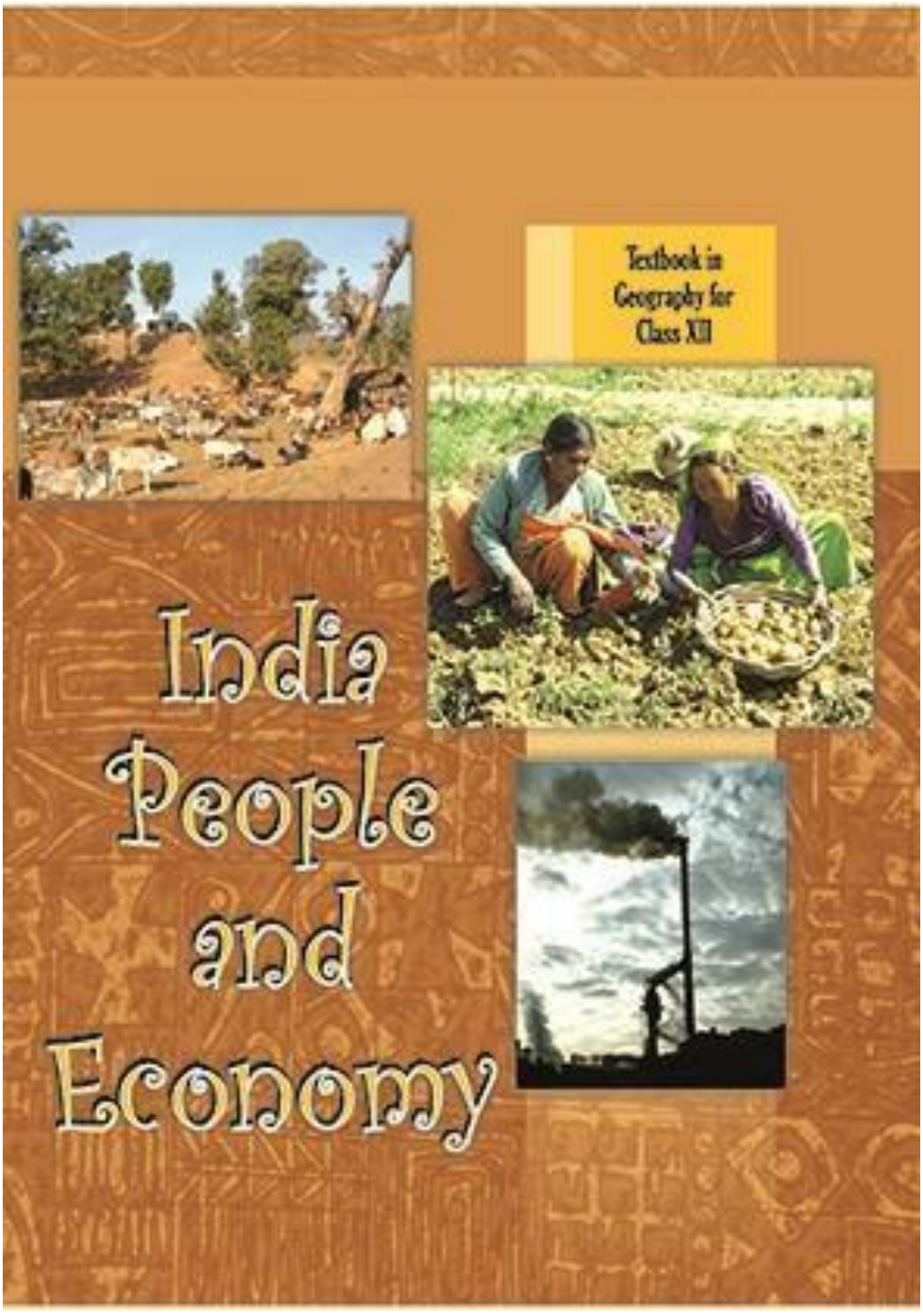
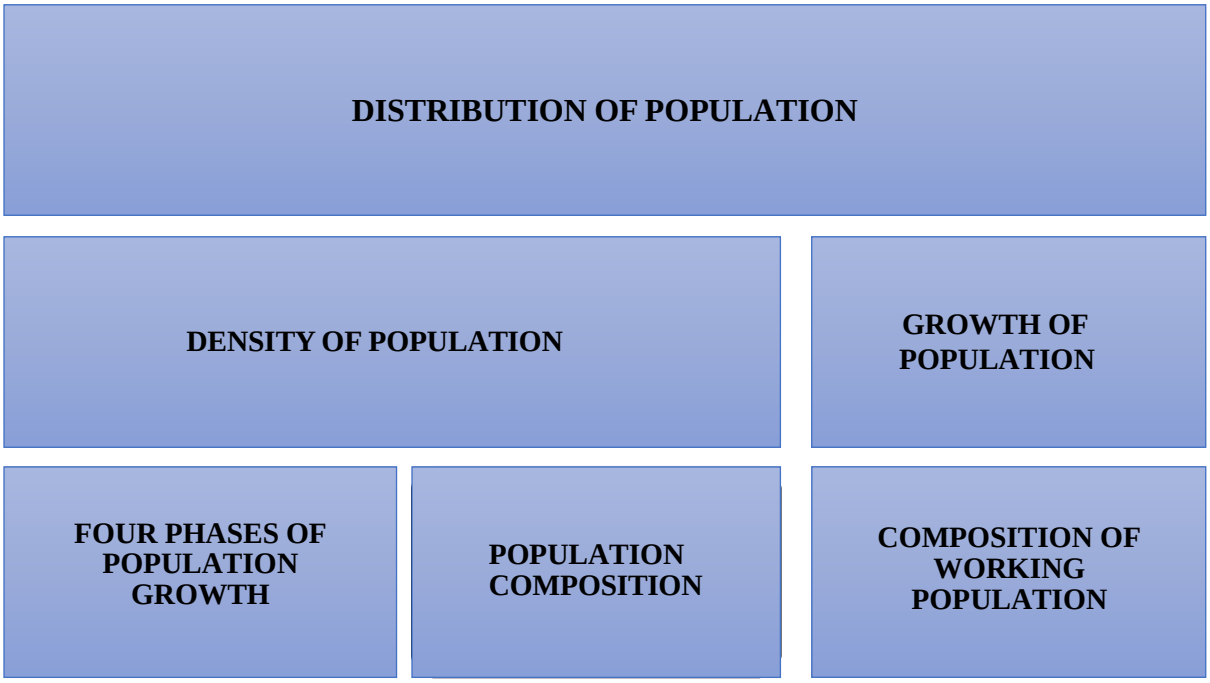
INDIA PEOPLE AND ECONOMY



UNIT-I
CH- 1: POPULATION DISTRIBUTION, DENSITY, GROWTH AND COMPOSITION

Mind Map



Gist of the Chapter

- Population data are collected through Census operation held every **10 years** in our country.
- The first population Census in India was conducted in **1872** but its first complete Census was conducted only in **1881**.

DISTIBUTION OF POPULATION

- The term population distribution refers to the way **people are spaced over the earth's surface**.
- India has a highly uneven pattern of distribution.
- **Uttar Pradesh** has the highest percentage of population in India.
- North Indian plains, Deltas and Coastal Plains have higher proportion of population than the interior districts of the southern and Central Indian states, Himalayas & some of the North Eastern and the Western states.
- Development of irrigation **(Rajasthan**), availability of minerals & energy resources (**Jharkhand)** & development of transport network (Peninsular States) have resulted in moderate to high concentration of population.
- The Urban regions of Delhi, Mumbai, Kolkata, Chennai & Jaipur have high concentration of population due to industrial development and urbanization.

