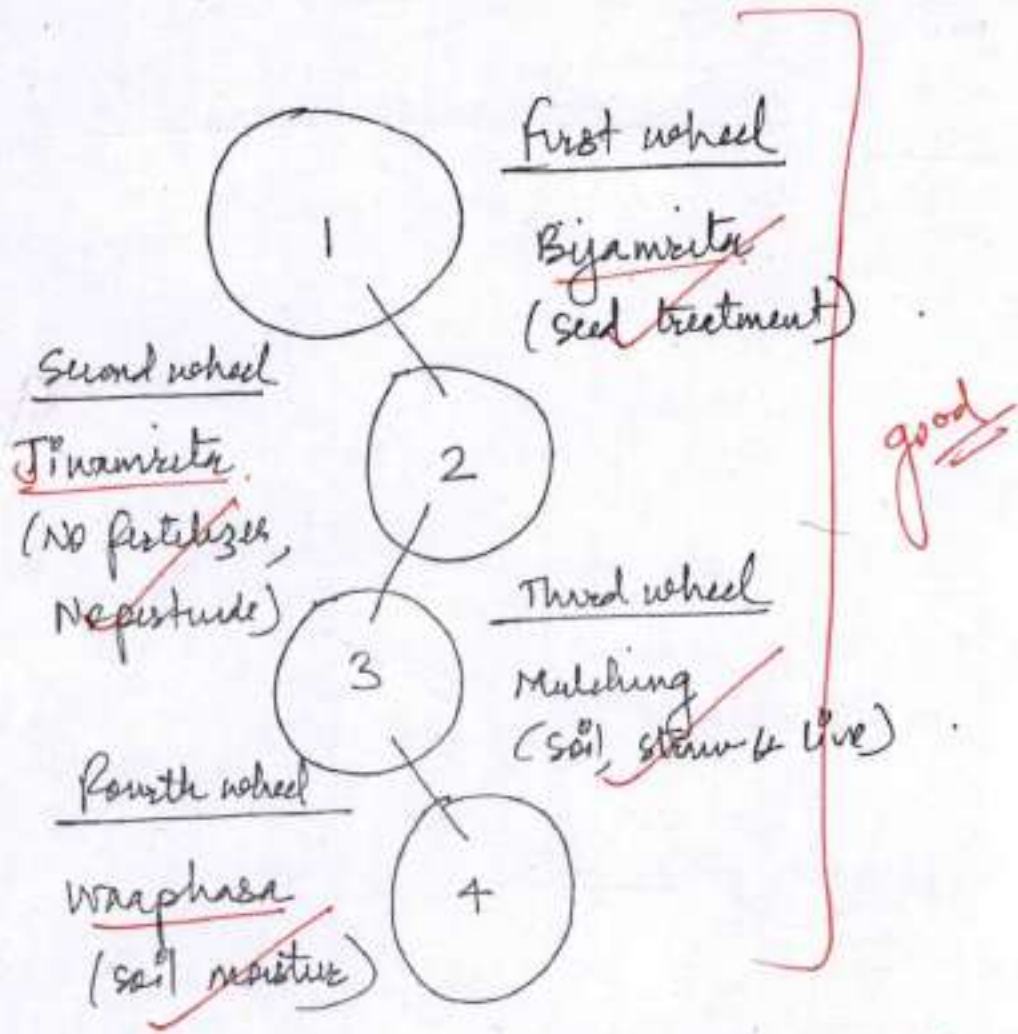
(a) The concept of Zero Budget (9)

Natural farming by Subhash Palaskar. This concept was developed in light of increasing chemical fertilizers and pesticide use, and its associated damage to soil and environment.



Remarks

Components of ZBNF



Bijamrita: treatment of seed with cow urine.

Jivamrita: treatment of soil with cow dung cakes and earthworms vermicompost.

Mulching: covering agricultural land with previous crop (straw covered).

Remarks

Whaapasa: soil moisture is further preserved by covering soil with straw of previous crops.

maintain moisture - air balance

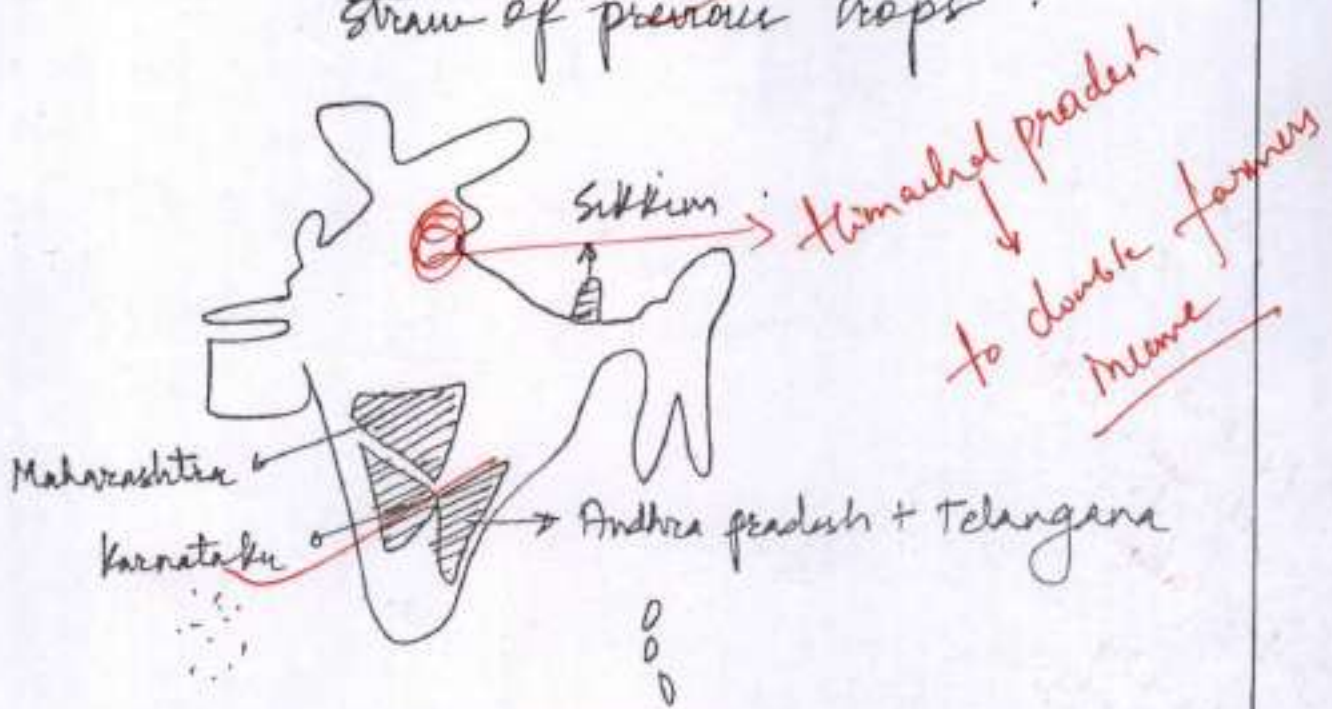


Fig: Areas reporting ZBNF

Benefits:

- Livestock + Agriculture become complementary to each other
- farmer doesnot get trapped into vicious debt cycle by avoid expensive input cost.

Remarks

- Natural fertility of soil is restored and productivity per unit crop land increased.
- It complements Indian farming scenario (85% farmer are marginal, less than 2 ha) and also complements agro climatic regions of country.

good  
Add more challenges like -  
Cost of labours and keeping cons is high  
→ can be vulnerable to pest attacks

- Technical expertise is required to conduct ZBNF appropriately.
- Information dissemination to small and marginal farmer is difficult.

Under the current scenario of climate smart agriculture, ZBNF offers the best solution. Andhra Pradesh's goal to adopt 100% ZBNF by 2025 should motivate other states.

Remarks

(b) FAME II scheme launched 6.5

by NITI AYDh will go beyond the FAME I and extend benefits to existing vehicles

Salient features:

It will cover two, three and four wheeled vehicles to cover potentialities

by 2030

- Electric buses compose a huge part of FAME 2 scheme.