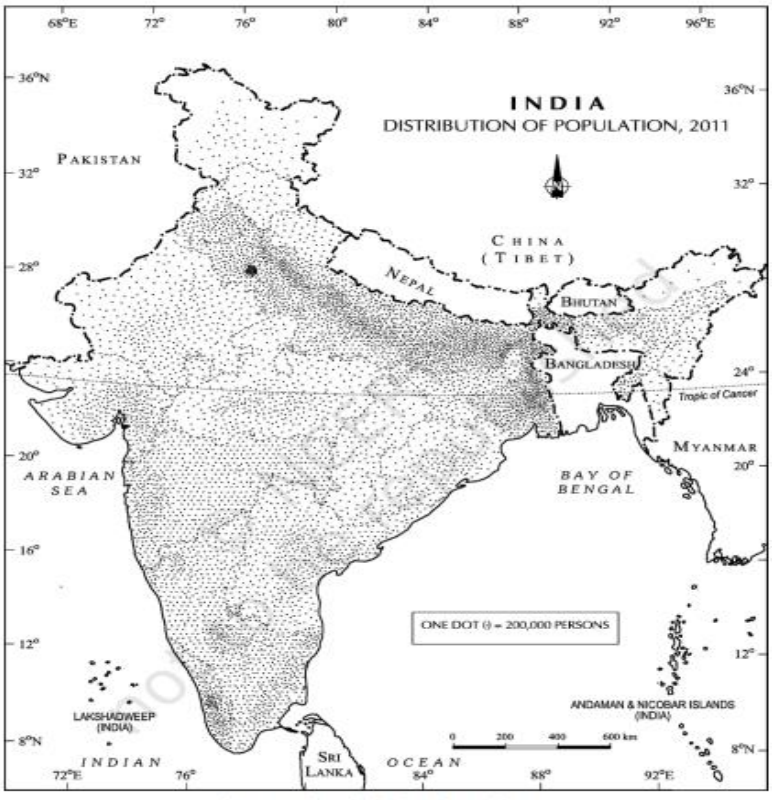


Fig. 1.1 : India – Distribution of Population

DENSITY OF POPULATION

- **Density of population is the number of persons per unit area.**
- $$\text{Density of Population} = \frac{\text{Population}}{\text{Area}}$$
- Density of population, is expressed as **number of persons per unit area.**
- The density of population in India (2011) is **382 persons per sq km.**

ranges from as low as **17** persons per sq km in Arunachal Pradesh to **11,297** persons in the National Capital Territory of Delhi

.

- Among the northern Indian States, Bihar (1102), West Bengal (1029) and and Uttar Pradesh (828) have higher densities, while Kerala (859) and Tamil Nadu (555) have higher densities among the peninsular Indian states.
- The hill states of the Himalayan region and North eastern states of India (excluding Assam) have relatively low densities while the Union Territories (excluding Andaman and Nicobar Islands) have very high densities of population

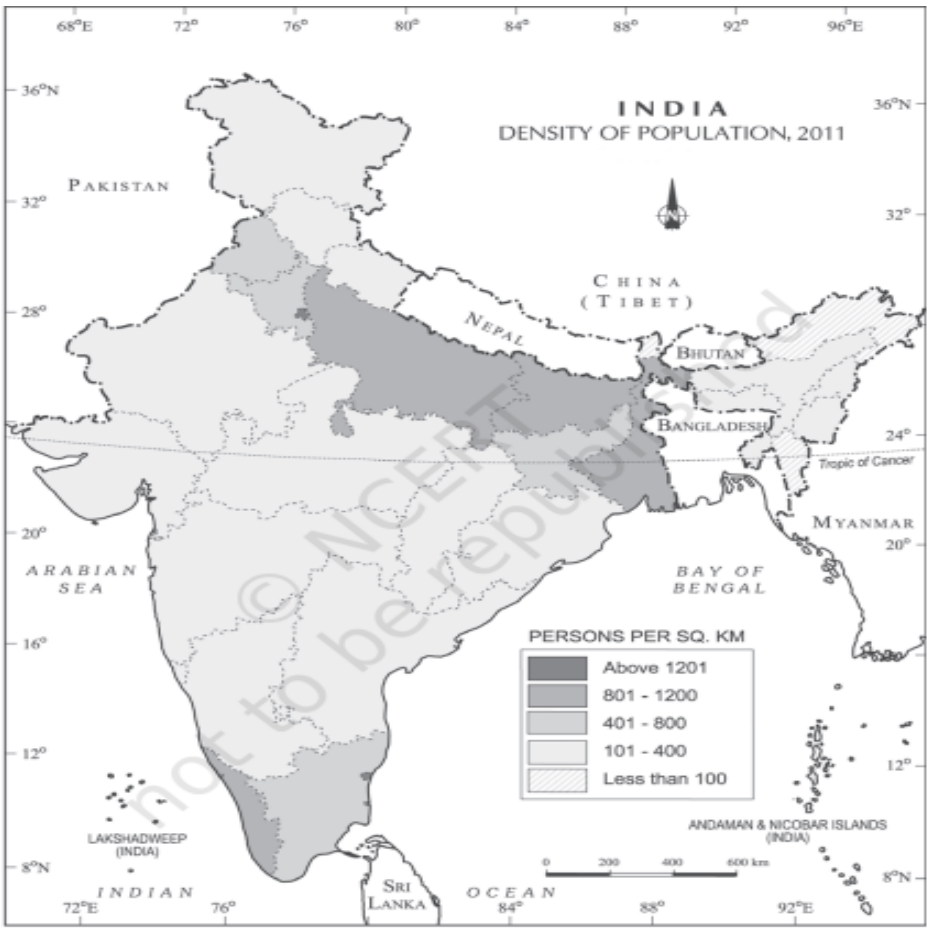
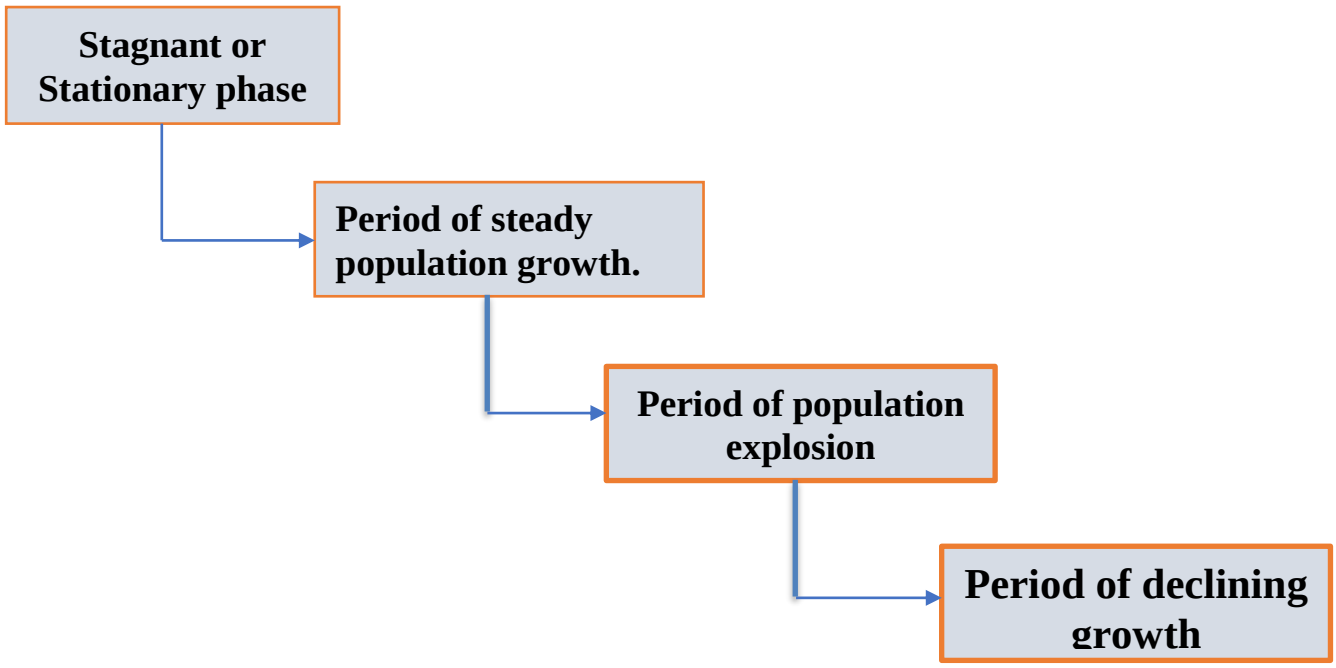


Fig. 1.2 : India – Density of Population

GROWTH OF POPULATION

- **Growth of population is the change in the number of people living in a particular area between two points of time**.
- Its rate is expressed in **percentage.**
- Population growth has two components namely; **natural and induced**.
- natural growth is analysed by assessing the crude birth and death rates, the induced components are explained by the volume of inward and outward movement of people in any given area.
- The annual growth rate of India's population is **1.64** per cent (2011).
- **Kerala** registered the lowest growth **rate (9.4)**
- The States like Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Odisha, Puducherry, and Goa show a low rate of growth not exceeding 20 per cent over the decade
- North-West, north, and north central parts of the country has relatively high growth rate than the southern states. It is in this belt comprising Gujarat, Maharashtra, Rajasthan, Punjab, Haryana, Uttar Pradesh, Uttarakhand, Madhya Pradesh, Sikkim, Assam, West Bengal, Bihar, Chhattisgarh, and Jharkhand, the growth rate on the average remained 20-25 per cent.

Phase wise population growth of India (1901-2001)



There are **four** distinct phases of growth identified within this period:

Phase I: The period from 1901-1921 is referred to as a period of **stagnant or stationary phase** of growth of India's population

- In this period growth rate was very low, even recording a negative growth rate during 1911-1921.
- Both the birth rate and death rate were high keeping the rate of increase low
- Poor health and medical services, illiteracy of people at large and inefficient distribution system of food and other basic necessities were largely responsible for a high birth and death rates in this period

Phase II: The decades 1921-1951 are referred to as **the period of steady population growth**.

- The crude birth rate remained high in this period leading to higher growth rate than the previous phase
- An overall improvement in health and sanitation throughout the country brought down the mortality rate.
- At the same time better transport and communication system improved distribution system.

Phase III: The decades 1951-1981 are referred to as the **period of population explosion** in India, which was caused by a rapid fall in the mortality rate but a high fertility rate of population in the country.

- The average annual growth rate was as high as **2.2** per cent.
- After the Independence, that developmental activities were introduced through a centralized planning process and economy started showing up ensuring the improvement of living condition of people at large. Consequently, there was a high natural increase and higher growth rate.
- Besides, increased international migration bringing in Tibetans, Bangladeshis, Nepalies and even people from Pakistan contributed to the high growth rate

Phase IV: In the post 1981 till present, the growth rate of country's population has started slowing down gradually

- A downward trend of crude birth rate is held responsible for such a population growth
- Growth rate of population has declined due to many reasons i.e.an increase in the mean age at marriage, improved quality of life particularly education of females in the country

Regional Variation in Population Growth:

- The states like Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Odisha, Puducherry, and Goa show a low rate of growth not exceeding 20 per cent over the decade.
- **Kerala** registered the lowest growth rate (9.4) in the country as a whole.
- An important aspect of population growth in India is the growth of its adolescents.
- At present the share of adolescents i.e, up to the age group of 10-19 years is about 20.9per cent (2011)

  There are many challenges for the society as far as these adolescents are concerned, some of which are :

  (a) Lower age at marriage,
  (b) Illiteracy – particularly female illiteracy,
  (c) School dropouts,
  (d) Low intake of nutrients,
  (e) High rate of maternal mortality of adolescent mothers,
  (f) High rate of HIV and aids infections,
  (g) Physical and mental disability or retardedness,
  (h) Drug abuse and alcoholism,
  (i) Juvenile delinquency and commitence of crimes, etc.

Population Composition:

Rural- Urban Composition:

- In India About **68.8%** Of the total population lives in villages (2011).
- States like **Himachal Pradesh and Bihar** have very high percentage of rural population.
- The States of **Goa and Mizoram** have low percentage of population residing in the villages.
- The proportion of Urban population **(31.16%)** in India

Religious Composition:

- **Hindus** are distributed as a major group in many states (ranging from **70 - 90** percent and above)
- **Muslims**, the largest religious minority. They form majority in **Kashmir valley and Lakshadweep.**
- The Christian population is distributed mostly in rural areas of the country.
- **Sikhs** are mostly concentrated in the states of **Punjab, Haryana and Delhi.**
- Jains and Buddhists, the smallest religious groups in India

Linguistic Composition:

- In India there are about 22 scheduled languages
- Among the scheduled languages, the speakers of Hindi have the highest percentage.the smallest language groups are Sanskrit, bodo and Manipuri speakers (2011).
- The speakers of major Indian languages belong to four language families.they are:
  - **(I) Austric (Nishada) 1.38%**
  - **(II) Dravidian (Dravida) 20%**
  - **(III) Sino-Tibetan (Kirata) 0.85%**
  - **(IV) Indo - European (Aryan) 73%**

Composition of Working Population:

The population of India according to their economic status is divided into three groups:

- Main Workers,
- Marginal Workers and
- Non-Workers**.**
- In India, the proportion of workers (both main and marginal) is only **39.8** per cent(2011) leaving a vast majority of about 60 per cent as non-workers
  - (a) **Main worker** is a person who works for at least **183 days (or six months)** in a year.
  - (b) **Marginal worker** is a person who works for **less than 183 days (or six months**) in a year.
  - (c) About **54.6** per cent of total working population are **cultivators and agricultural laborers,** whereas only 3.8% of workers are engaged in household industries and 41.6 % are other workers including non-household industries, trade, commerce, construction and repair and other services.

Beti Bachao–Beti Padhao'Social Campaig

In 2015, the Indian government introduced the Beti Bachao, Beti Padhao (BBBP) scheme to address concerns of gender discrimination and women empowerment in the country. The name Beti Bachao, Beti Padhao translates to 'Save the girl child, educate the girl child'. The scheme aims to educate citizens against gender bias and improve efficacy of welfare services for girls.

OBJECTIVES

The Beti Bachao Beti Padhao Yojana aims to achieve the following goals:

- Improve the child sex ratio
- Ensure gender equality and women empowerment
- Prevent gender-biased, sex selective elimination
- Ensure survival and protection of the girl child
- Encourage education and participation of the girl child

Most Important Questions with Answers(1 Marks)

MCQ TYPE QUESTION. (1 Mark)

Q1. India's population as per 2011 census is:

(a)1028 Million (B) 3287 Million (C) 3182 Million (D) 1210 Million

Ans: D

Q2. Which one of the following states has the highest density of population in India?

(a)West Bengal (B) Bihar (C) Kerala (D) Punjab

Ans: B

Q3. Which one of the following states has the highest proportion of urban population in India according to 2011 census?

(a)Tamil Nadu (C) Kerala (B) Maharashtra (D) Goa

Ans: D

Q4. Which one of the following is the largest linguistic group of India?

(a) Sino – Tibetan (B) Austric (C) Indo – Aryan (D) Dravidian

Ans:C

Q5. The density of population in India (2011) Is?

(a)378 (B)380 (C)382 (D) 384

Ans: C

Q6. The decades of---------- are referred to as the period of population explosion in India.

(a)1921-1951 (B) 1981-2002 (C) 1951-1981 (D) None of these

Ans: C

Q7. The Government of India has launched a nationwide campaign called ---------- to promote gender sensitivity.

(a)Beti Bachao Beti Padhao

(b)Beti Parhao

(c) Both a and b

(d)None of these

Ans. (a)

Q8. Which state has the largest population?
(A) Uttar Pradesh B) West Bengal(C) Kerala(D) Punjab
Ans: A

Q9. When was the first census held in India?
(A) 1871 (B) 1881 (C) 1891 (D) 1861

Ans.(b)

Q10.Which of the following is associated with adolescent population?

(a) Low age at marriage (b) Illiteracy, particularly female illiteracy

(c) Low intake of nutrients

(d)All of these.

Ans. (d)

Q11.Assertion: There is a close relationship between population and physical factors therefore distribution of population is uneven.

Reason: highest density of population is recorded from Arunachal Pradesh.

(a) Assertion is correct but reason is false
(b) Reason is correct but assertion is wrong
(c) Both A and R are correct and R supports A
(d) Both A and R are correct But R does not support A.

Ans. (a)

Q12.Case Based Question.

Read the source given below and answer the questions that follow:

The percentage shares of population of the states and Union Territories in the country show that Uttar Pradesh has the highest population followed by Maharashtra, Bihar and West Bengal. Andhra Pradesh along with Tamil Nadu, Madhya Pradesh, Rajasthan, Karnataka and Gujarat, together account for about 76 per cent of the total population of the country. On the other hand, share of population is very small in the states like Jammu & Kashmir (1.04%), Arunachal Pradesh (0.11%) and Uttarakhand (0.84%) in spite of these states having fairly large geographical area.

(a) Which of the given option is best suited for the population status of India?

(i) Even spatial distribution of population

(ii) Dense distribution of population

(iii) Uneven spatial distribution of population

(iv)sparse distribution of population

Ans (iii)

(b) The distribution pattern of population in India suggests a close relationship between

(i) Natural and man made factors

(ii) Climate and terrain

(iii) Availability of minerals and energy resources and concentration of population

(iv) Population and physical ,socio-economic and historical factors

Ans (iv)

(c) The physical factors that determine the pattern of the population distribution are:

(i) Climate

(ii) Terrain

(iii) Availability ofwater

(iv)All of these

Ans (iv)

Short Answer Type Questions: (3 Marks)

Q1. Define Population Growth. also mention about the components of thepopulation growth.

Ans: Growth of population refers to the change in the number of people living in a particular area between two points of time.

- Population Growth Has Two Components Namely; Natural and Induced.
- Natural Growth: It is obtained by assessing the crude birth and death rates,
- Induced Growth: It is obtained by the volume of inward and outward movement of people in any given area.

Q2. Why do some states of India have higher rates of work participation thanothers?

Ans. In India, the work participation rate are higher in the areas of lower level of economic development

- Because a large number of people are needed to perform agricultural or nonagricultural activities.

Q3. Which states have large rural population in India? Give reason for such large rural population.