- To enhance electric mobility and

- increase number of electric vehicle

- outlay of Rs. 10000 crore by 2022

Try to  
make  
small  
Subheadings

Remarks

has been granted

FAME II

electrifying two  
three vehicles

Developing  
battery  
technology

make transport  
sustainable

earn foreign  
exchange

exporting  
vehicle and  
battery

Agglomeration  
effect develop  
subsidiary industries  
like leather, electronic  
carbon fibre, steel  
aluminium

of creating  
growth poles  
of develop-  
ment

As this  
growth  
expand to  
surrounding  
areas

Make cities  
sustainable

stop urban  
migration  
according to  
strictly law  
of migration

employment  
to rural  
youth

Good

Remarks



### Help improve charging infrastructure:

- Active investment by public and private sector.
  - slow charging unit for one electric bus and fast charging for 10.
  - Integrate charging infrastructure with renewable energy source.
- incentives to manufacturers

### Challenges

- changing mindset of people regarding electric vehicle (both reliability and range).
  - Li-ion battery has to be imported specially from china. Increasing trade deficit.
  - New innovative models of PPP for setting up both factory and charging infra.
- Cost of vehicles  
→ Technology  
→ Charging Infrastructure

Remarks

Despite all these challenges, the world is moving towards more green modes of transport. India should understand its challenges and learn from developed Scandinavian country like Norway. FAME II is step in right direction.

Remarks

(C)

6.5

National solar mission under National Action Plan for climate change has set a target of 100 GW of installed energy capacity by 2022.

India already exceeded its 2019 target of around 20 GW. This shows the importance and acceptance of solar power as an alternate source of energy.

Too long introduction.  
Make it brief.

India is tropical country receiving at least 10 hrs of sunlight on any average day and has tremendous flatlands for

Remarks

setting up large solar parks

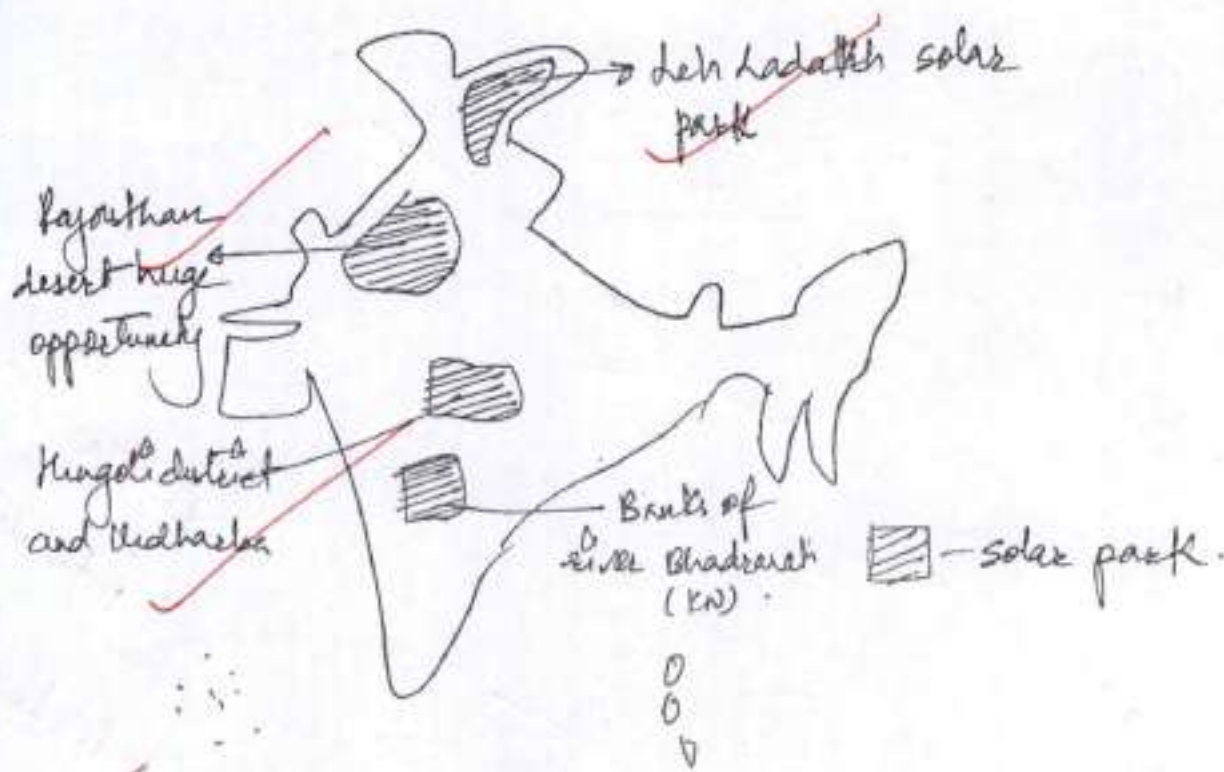


Fig. Distribution of solar park.

Substantive need for solar manufacturing policy.  
Almost 90% in 2017

India currently imports majority of solar panels from China (case of dumping).  
- India has limited resources of refined

Remarks

Silicon required to make solar panel.

- With ever rising demographic dividend, opportunity to employ both skilled and unskilled labours.

- Jobs provided by solar manufacturing industry are future proof and sustainable.

- International Solar Alliance (ISA) provides

huge opportunity to India to capture solar market around the world by developing robust manufacturing infrastructure and skilled workforce.

Therefore to capitalise on this opportunity, India needs a solar manufacturing capacity policy.

Opportunities in Silicon Production which is almost nil in India

You could have also

added challenges which can be overcome by well stream lined policy

Remarks

3. Answer the following questions:

(a) Urban morphology of cities in India shows dual structure. It is either blending of indigenous features and Western-style structure or hybridized European features. Illustrate. (250 Words) (20)

(b) "India's 60% of farmers depend upon rainfed 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 rainfed agriculture with reference to rainfed agriculture atlas released by Revitalizing Rainfed Agriculture (RRA) Network. (200 Words) (15)

(c) Strategy for the rehabilitation of the slum dwellers in India is based on providing good quality, affordable housing for the poor on the marginal areas of city region. Share your views on viability and effectiveness of this approach. (Self) (200 Words) (15)

(a) Morphology refers to land use

pattern. Urban morphology signifies the pattern of land use in urban space.

According to J-E. Brush, urban morphology of Indian cities are as follows:--

- Ancient capital: Ayodhya, Madurai, Indraprastha  
Palace of King was CBD, the untouchables were generally placed away from city.

Remarks

Medieval city and towns:

- Islamic influence, forts, mosque, bazaars became CBD (Central Business District)

Morphology of British (Modern) cities

- Civil lines, railway stations, ports became

CBD  
eg: Mumbai, Kolkata, Delhi etc.

Post Independent cities

- either industrial or administrative centers became CBD

eg: Chandigarh, Ranchi, Bhopal etc.

P L Singh attempted the morphology of these are. This is the indigenous features or Western type classification.

You could have explained this in brief.

Remarks

You have not addressed the demand of the question.