Ans. Bihar And Sikkim have large rural population.

Reason for large rural population is the dependence on agriculture.

Q4. The distribution of population is highly uneven in India.' give three examples.Ans:

- India has an uneven distribution of population: plains have more population than mountains, deserts and forested lands have less population.
- Urban Regions of Delhi,Mumbai,etc have high population due to industrialization, urbanization, etc.
- River basins and coastal plains have dense population.

Long Answer Questions: (5 Marks)

Q.1 "The Growth rate of population in India over the last one century has been caused by annual birth rate and death rate and rate of migration and therebyshows different trends". justify the statement.

- **Ans**: There are four distinct phases of growth in India. they are as follows:
- **Phase I** : The Period from 1901-1921 is referred to as a period of **stagnant or stationary** phase of growth of India's population,
- In this period growth rate was very low, even recording **a negative growth** rateduring **1911-1921**
- Both the birth rate and death rate were high during this period
- Reasons of high birth rate: illiteracy of people
- Reasons of high death rate: inefficient distribution system of food and other basic necessities,lack of medical facilities
- **Phase II**: The Decades 1921-1951 are referred to as the **period of steady population** growth.
- Mortality rate declined during this period due to improvement in health and sanitation facility
- Birth rate remained high in this period, so the growth rate was higher in thisperiod.
- **Phase III**: The Decades 1951-1981 are referred to as the period of **population explosion** in India
- During this phase, there was a rapid fall in the mortality rate but the fertility rateremained high
- Since this was a Period after independence, international migration from neighboring

countries also led to high growth rate.

- **Phase IV** : In the post 1981 till present, the growth rate of country's population though remained high, has started slowing down gradually.
- The birth rate started decreasing gradually due to increase in the age of marriage, education of females, etc.

Q.2 "The Adolescent Population, though, regarded as the youthful population having high potentials, but at the same time they are quite vulnerable if not guided and channelized properly. "explain with examples.

- **Ans**: An important part of population growth in India is the growth of its adolescents.
- But ,if the adolescents are not guided properly, they may become challenging forthe society
- Challenges for the society as far as these adolescents are concerned are as follows:Lower age at marriage, illiteracy – particularly female illiteracy, school dropouts, low intake of nutrients, high rate of maternal mortality of adolescent mothers, highrate of HIV and aids infections, physical and mental disability or retardedness, drugabuse and alcoholism, juvenile delinquency and commitence of crimes, etc.
- The Government of India has undertaken certain policies to impart proper educationto the adolescent groups so that their talents are better channelized and properly utilized.

Q.3 Give an account of the occupational structure of India's population.

- **Ans**: The occupational structure of a country refers to the division of its workforce engaged in different sectors.
- The occupational composition of India's population show a large proportion of primary sector workers compared to secondary and tertiary sectors.
- About 54.6 per cent of total working population are cultivators and agricultural labourers, whereas only 3.8% of workers are engaged in household industries and 41.6 % are other workers
- Male workers out-number female workers in all the three sectors
- The number of female workers is relatively high in primary sector,
- But in the recent years there has been some improvement in work participation ofwomen in secondary and tertiary sectors.
- The proportion of workers in agricultural sector in india has shown a decline overthe last few decades (58.2% in 2001 to 54.6% in 2011)
- This indicates a shift of dependence of workers from agricultural to nonagricultural activities, which indicates a change in economy of the country.

QUESTION BANK

Q.Name the state with the highest and lowest population. (Delhi 2017)

Q.The decadal and annual growth rates of population in India are both very high and steadily increasing overtime. substantiate the statement. (CBSE 2018)

Q.The decades 1921-1951 are referred to as the period of steady growth of population,whereas the decades of 1951-81 are referred to as the period of population explosion in India. explain giving reasons. (C.B.S.E. 2014)

Q.Define the term "growth of population". Describe the four phases of populationgrowth in India with reference to its demographic history. (DELHI 2014).

Q.Why do the people of India display high degree of diversity in their language anddialects ?
Or
Q. "India is a land of linguistic diversity." support the statement. (OUTSIDE DELHI 2019)
Q.An uneven distribution of population suggests a close relationship between socio-population and physical and economic factors". support the statement with suitable examples. (C.B.S.E. DELHI 2017)

Q. "The spatial distribution of population in India is highly uneven." discuss with the helpof suitable examples. (C.B.S.E. 2017 Set-I)

Q. Study the following table and answer the questions that follow. (CBSE 2019).

Table 1.1 : Decadal Growth Rates in India, 1901-2011

Census Years	Total Population	Growth Rate*	
		Absolute Number	% of Growth
1901	238396327	----------	----------
1911	252093390	(+) 13697063	(+) 5.75
1921	251321213	(-) 772117	(-) 0.31
1931	278977238	(+) 27656025	(+) 11.60
1941	318660580	(+) 39683342	(+) 14.22
1951	361088090	(+) 42420485	(+) 13.31
1961	439234771	(+) 77682873	(+) 21.51
1971	548159652	(+) 108924881	(+) 24.80
1981	683329097	(+) 135169445	(+) 24.66
1991	846302688	(+) 162973591	(+) 23.85
2001	1028610328	(+) 182307640	(+) 21.54
2011**	1210193422	(+) 181583094	(+) 17.64

* Decadal growth rate: $g = \frac{P_2 - P_1}{P_1} \times 100$

where P_1 = population of the base year
P_2 = population of the present year

** Source : Census of India, 2011(Provisional)

.

(i) Which decade has shown the negative trend of growth rate of population?

(ii) Mention any two decades in which the percentage decadal growth has shown the regular downward trend.

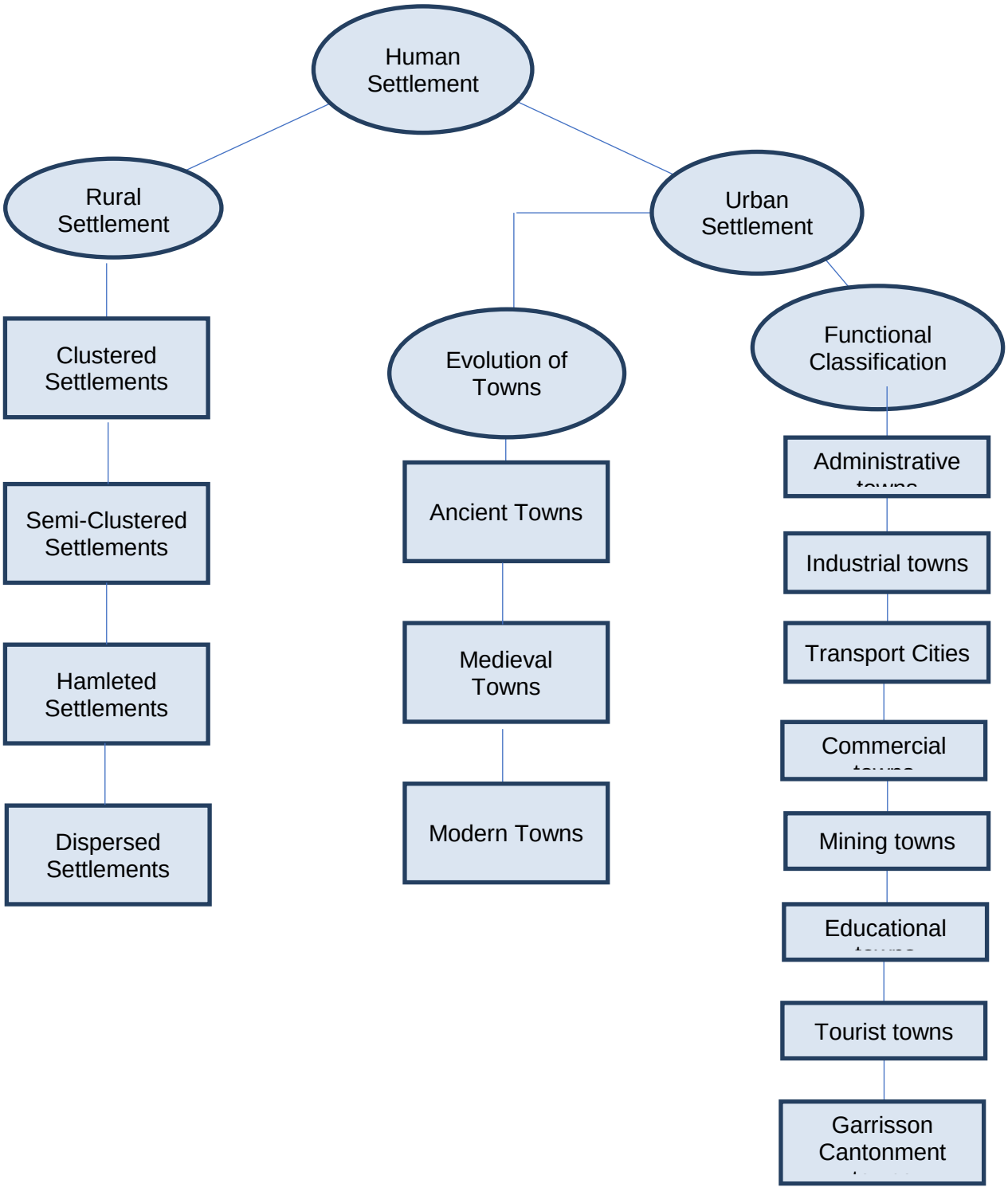
(iii) Explain any two reasons for the declining trend in the population growth rate.

PREPARED BY:

Sidharth Manish Kumar Shukla
PGT Geography
Kendriya Vidyalaya BSF Meru Hazaribagh

UNIT-II
CHAPTER-2 HUMAN SETTLEMENTS

Mind Map



Gist of the Chapter

Concept & features: Human Settlement is a **cluster of dwellings/group of houses** of any type or size where human beings live. Some important features of Human settlements are as follows:

- Human Settlements vary in size from hamlet to metropolitan cities and from small to large, closed or spaced, and they may also vary in terms of economic activities like as primary/secondary/tertiary activities etc.
- The sparsely located small settlements are called villages, specializing in agriculture or other primary activities.
- On the other hand, there are fewer but larger settlements which are termed as urban settlements specializing in secondary and tertiary activities

Difference between Rural and Urban Settlements

Sl. No.	Rural Settlements	Urban Settlements
1	Most of the people are engage in primary occupation	On the other hand, maximum people are engaged in other than primary activities.
2	Provide raw material to urban settlements i.e. milk products, vegetables, fruits etc.	Process the raw material, manufacturing of finished goods & provide variety of services.
3	Support small size of population	Support large size of population
4	Low density found	Found high density
5	Rural people are less mobile and therefore, social relations among them are intimate	In urban areas, way of life is complex and fast, and social relations are formal.

Types of Rural Settlement:-There are various factors and conditions responsible for having different types of rural settlements in India. These include:

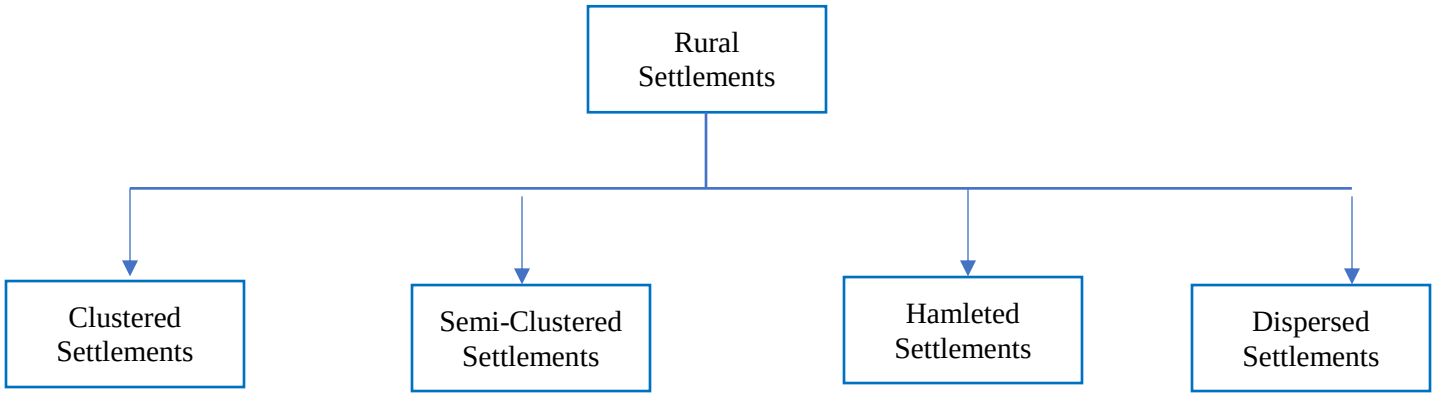
(i) **Physical features** – nature of terrain, altitude, climate and availability of water

(ii) **cultural and ethnic factors** – social structure, caste and religion

(iii) **security factors** – defence against thefts and robberies.

Rural settlements in India can broadly be put into **four** types:

- Clustered, agglomerated or nucleated,
- Semi-clustered or fragmented,
- Hamleted, and
- Dispersed or isolated.



The rural settlements may be classified into the following categories:

1. Clustered Settlements

- The houses are **compact, congested with narrow** streets.
- These Settlements develop generally in the fertile plains & river valleys.
- Recognizable pattern illustrates
- Different shapes such as geometric rectangular, radial, linear
- Sometimes defense may cause shape of the settlement
- Availability of water also decides the shape of the settlements
- These settlements have problems of sanitation and drainage.

2. Semi-Clustered Settlements

- Formed due to result from tendency of clustered in restricted area of dispersed settlements Segregation of large settlement may also cause
- Some people may be forced to live separately from the main village toward the other fringe of the village
- Dominance found in the group live in the center of the village
- People of lower strata live in out skirt of the village
- Most commonly found in Gujarat, Rajasthan and other states

3. Hamleted Settlements

- Hamleted settlements are fragmented into several units and they are physically separated from each other but contains a commom name.
- They are locally called panna, para Palli,Nagla ,Dhani
- They are motivated by social and ethnic factors of the area
- Found mostly in middle and lower Ganga plains

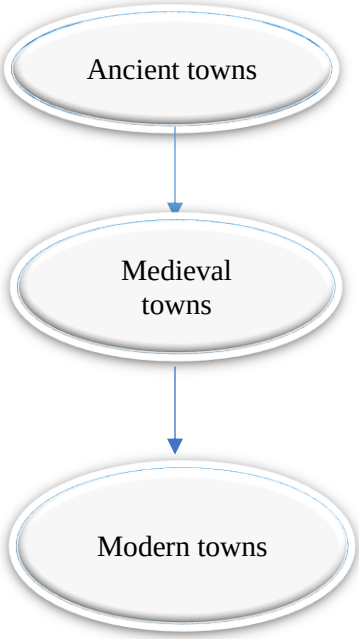
4. Dispersed Settlements

- These settlements develop in highland and semi-arid area.
- Density of population is low due to infertility of land & lack of resources.
- Houses are dispersed & scattered over the wide areas.
- It is due to nature of terrain, and land resource, water
- Found in Meghalaya, Uttaranchal, HP, Kerala.

Urban Settlements: Meaning, Concept & features

- They are fewer but larger settlements which are termed as urban settlements specializing in secondary and tertiary activities.
- Process the raw material, manufacturing of finished goods & provide variety of services.
- Compact and large in size
- Non-Agriculture, economic activities, administrative activities
- Exchange of goods and services
- Directly linked with rural settlements

Evolution of Cities: According to the urban historians' Indian towns are classified into three categories as per their evolution.



1.Ancient towns

- These towns were developed and are in existence at least for over 2000 years.
- Most of the religious and cultural towns were developed during ancient period.
- Patliputra, Ujjain, Varanasi, Mathura, Madurai are some important ancient towns.

2.Medieval Towns

- These towns have developed during medieval period.
- Most of the medieval towns developed as headquarters of principalities and kingdoms
- These towns were developed on the ruins of ancient towns like forts
- The important towns are Delhi, Hyderabad, Jaipur, Lucknow, Agra and Nagpur

3.Modern Towns

- The British and other Europeans have developed number of towns in India
- They developed these towns mainly for administration & some towns were developed as port towns to drag mineral resources to the Europe.
- They first developed some trading port such a Surat, Daman, Goa Pondicherry etc
- Later they developed principle nodes of Mumbai, Chennai and Kolkata
- They established administrative centres, hill towns as summer resorts and made them as military areas

Urbanisation in India :-

- The level of urbanisation is measured in terms of percentage of urban population to total population.
- The level of urbanisation in India in 2011 was 31.16 per cent, which is quite low in comparison to developed countries.