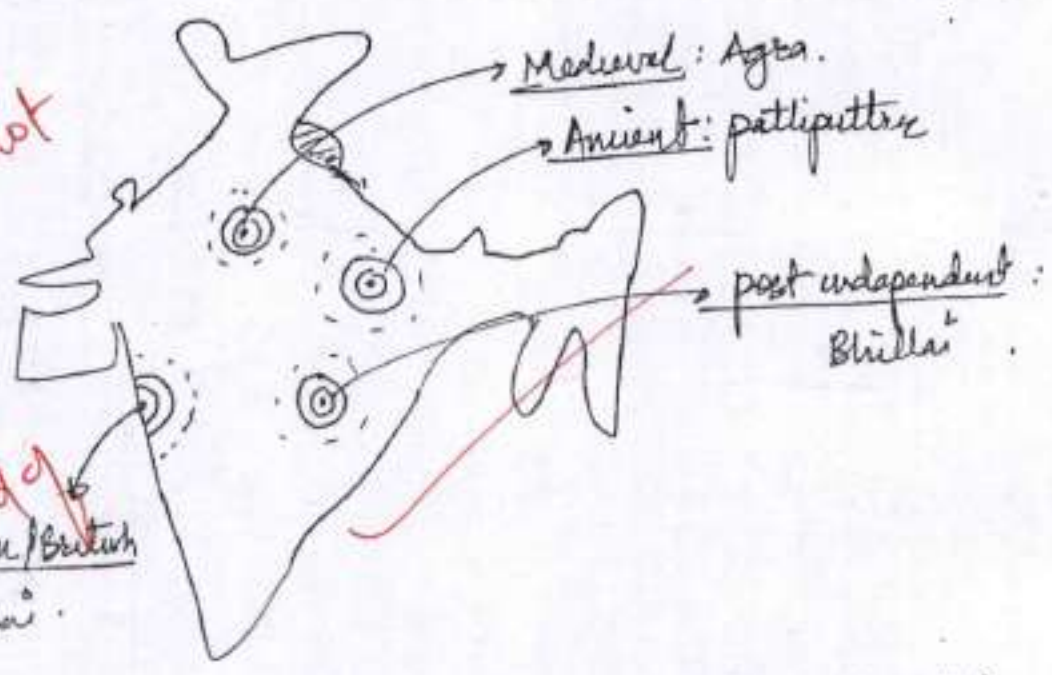
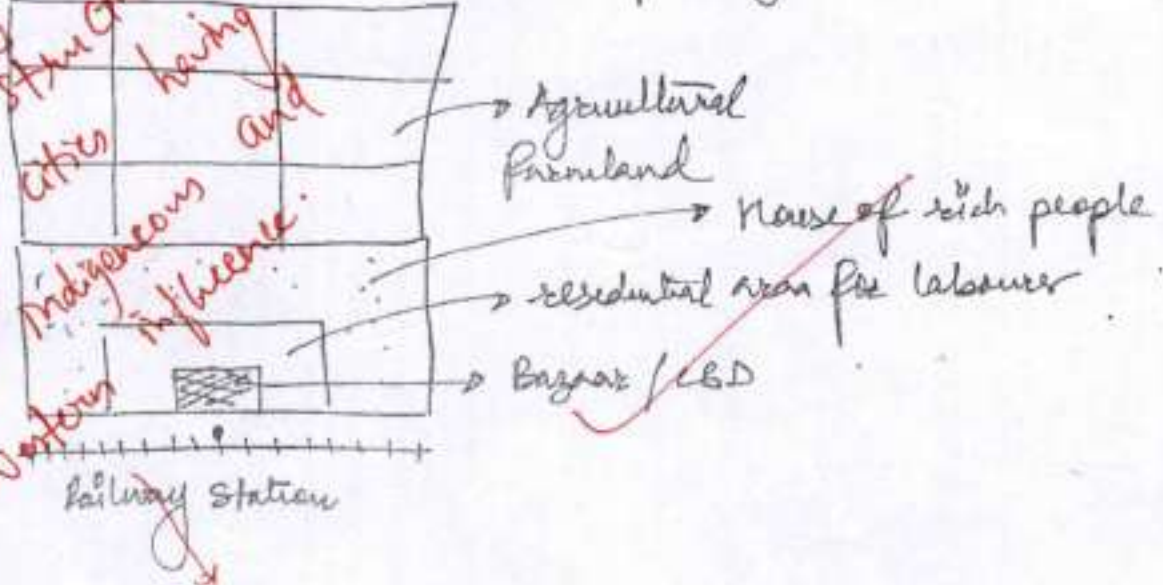


fig: Temporal Morphology of Urban cities

Another classification: Dual structure

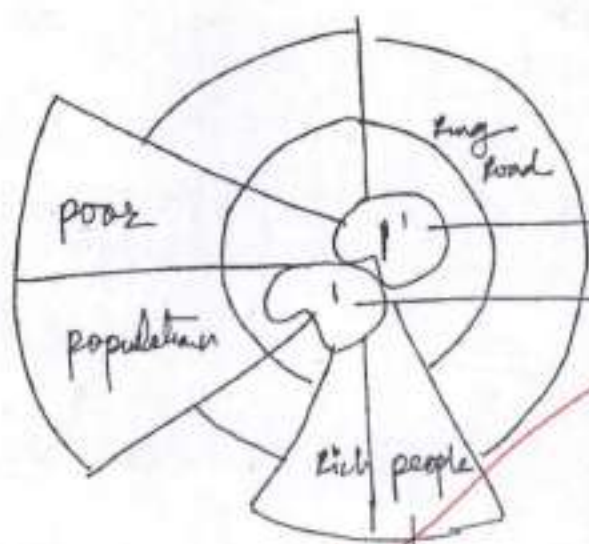
Bazaar model: Based on concentric and model of Borgees



It is about dual structure of Indian cities having both indigenous and western influence.

Remarks

② Colonial based model: Based on sectoral wedge model of Homer Hoyt



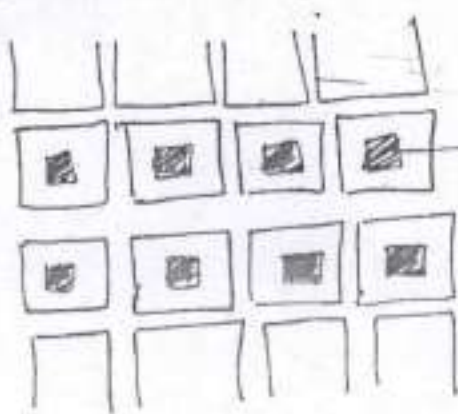
old CBD during medieval rule  
New CBD  
eg: established during British Sultanpur

house of rich people  
eg: Mehrauli area

Explain the dual structure taking examples of Delhi, Allahabad, Kolkata, Udaipur etc.

③ Planned city model based on multiple nuclei model of Harris and Davis

See



super built up area (commercial place acting as nuclei)

Fig: sector model of Chandigarh

Remarks

Therefore, as evident from above illustration it is clear that Indian cities show dual structure. It is either blending of indigenous features and western style or hybridised European

⑥ Distribution of Rainfed Agricultural Land is as follows.

Try to start with a proper introduction.

⑥

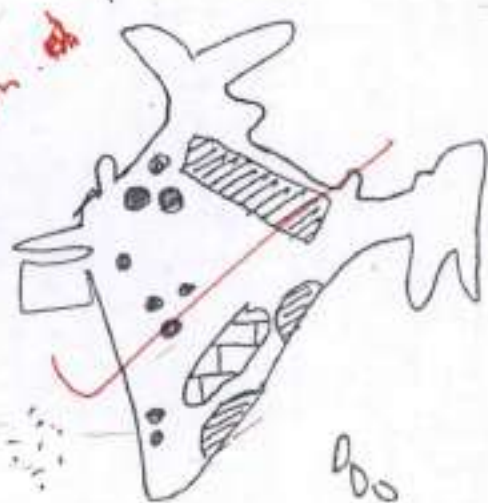


Fig: Map of India showing irrigation patterns

- ▨ - canal irrigated area
- ▤ - Tank irrigated area
- ◻◻ - Tube well irrigated area
- - Rainfed agricultural land (over 60%)

The fortune and fate of rainfed agriculture depend on global factors like El-Nino (drought years) and La Nina (flooding years)

Remarks

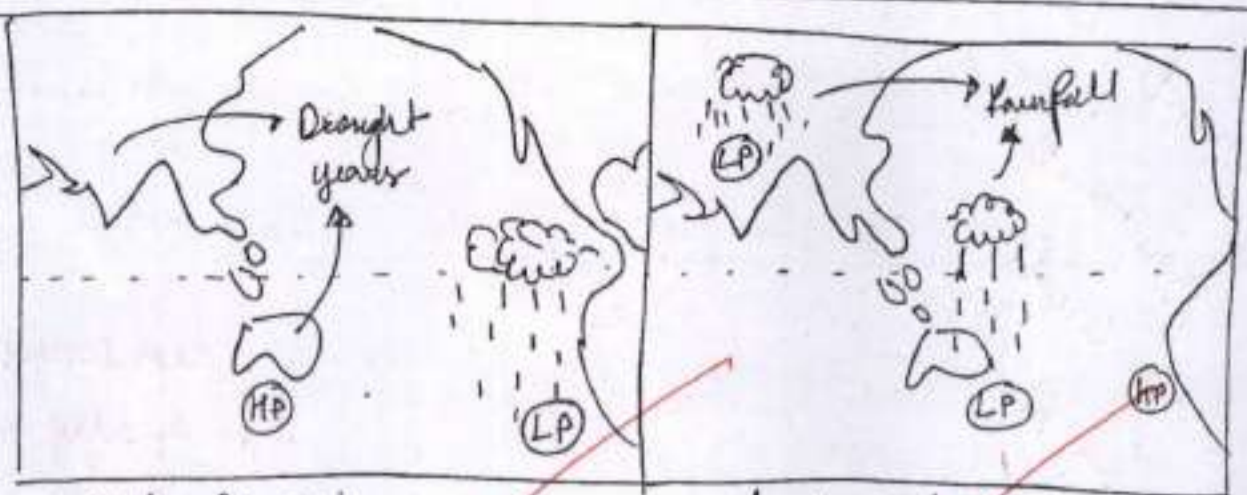


Fig. El Niño

Fig La Niña

However, El Niño doesn't always cause low rainfall in Indian subcontinent.

But whenever drought occurs, food security is affected. Increase in farmer suicide is seen specially in rained areas eg Uttarakhand, Telangana etc.

Policy Bias against rained agriculture :-

- Efforts towards expansion of irrigation infrastructure is stagnant.

Remarks

Add more arguments - like:-  
 → less procurement of coarse cereals  
 → hybrid seeds need plenty of water → not suitable  
 For a more holistic answer. write the steps taken by govt. Provide

Watershed management program, Accelerated Irrigation Benefit program (AIBP) has not

shown any significant results less useful for rained area farmer.

present government scheme of PM Kisan Yojana & "more crop per drop" is limited

Efforts towards microirrigation, dry farming should be accelerated

MSP (Minimum support price) should be set according to agro-climatic regions of the country.

Above interventions along

with projects like river linkage programme should be accelerated.

Remarks

③ Slums are the form of Urban sprawls located nearby a major urban city. It provides homes (shanty/depleted) to daily wage workers employed by city. (6)

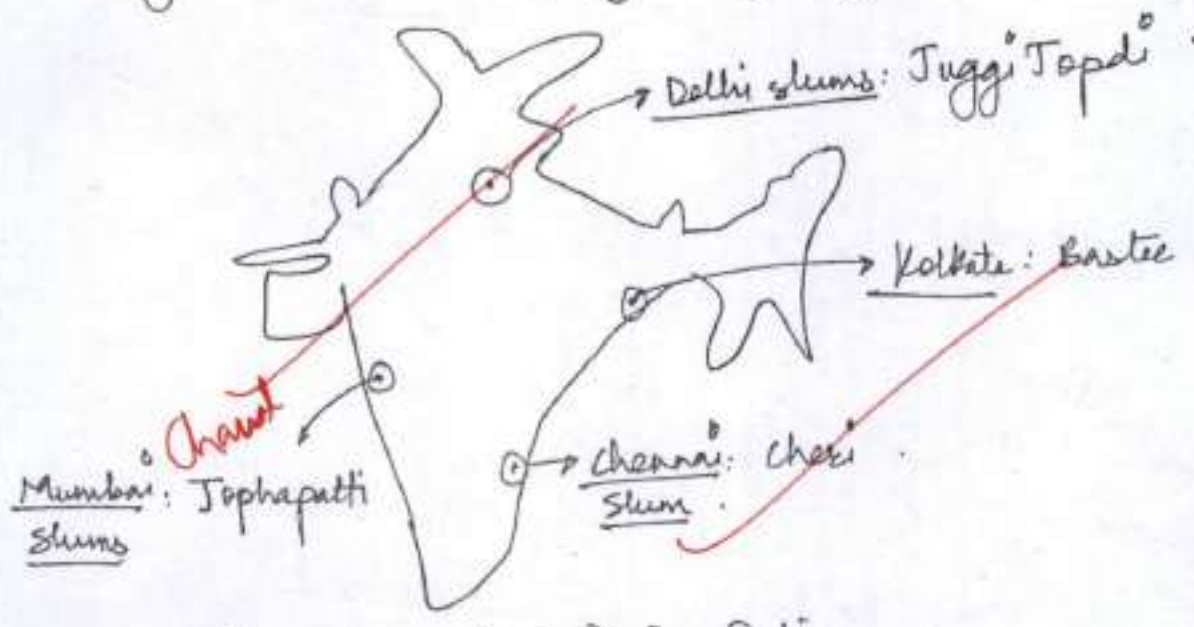


Fig: slums (major) in India

Strategy of rehabilitation by providing affordable housing has not work, because :-

- ~~few~~ slums usually are very near to the central business district.

Remarks

land rates are very high. Therefore density of people per unit area increase tremendously.

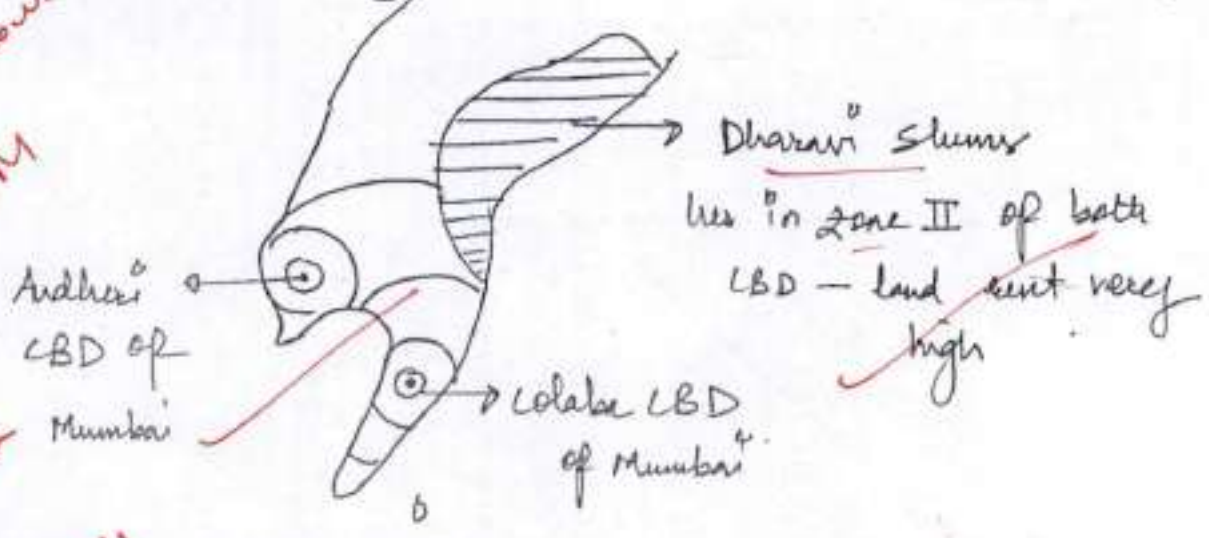


Fig. Island of Mumbai

- slums develop on government land, therefore evacuating people cause a lot of litigation. Some rehabilitation is possible.

Here you need to talk about the PM Awas Yojana & Housing for all by 2022 which is based on the given approach.

Remarks

strategy to solve slum issue → write in terms of

- law to check migration of people in cities eg: As done in New York and London *social, economic and environmental*
- More generation of jobs in rural areas to check migration
- slum rehabilitation scheme is dependent on ground realities of particular areas
- Urgent need for National population control policy

wherever strategy for rehabilitation fails, above steps can be adopted to remedy slum problem.

Remarks

SECTION-B

Attempt all questions:

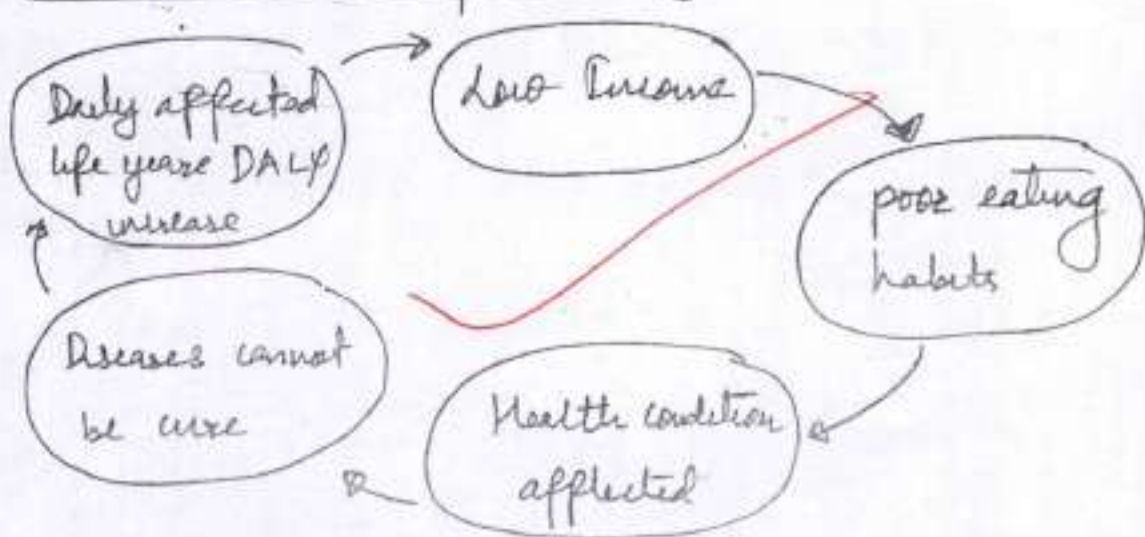
5. Comment on the following into 150 words: (10 × 5 = 50)
- (a) Inequality in health indicators on the rise in India. Discuss.
  - (b) Discuss the interrelationship between poverty and migration in India.
  - (c) What is the role of beekeeping in rural development? Discuss the challenges this industry is facing.
  - (d) What are the key features of civil aviation policy of India?
  - (e) Write a short note on sustainable development of cities.