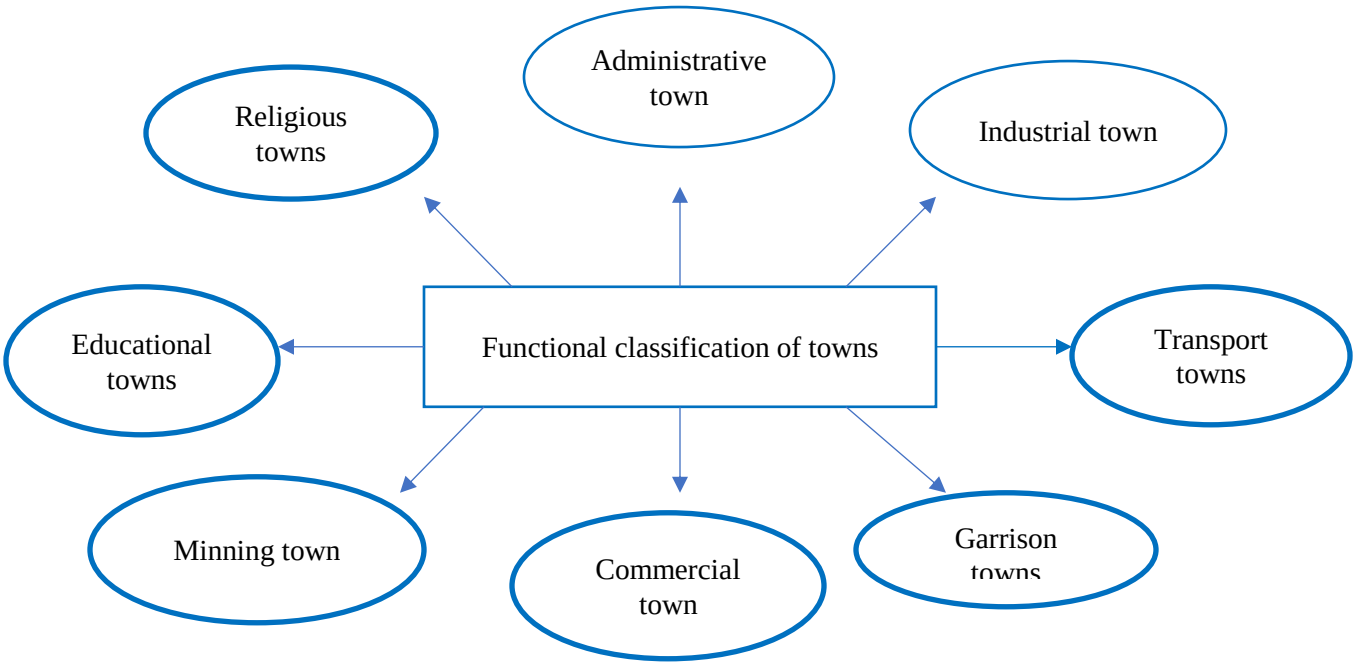
Smart Cities Mission: Objective & features

The objectives of smart cities mission are as follows:

1. To drive economic growth and improve quality of life of people by enabling local area development using technology, especially technology leads to smart solution.
2. These application of smart solution will enable cities to use technology ,information and data to improve infrastructure and services.
3. This comprehensive development will improve quality of life,create employment and enhances income for all especially poor & disadvantage sections of society.

Functional Classification of Towns

Apart from their role as central or nodal places, many towns and cities perform specialised services. Some towns and cities specialise in certain functions and they are known for some specific activities, products or services. However, each town performs a number of functions. On the basis of dominant or specialized functions, Indian cities and towns can be broadly classified as follows**:**



1. Administrative towns:

- All capitals of states with national capital
- Being centralized location they can gain this distinction based on their performance.
- New Delhi, Gandhinagar, Chandigarh, Bhopal are the administrative towns.

2. Industrial towns:

* These towns are famous for the processing of raw materials & production of finished goods.
* Mumbai. Salem, Coimbatore Modinagar, Jamshedpur

3. Transport towns: They may be ports primarily engaged in export and import activities Kandla, Cochin, vizag or hubs of inland transport, such as Agra, Dhulia,Mughalsarai, Itarsi, Katni, etc.

4. Commercial towns:

* Towns and cities specialising in trade and commerce are kept in this class.
* Kolkata, Saharanpur, Satna, etc., are some examples

5. Mining towns: These towns have developed in mineral rich areas such as Raniganj, Jharia, Digboi, Ankaleshwar, Singrauli, etc Digboi, Ranigunj, Jharia

6. Garrison cantonment towns: These towns emerged as garrisson towns such as Ambala, Jalandhar, Mhow, Babina, Udhampur, etc

7. Educational towns: Starting as centres of education, some of the towns have grown into major campus towns, such as Roorki, Varanasi, Aligarh, Pilani, Allahabad, etc

8. Religious cultural towns: These towns are generally developed along the bank of rivers ,sea ports hilly regions.

Puri,Dwarka, Puskar,Ajmer Gaya,Varansi,Prayag,Madurai,Tipupati are some examples of religious town

9. Tourist towns: Nainital, Mussoorie, Shimla, Pachmarhi, Jodhpur, Jaisalmer, Udagamandalam (Ooty), Mount Abu are some of the tourist destination & are considered as tourist towns.

Question with Answers (1 Marks)

MCQs Based Questions

Q 1. Which among the following is not an ancient city?

a. Varanasi
b. Harappa
c. Pataliputra
d. Madurai

Ans. b

Q 2. Match the following

1. Mining town	A. Coimbatore	
2. Industrial town	B. Ambala	
3. Garrison town	C. Digboi	
4. Educational town	D. Varanasi	

a. 1A,2C,3D,4B
b. 1C,2A,3B,4D
c. 1B,2C,3A,4D
d. 1C,2B,3D,4A

Ans. b

Q 3. The clustered rural settlement is

a. Closely built up houses
b. Sparsely built up houses
c. Scattered houses
d. Infinite built up houses

Ans. a

Q 4. Cities having more than 5 million population are known as

a. Metropolitan city
b. Mega city
c. Class I city
d. Million city

Ans. b

Q 5. A town containing military base is known as

a. Defense town
b. Military town

c. Garrison town
d. Fort town

Ans. c

Q 6. Ghaziabad, Rohtak, Gurugram are the examples of-

a. Port towns
b. Garrison towns
c. Satellite towns
d. Transport towns

Ans. c

Q 7. Nainital, Mussoorie, Shimla are

a. Transport town
b. Recreational town
c. Tourist town
d. Holiday town

Ans. c

Q 8. Which of these is not a medieval town?

a. Delhi
b. Hyderabad
c. Jaipur
d. Madurai

Ans. d

Q 9. Nagaland is a state in India having nucleated settlement. Identify the reason behind the same

a. Tribal tradition
b. Security reason
c. Scarcity of water
d. Caste

Ans. b

Q 10. In which one of the following environments does NOT one expect the presence of dispersed rural settlements-?

a. Alluvial plain of Ganga
b. Forest area of India
c. Desert area of Rajasthan
d. Hilly area of North –East

Ans. A

Q 11. How many metropolitan cities are there in India?

a. 468
b. 53
c. 60
d. 4

Ans. B

Q 12. Consider the following statements and choose the correct answer:

I. Rural and urban settlements differ in terms of social relationship, attitude and outlook.

II. Rural people are less mobile and social relations among them are intimate whereas way of life is complex and, social relations are formal in urban areas.

a. Only I is correct.
b. Only II is correct
c. Both the statements are incorrect
d. Both statements are correct and statement II correctly explains the statement

Ans. d

Q 13. Assertion (A):There are number of towns in India having historical background spanningover 2000 years

Reason(R):These towns have been developed by Britishers and Europeans.

a. Only Assertion is correct.
b. Only Reason is correct.
c. Both Assertion and Reason is correct and Reason is correct explanation of Assertion.
d. Both Assertion and Reason correct but Reason is not the correct explanation of Assertion.

Ans. a

Q 14. Consider the following statements and choose the correct answer:

I. The clustered rural settlements are fragmented into several units physically separated from each other bearing a common name.

II. These units are locally called panna, para, palli, nagla, dhani, etc. in various parts of the country.

a. Only I is correct.
b. Only II is correct
c. Both the statements are incorrect
d. Both statements are correct and statement II correctly explains the statement

Ans. c

Q 15. The number of towns in India is:

a. 4161
b. 5161
c. 6161
d. 7161

Ans. b

Q 16. Which one of the following is NOT part of the definition of a town as per the census of

India?

a. Population density of 400 persons per sq km.
b. Presence of municipality, corporation, etc.
c. More than 75% of the population engaged in the primary sector
d. Population size of more than 5,000 persons

Ans. c

Q 17. Urbanization is expressed in terms of

a. Absolute number
b. Ratio
c. percentage
d. none of above

Ans. C

Q 18. The type of settlements found in the lower valleys of the Himalayas are

a. Semi-clustered
b. Hamleted
c. Dispersed
d. Clustered

Ans. b

Q 19. Which one of the following towns is NOT located on a river bank?

a. Agra
b. Patna
c. Bhopal
d. Kolkata

Ans. c

Q 20. In which one of the following environments does one expect the presence of dispersed rural settlements?

a. Alluvial plains of Ganga
b. Arid and semi-arid regions of Rajasthan
c. Lower valleys of Himalayas
d. Forests and hills in north-east

Ans. d

Case Based Questions

Q 21. Settlements vary in size and type. They range from a hamlet to metropolitan cities. With size, the economic character and social structure of settlements changes and so do its ecologyand technology. Settlements could be small and sparsely spaced; they may also be large and closely spaced. The sparsely located small settlements are called villages, specializing in agriculture or other primary activities. On the other hand, there are fewer but larger settlements which are termed as urban settlements specializing in secondary and tertiary activities. The basic differences between rural and urban settlements are as follows:

• The rural settlements derive their life support or basic economic needs from land based primary economic activities, whereas, urban settlements, depend on processing of raw materials and manufacturing of finished goods on the one hand and a variety of services on the other.