3

write relevant introduction

(a) Income Inequality has been on the rise in India post 1991 liberalisation era.

According to Oxfam global eq. inequality report, Top 10% population own 60% of Nation wealth of country



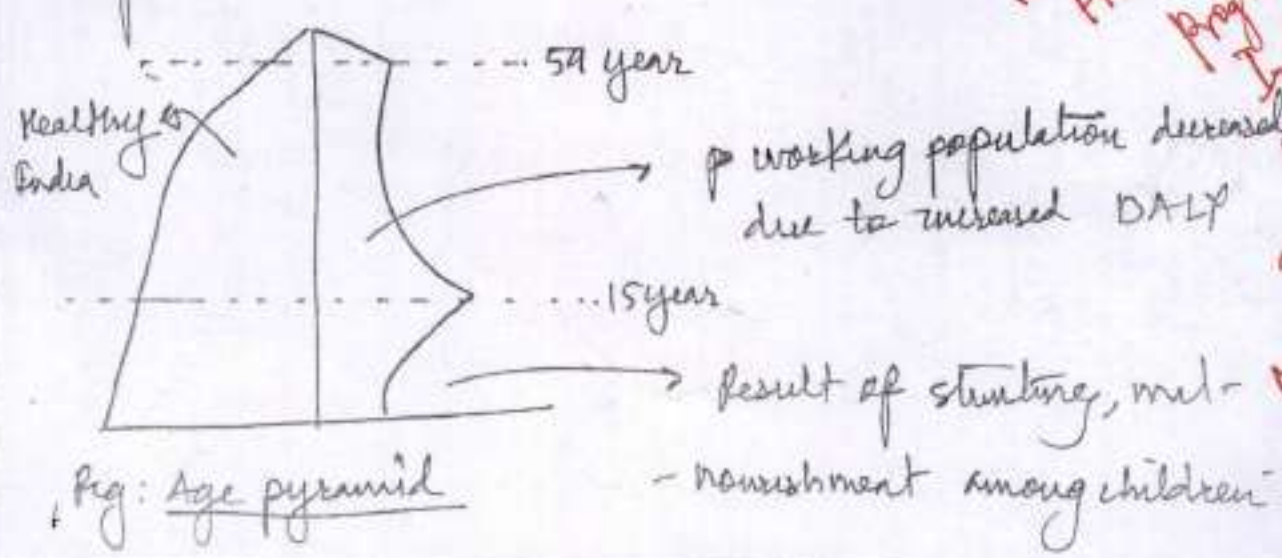
Remarks



According to NFHS-4, 38.4% of children below 5 are malnourished. Majority belong to low and marginally poor income group.

On the other hand, India is home to one of the highest number of obese people in the world, after USA. Punjab is diabetic capital of India, Kerala bet lung cancer capital.

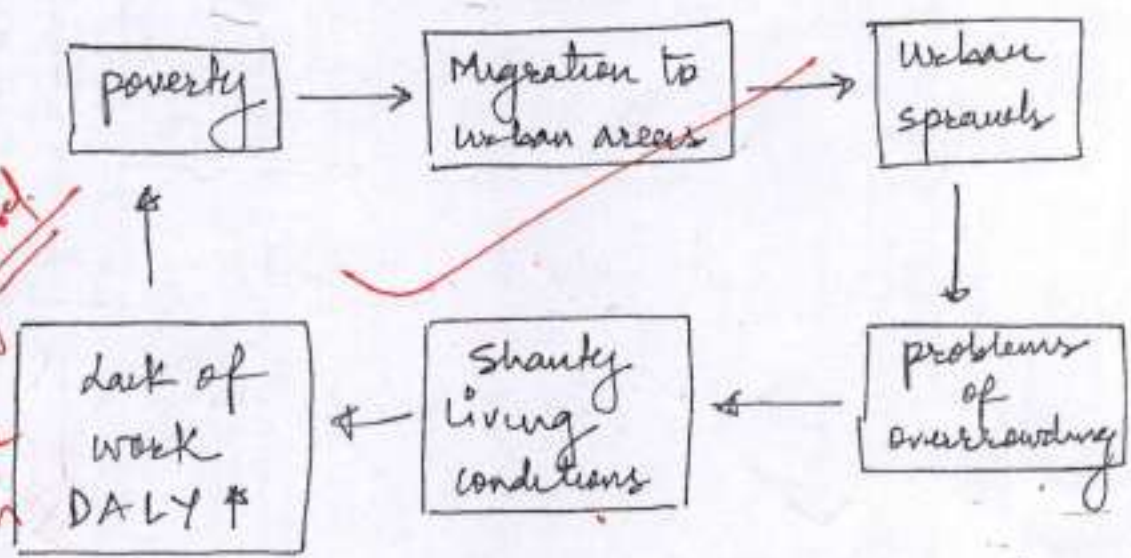
You need to compare the health indicators across the regions and states. Mention the "Healthy states Programme India" report. NITI.



Remarks

(b) According to Ravenstein's Law of migration hypothesis and Lee's migration theory, poverty becomes one of the important push factors for migration.

3.5



govt. depressive migration poverty

Fig: Vicious cycle of poverty and migration

Relationship :-

- Man, among total population

Remarks

migrate to cities. Leaving rural household with lack of bread winner

→ Impact on children,

② More is the poverty, farther the distance is of migration.

feminization of

③ Rural poor of North India are migrating to western and south India [No survey]

rural household olds, agriculture etc.

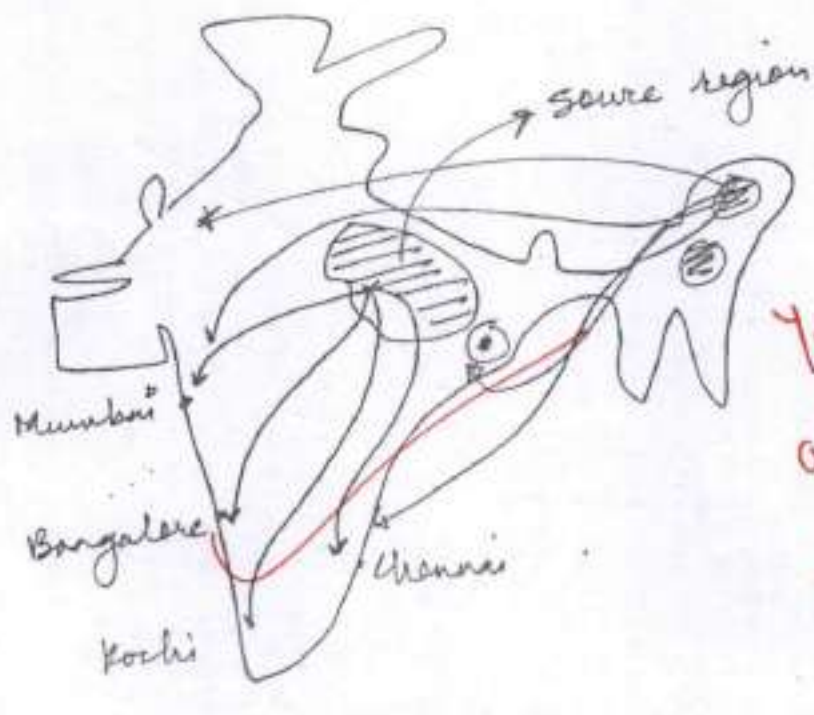


Fig. Migration maps of India

You can also add the govt. efforts  
 → NRLM  
 → MGNREGS  
 → Atmanirbhar Bharat etc.

Remarks

④ Beekeeping also known as apiculture is an important source of income in rural areas of the country, specially the North East region.

- provides additional source of income

to farmers in case of honey or bee wax.

→ encourages biodiversity and ecological awareness.

- bees acts as pollinators therefore supplement the horticulture produce.

- Demand for honey is rising in global economy. people are becoming more

conscious moving away from refined sugar.

→ Promotes and sustainable and ecofriendly agriculture

Remarks

- provides employment to rural youth, stops their urban migration.

### Challenges:

- Traditional method of beekeeping has caused decline in productive of honey with per hive. Bee wax found in honey due to improper refining.
- Deforestation in tribal areas have
  - o affect honey producing capacity.
- pesticides used by farmers in agricultural land has caused rapid killing of bees.
- Improper government support has created additional challenges.

- Lack of scientific data on honey bee  
 - Choice of honey bee for commercial beekeeping

Remarks

(4) (a) Due to high percentage of working population (45%) and huge physiographic extent of country, civil aviation has become a key factor in growth.

The rising middle class of India prefers travelling by air to save time and boost productive.

### Civil Aviation policy:

- To boost industry \$ 300 billion by 2025-2022.

- construction and renovation over 100+ air ports.

greenfield and brownfield projects

Remarks

- Introduction of helicopters in difficult and hilly terrain of North east and Western Himalayas

- subsidizing regional unconnected airports and air travel routes

eg: VDAN (Vadodra Dask to Anam Nigaike scheme)

- encouraging No frills airport in NER eg Shillong, Guwahati to boost connectivity and tourism.

Therefore aviation policy holds tremendous potential to develop the aviation industry in India.

Remarks

Add more specific points like  
 → replacing with 5/20 rule  
 → Open sky policy  
 → encouraging private security agencies etc.

② Sustainable development of cities

India has 30% of population

lives in cities. According to UNPF urban

population is expected to reach 300 million by 2030 and over 600 million by 2050.

Expanding the capacity of

cities in line with sustainable development was the agenda of UN Habitat 3 Summit in Buenos Aires.

Measures :

- A proper slum rehabilitation policy to control the urban sprawl.

3.5

Can highlight the problems faced by cities currently in brief  
 - Symbiotic relationship b/w city and its surrounding area

Remarks

- ~~not~~ Setting up growth poles answering  
to Porraux outside the cities can  
 lead to sustainable expansion

eg: Navi Mumbai Air port outside Mumbai

- separation of central Business district by  
 creating alternative administration and  
commercial unit. eg: Nagpur in Maharashtra

second capital as opposed to Pune.

- Utilizing the potential of conurbation  
of Patrick Geddes for sustainable expansion

eg: Agra, Delhi, Patna, Mathura, Kanpur,  
Smipur, Talashar, Patna conurbation  
 have to 5 crore people.

Add case studies from other countries  
 using concept of  
 Denmark  
 Canada

Remarks

8. Answer the following questions:

(a) Discuss the zonal trends and patterns of the internal and external migration in India. (250 Words) (20)

(b) What are the major industrial regions in India? Discuss some of the factors in localization of such regions. (200 Words) (15)

(c) "Policies for the seed industry lack visionary approach and it mostly rest on fragmented approach". In the light of the above statement discuss the issues involved in the development of seed industry in India. Also suggest measures. (200 Words) (15)

(9) India experiences both internal  
 (domestic) and external migration (international)  
 on a large scale.

Domestic migrants are about 40% of population  
 i.e. about 55 million

- International migrants form the Indian  
 diaspora of about 29 million all over  
 globe. Specially concentrated in  
 USA, Western Europe, Arab countries,  
 Japan, Singapore etc.

9  
 Substantiate by mentioning source.

Remarks

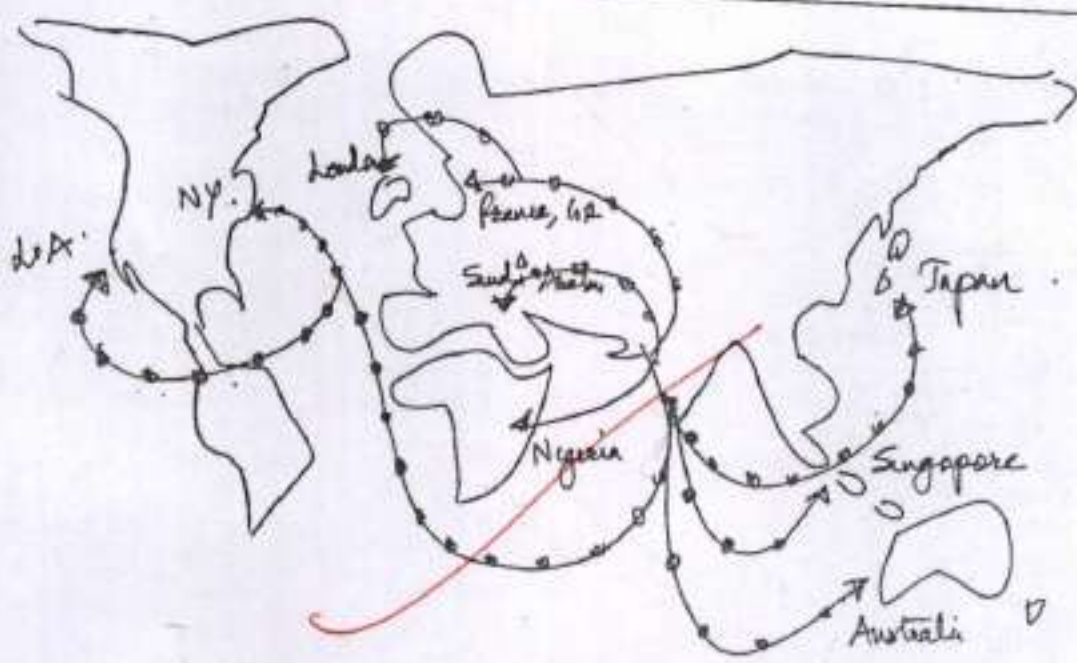
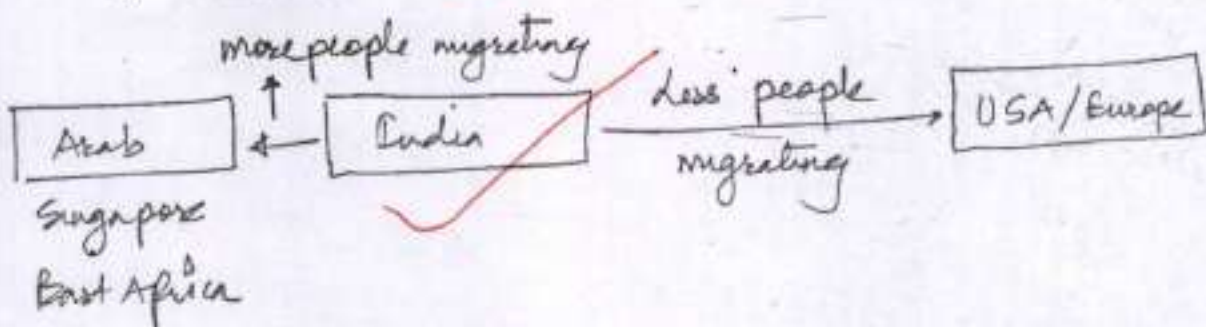


Fig: International migration by Indians

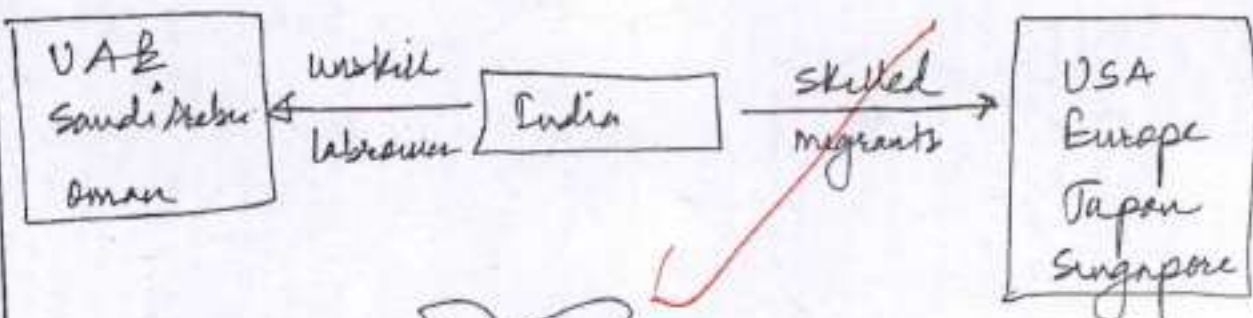
According to Stiff inverse distance law: number of people migrating is inversely proportional to distance



According to theory of intervening opportunity (skilled)  
 - More people migrate to USA and Europe

Remarks

and Japan and unskilled people migrate to Saudi Arabia, Oman, Dubai etc



people of Ganga plains migrate towards Punjab, Gujarat, Mumbai, Bangalore.

NE & people migrate to WB, A & N, Andhra Pradesh, Kerala as labourer.