• Cities act as nodes of economic growth, provide goods and services not only to urban dwellers but also to the people of the rural settlements in their hinterlands in return for food and raw materials. This functional relationship between the urban and rural settlements takes placethrough transport and communication network.

• Rural and urban settlements differ in terms of social relationship, attitude and outlook. Rural people are less mobile and therefore, social relations among them are intimate. In urban areas, on the other hand, way of life is complex and fast, and social relations are formal

I. Rural and urban settlements differ in terms of:

a. economic activities

b. differ in terms of social relationships

c. attitude and outlook

d. all of these

Ans. D

II. The sparsely located small settlements are called ..... , specializing in agriculture or other primary activities.

a. towns

b. cities

c. villages

d. None of these.

Ans. C

III. Rural people are …… relationship among them are ……..

a. less mobile, intimate

b. more mobile, less intimate

c. less active, intimate

d. more active, less intimate

Ans. A

IV. Which of these statements is not true?

a. Villages are rural settlements that specialize in primary activities such as forestry, farming, fishing, diary, etc.

b. Rural settlements are centers of manufacturing finished goods

c. Cities provide goods and services to both urban dwellers and rural population living nearby

d. Urban settlements are based on tertiary activities.

Ans. B

Source Based Questions

Q 22. Census of India classifies urban centres into six classes. Urban centre with population of more than one lakh is called a city or class I town. Cities accommodating population size between one to five million are called metropolitan cities and more than five million are mega cities. Majority of metropolitan and mega cities are urban agglomerations. An urban agglomeration may consist of any one of the following three combinations: (i) a town and its adjoining urban outgrowths, (ii) two or more contiguous towns with or without their outgrowths, and (iii) a city and one or more adjoining towns with their outgrowths together forming a contiguous spread. It is evident from Table 4.2 that more than 60 per cent of urban population in India lives in Class I towns. Out of 468 cities, 53 cities/ urban agglomerations are metropolitan cities. Six of them are mega cities with population over five million each. More than one-fifth (21.0%) of urban population live in these mega cities. Among them, Greater Mumbai is the largest agglomeration with 18.4 million people. Delhi, Kolkata, Chennai, Bengaluru and Hyderabad are other mega cities in the country.

Q.1 The census of India classifies the urban center in to how many classes?

Ans. Six classes

Q.2 What do you mean by urban agglomeration?

Ans. An urban agglomeration may consist of (i) a town and its adjoining urban outgrowths, (ii) two or more contiguous towns with or without their outgrowths, and (iii) a city and one or more adjoining towns with their outgrowths together forming a contiguous spread.

Q.3 Name the urban agglomeration which is largest agglomeration of India?

Ans. Greater Mumbai

Q 23. *Ancient Towns:* There are number of towns in India having historical background spanning over 2000 years. Most of them developed as religious and cultural centres. Varanasi is one of the important towns among these. Prayag (Allahabad), Pataliputra (Patna), Madurai are some other examples of ancient towns in the country.
Medieval Towns: About 100 of the existing towns have their roots in the medieval period. Most of them developed as headquarters of principalities and kingdoms. These are fort towns which came up on the ruins of ancient towns. Important among them are Delhi, Hyderabad, Jaipur, Lucknow, Agra and Nagpur.
Modern Towns: The British and other Europeans have developed a number of towns in India. Starting their foothold on coastal locations, they first developed some trading ports such as Surat, Daman, Goa, Pondicherry, etc. The British later consolidated their hold around three principal nodes – Mumbai (Bombay), Chennai (Madras), and Kolkata (Calcutta) – and built them in the British style.

Q.1 What do you mean by ancient town?

Ans. The towns have a historical background spanning over 2000 years. Most of them developedas religious and cultural centers.

Q.2 Hyderabad is the example of which types of towns?

Ans. Medieval Towns

Q.3 Who has set up the modern towns in India?

Ans. The British and other Europeans have developed the modern towns in India.

Very Short Answer Question (3 Marks)

Q 24. Distinguish between rural and urban settlements?

Ans. Rural Settlement:

- Primary activities are main occupation in these settlements and 75% population is engaged in primary occupation
- Population size is low in these settlements
- Rural people are less dynamic and social relations are intimate.

Urban Settlement

- Non agriculture work is the main occupation in these settlements and 75%
- Population is engaged in these activities.
- Population size is large in these settlements
- Urban people are dynamic and their social relations are formal and complex.

Q 25. Write three differences between clustered and dispersed settlements of India.

Ans. Clustered

- These settlements are found in fertile plains
- Streets are not well drained
- Houses are close to each other and their size is small.

Dispersed

- These settlements are found in hilly regions or desert areas
- Settlements are neat and clean with drainage arrangements
- Houses are big and are located at gaps

Q 26. Write the factors which affect the types of settlements in India?

Ans. (i) Physical feature-

A- Nature of land-Relief

B- Altitude

C- Climate and water supply.

(ii) Cultural and human factors-

A- Caste

B- Religion.

(iii)Security factors

A- Political disturbances

B- War.

Q 27. Name those towns which have become mega cities?

Ans. The following towns have become Mega Cities : Greater Mumbai, Kolkata, Delhi, Chennai, Bangalore and Hyderabad.

Q 28. What are garrison towns? What is their function?

Ans. Garrison towns are those towns which are established for security functions during the British rule. Their main function is related to defense. For example, Ambala, Jalandhar, Babina, etc.

Q 29. Define human settlements.
Ans. Human settlement means clusters of dwelling of any type or size where human beings live. It refers to an organised colony of human beings together with buildings in which they live oruse and the paths and streets over which they travel.

Q 30. Name the towns that have developed in India after independence?
Ans. Modern towns have developed in India after independence. The British and other Europeans have developed a number of towns in India. They first developed some trading ports such as Surat, Daman, Goa.

Q 31. What factors are responsible for different types of human settlements?
Ans. There are various factors and conditions responsible for having different types of rural settlements in India. These include:

- Physical features – nature of terrain, altitude, climate and availability of water
- Cultural and ethnic factors – social structure, caste and religion
- Security factors – defence against thefts and robberies

Long Answer Question (5 marks)

Q 32. Discuss the features of different types of rural settlements with examples.
Ans. The Different types of rural settlements are:
1. **Clustered Settlements**-It is a compact or closely built up area of houses. Such Settlements are generally found in fertile alluvial plains and in the north-eastern states. ex-Gangetic plains of U.P.
2. **Semi-Clustered Settlements**-In such settlements, the land-owning and dominant community occupies the central part of the main village,whereas people of lower strata of society and manual workers settle on the outer flanks of the village. ex-Gujarat andRajasthan plains.
3. **Hamleted Settlements**-When Settlement is fragmented into several units bearing a common name. These units are locally called' Panna, Para, Palli, Nagla, Dhani etc.ex-Chhattisgarh and lower valleys of the Himalayas.
4. **Dispersed Settlements**-Such settlements appear in the form of isolated huts or hamletsof few huts in remote jungles or on small hills with farms or pasture on the slopes.ex-Meghalaya,Uttarakhand,Himachal Pradesh.

Q 33. Describe functional classification of town.
Ans. Functional Classification of Towns

On the basis of dominant or specialised functions, Indian cities and towns can be broadly classified as follows:

- Administrative towns and cities-Towns supporting administrative headquarters of higher order are administrative towns, such as Chandigarh, New Delhi, Bhopal, Shillong, Guwahati, Imphal, Srinagar, Gandhinagar,Jaipur Chennai, etc.
- Industrial towns- Industries constitute prime motive force of these cities such as Mumbai,Salem, Coimbatore,Modinagar, Jamshedpur, Hugli, Bhilai, etc.