ATSO  
 mention the R-R, R-V migration patterns of different regions

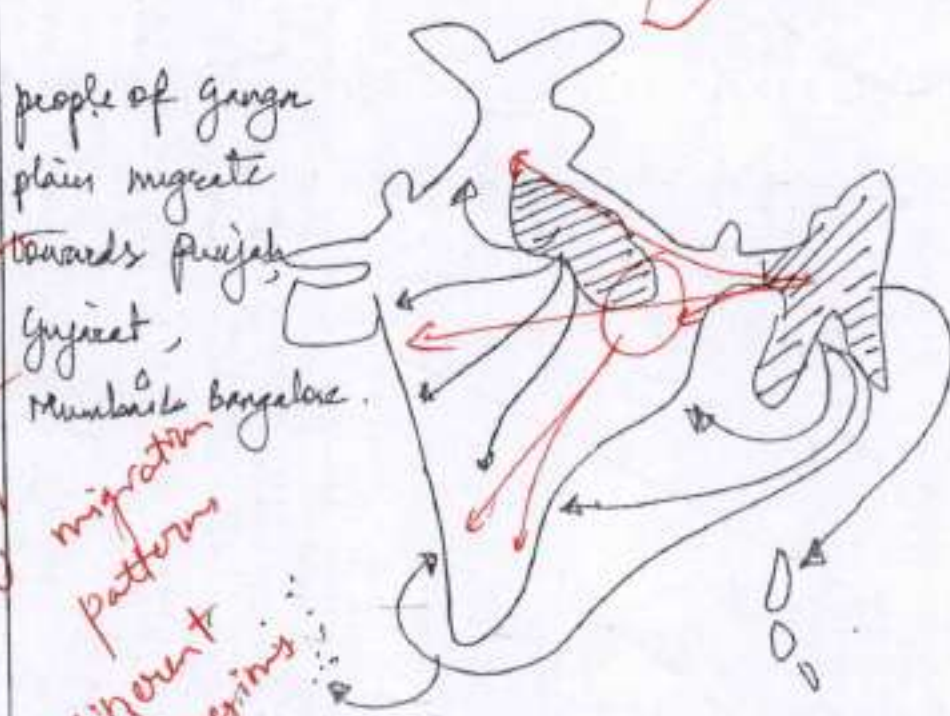
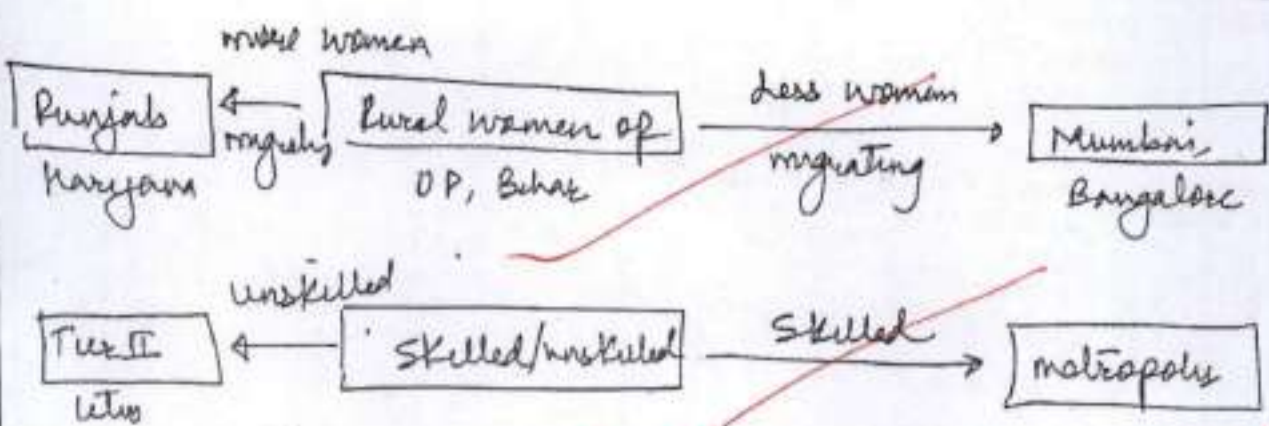


Fig: Internal migration of India

According to Ravenstein's Law of Migration  
 - more sex women migrate to short distance than men

Remarks



According to Lee's push pull factors:

- unemployed rural youth migrate to cities in search of job - This is most intra state migration.
- Similar intra state migration happens in case of education and health opportunities.
- rural-rural migration happens mostly interstate.

Therefore these are the trends and pattern of internal and external migration.

good use of laws and theories

Remarks

(b) There is no definite criteria for industrial regionalisation: However following variables are considered

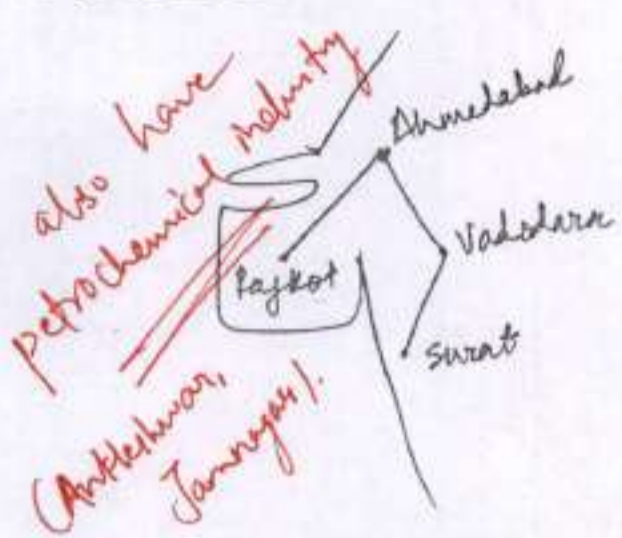
- No of industries / factories located
- % of industrial workers
- energy consumption / electricity consumption
- value of production
- quantity of production.

Based on the above, several geographers have created industrial regions of India. Prof P.P. Karan, Prof Das Gupta, Prof S. Mathur have done work in this field.

Remarks

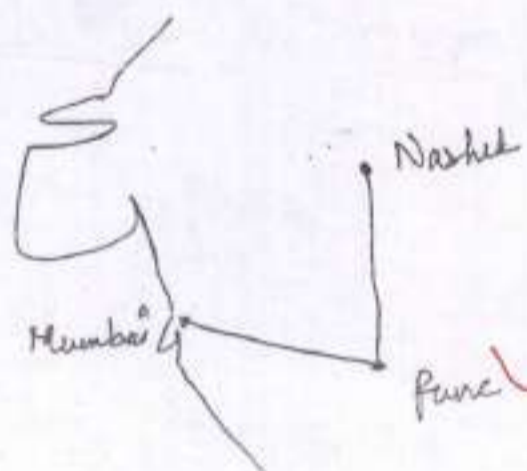
Classification done by prof M R Chaudhary is the most appropriate. It is as follows:-

① Ahmedabad - Vadodara Region



- Industries
- Diamond processing
  - cotton textile
  - Automobile
  - Advantage of port

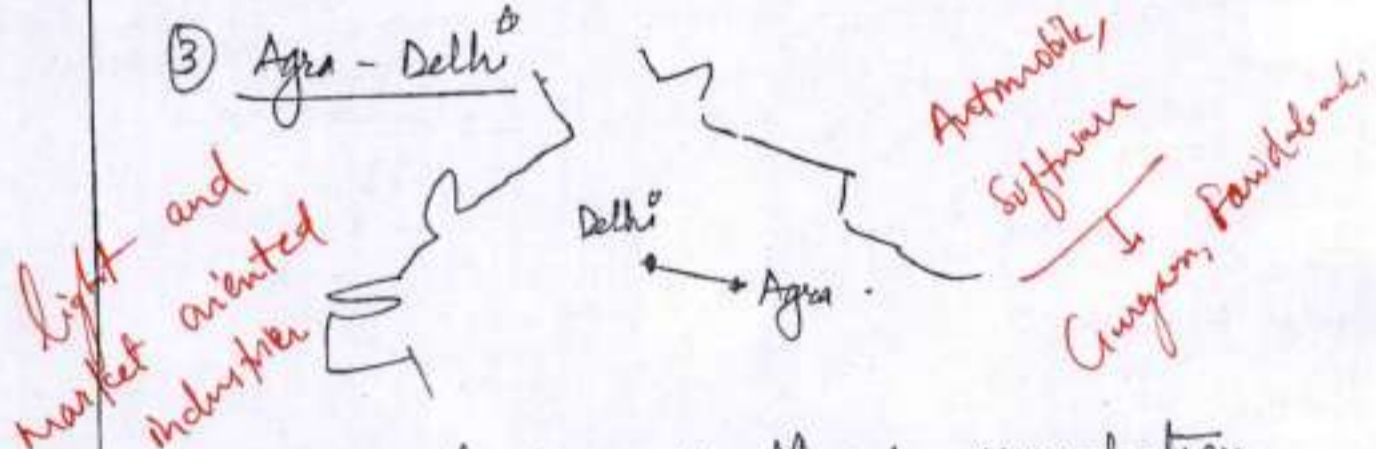
② Mumbai - Pune Region



- Industries
- cotton
  - Textile
  - Automobile
  - Retailizers
- also called as cotton heart of India
- Diversified into software and banking

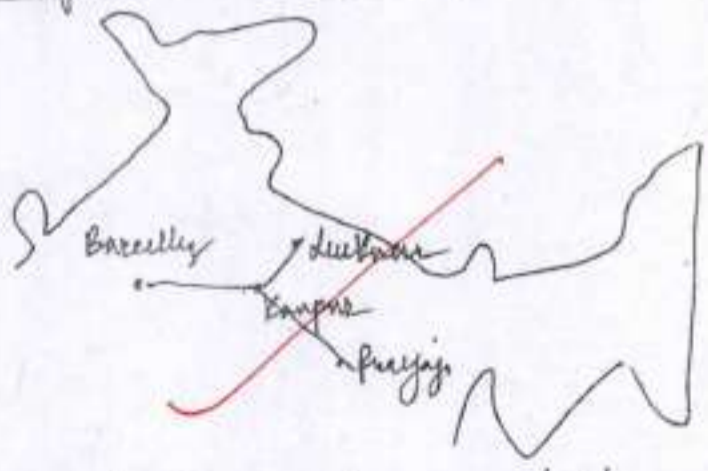
Remarks

③ Agra - Delhi



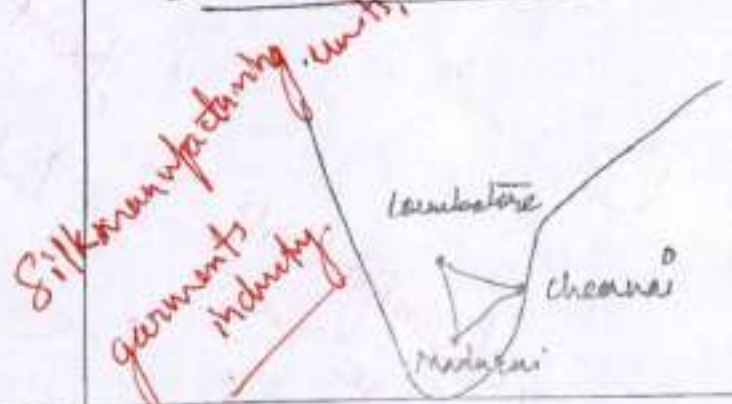
Belt of Delhi, Agra, Chandigarh conurbation

④ Kanpur - Lucknow



Industries: Leather, pharmaceuticals, automobile etc.

⑤ Chennai - Madurai - Coimbatore



- Industries:
- rubber, cement, automobile, aeronautics etc.

Remarks



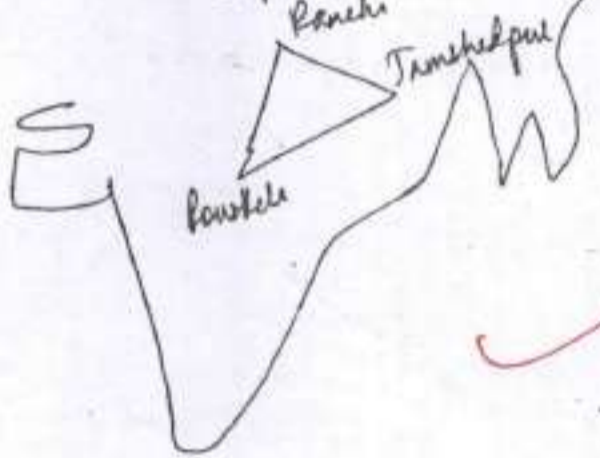
⑥ Noagla' Regia



- Industries
- Tute, silk, cotton, engineering goods, paper.

You have missed to mention the factors behind the localization of these industries.

⑦ Chhota Nagpur plateau



- Industries
- Iron and steel
  - locomotives
  - automobiles
  - fertilizers.

These industrial regions are not perfect as there are various interconnectedness among diff regions.

Remarks

③ Seed industry refers to the industry involved in the manufacturing production and breeding of both genetic seeds and new hybrid variety of seeds.

currently, seed production and distribution is majorly under central and state government. Private sector participation is limited to ~~low~~.

$$\text{Seed replacement ratio (SRR)} = \frac{\text{New seeds}}{\text{re-germinated seeds}}$$

SRR ratios varies across regions in the country:

Remarks

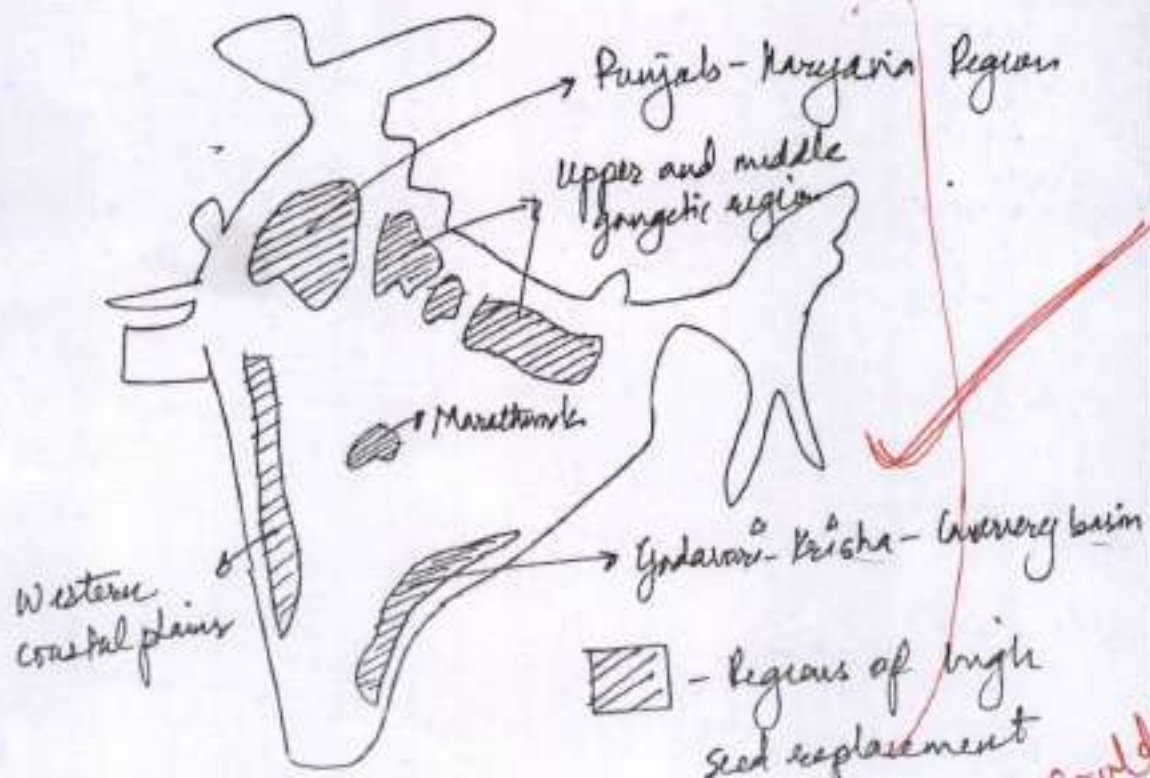


Fig: Seed replacement rate mapping.

High SRR → more productivity  
high yield per land

Low SRR → less productivity (low yield per land)

- This signifies the fragment approach in seed development industry in India

Could have explained it briefly to address all the subparts of question.

Remarks

Issues involved in development of seed industry

Research and Development largely dependent on government institute eg ICAR in Rajasthan

- lack of strong IPR regime and subsequent arbitration clause prevents investment in seed development

- Distribution mechanism of seeds is flawed, it benefits only few large farmers and landlords.

FDI in seed industry is restricted due to fear of monopolising eg: Monsanto case.

A proactive government push and boosting private participation along with

A new seed policy is need of the hour.

- used farm growth seeds  
- GM crop and its illegal use etc.  
- You missed the suggestion

Remarks