- Transport Cities-They may be ports primarily engaged in export and import activities such as Kandla, Kochi,Kozhikode, Vishakhapatnam, etc. or hubs of transport such as Agra, Dhulia, Mughal Sarai, Itarsi, Katni,etc.
- Commercial towns-Towns and cities specialising in trade and commerce are kept in this class. Kolkata, Saharanpur, Satna, etc. are some examples.
- Mining towns- These towns have developed in mineral rich areas such as Raniganj, Jharia, Digboi, Ankaleshwar, Singrauli, etc.
- Garrisson Cantonment towns- These towns emerged as garrisson towns such as Ambala, Jalandhar, Mhow, Babina, Udhampur, etc.
- Educational towns- Starting as centres of education, some of the towns have grown into major campus towns such as Roorki, Varanasi, Aligarh, Pilani, Allahabad etc.
- Religious and cultural towns- Varanasi, Mathura, Amritsar, Madurai, Puri, Ajmer, Pushkar,Tirupati, Kurukshetra,Haridwar, Ujjain came to prominence due to their religious/cultural Significance.

Q 34. Discuss the classification of Indian towns on the basis of their evolution in differentperiods. Also give their features.

Ans. The classification of Indian towns on the basis of their evolution in different periods are as follows :

a. Ancient Towns:

i. The number of towns in India have a historical background spanning over 2000 years. Most of them have developed as religious or cultural centres.

ii. One of the important towns among the ancient towns is Varanasi.

iii. Examples of ancient towns: Prayag (Allahabad) Pataliputra (Patna), Madurai.

b. **Medieval Towns**:

i. In the medieval period there are about 100 existing towns.

ii. Most of them are headquarters of kingdoms and principalities. These are fort towns which came up on the ruins of ancient towns.

c. Modern Towns:

i. In India, European and British and European developed Modern Towns.

ii. Starting their foothold on coastal locations they first developed some trading ports such as Surat, Daman and Diu, Goa, Pondicherry, etc.

iii. Then the British consolidated their hold around three principal modern towns Mumbai (Bombay), Chennai (Madras) and Kolkata (Calcutta) and built them in British style.

iv. Rapidly extending their domination either directly or through control over the princely states they established their administrative centres, hill towns as summer resorts and added administrative, new civil and military areas to them.

v. Towns based on modern industries also evolved after 1850. Example: Jamshedpur.

Q 35. Differentiate between Hamletled and Dispersed Survival Settlements of India?

Ans. Hamletled settlements: When a village is fragmented on social and ethnic factors, its units are separated from each other. They bear a common name. These units are called pauna, Para, Palli, nagla and dhani. Such villages are more frequently found in the middle and lower Ganga plains.

Dispersed settlements: Isolated settlements are called dispersed settlements. These are found in forests, on hill slopes and fragmente fields. These include hamlets of few huts. Dispersion of settlements is caused by extremely fragmented nature of the terrain. Many areas of Meghalaya,

Uttaranchal, Himachal Pradesh and Kerala have this type of settlement.

Question Bank

Very Short Answer Question (3 Marks)

Q 36. Name two most ancient town in India. (C.B.S.E. 2014)

Q 37. Give any two examples of mining towns in India, (C.B.S.E. 2013)

Q 38. Name any two towns of India, initially developed as mining towns. (C.B.S.E. 2017)

Q 39. Name any one area of hamleted settlement in India. (C.B.S.E. 2019)

Q 40. How does an agglomeration develop?

Q 41. What are salient characteristics of Indian cities?

Long Answer Question (5 marks)

Q 42. Discuss the factors that determine the type of rural settlements. (C.B.S.E. 2011)

Q 43. Discuss the factors that determine the type of rural settlements. (C.B.S.E. 2011)

Q 44. Differentiate between Hamletled and Dispersed Survival Settlements of India? (C.B.S.E. 2016)

Q 45. Classify Indian Towns on the basis of their evolution in three different periods. Name one town of each period. (C.B.S.E. 2009)

Q 46. What is the basic difference between rural and urban settlements? (C.B.S.E. 2017)

Q 47. 'Towns act as nodes of economic growth.' Discuss.

Q 48. Examine the level of urbanization in India after Independence. (Delhi 2019)

Q 49. What is the basic difference between rural and urban settlements? (C.B.S.E. Delhi 2017)

Q 50. Differentiate between Hamletled and Dispersed Survival Settlements of India. (C.B.S.E. 2016)

Prepared by:

Sidharth Manish Kumar Shukla
PGT (Geography)
Kendriya Vidyalaya BSF Meru Hazaribagh
Jharkhand -825317

Chapter 3 - Land Resources and Agriculture

Summary of the text:-

Land use: Land use is the need based use of the total land available in any region or country.

General Land Use Classification:-

- Area under forests
- Wasteland and wasteland
- Land used for non-agricultural purposes
- Permanent pasture area
- Area under various crops and groves
- Cultivable waste land
- Current fallow land
- Ancient fallow land
- Net sown area

Land Use Change in India:-

The nature of land use also changes with the change in requirement. There were three changes in the Indian land use pattern which were influenced by the following factors

1. Size of Economy:-

2.Structure of economy

3. The contribution of agricultural activities decreases over time. The share of agriculture has declined. The number of people nourished by agriculture is increasing.

There is an increase in land use in four categories.

1 . Area under forest

2. Area under non-agricultural use

3. Current Fallow Land

4. Pure sown area

Land use has declined in four areas

1. Barren and barren land

2. Arable wasteland

3. Area under pastures and tree crops

4. Return land.

Common Property Resources (Shared Property Resources)

Community use of CPR is done by general purpose/state owned societies

2. Fodder is available for livestock fuel for households

3. Small forest products such as fruits, nuts, fiber and medicinal plants are produced

4. Every member has the right to enter and the right to use and take care of it is the responsibility of the whole society .

Agricultural Land Use in India

1. The contribution of land to agricultural use is more important

2. Lack of access to land gives rise to poverty

3. Productivity depends on the quality of land

4. Land ownership in rural areas has social value

Total cultivable land = net sown area + fallow land + cultivable wasteland

1. Since no additional land is available, only high yielding varieties can increase productivity

2. Crop density in the land can be increased manifold by providing irrigation

Harvest season or agricultural seasons

There are **three** cropping seasons or agricultural seasons found in India
1.Kharif - June to September - Rice, cotton, bajra, maize, jowar arhar
2.Rabi - October to March - Wheat, Gram, Torai, Mustard.barley
3.Zayed – April to June – Vegetation, vegetables, fruits , fodder crops

Types of Agriculture

● **Protected irrigation**- Acts as a supplementary source of water in addition to rainfall. This type of irrigation strategy is to provide moisture to the soil in the maximum possible area.
● **Productive irrigation** means providing sufficient soil moisture in the harvest season to achieve high productivity.
● **Dryland agriculture** is mainly confined to areas with annual rainfall of less than 75 cm.
● **Wetland agriculture** receives more rainfall than the soil moisture requirement of plants during the rainy season. Such areas may face threats of flooding and soil erosion.

Food grains - grains:

Rice cleared of the husk
● A crop of tropical humid areas
● Grown up to an altitude of 2000 meters above sea level.
● 3000 varieties are grown
● Grown in West Bengal in three seasons AUS, AMAN, and BORO
● In the Himalayas and northwestern parts of the country, it is grown as a kharif crop during the south-west monsoon season.
● 22% of rice production in India, second only to China. ● Rice is cultivated in 1/4 of the area.
● Leading States- WB, PUN UP
● Punjab, Tamil Nadu, Haryana, Andhra Pradesh, Telangana , West Bengal and Kerala have higher yield levels.

Wheat:
● The second most important crop,
● 12% of production comes from India,
● It is mainly a crop of temperate regions.
● It is usually grown in winter. Of course. Rabi season.
● Concentrated in the northern and central regions of the country i.e. The Indo-Gangetic plain, the Malwa plateau and the Himalayas rise to an altitude of 2,700 meters.
● Grown in north and central India - irrigation is necessary.
● Rainfed crops in the Himalayan region.
● Wheat is cultivated on 14% of the area.
● Major producers - UP, Poon, Har, Raj and MP Jowar:
● 5.3% of the cropped area is under this crop.
● The main food crop in the semiarid regions of central and southern India.
● Half of the production is in Maharashtra alone,
The others are Karnataka, Madhya Pradesh, Andhra Pradesh and Telangana.

Millets:
● Hot and dry climatic conditions in the northwestern and western parts of the country.
● Grown as drought resistant crop, ● It is cultivated alone or as a mixed crop, ● 5.2% of the total cropped area.
Major Producers – Maharashtra, Gujarat, Rajasthan, Haryana

Maize:
● Cultivate any type of land.
● It is a food and food crop,
● 3.6% of the total cropped area, it is grown all over India,
● Major producers - Madhya Pradesh, Andhra Pradesh, Telangana, Karnataka, Rajasthan and Uttar Pradesh
● Pulses yields are higher in southern states:
● Rich source of protein, ● Increase natural fertility.
● Used in crop cycle,
● India is a major producer of pulses. Concentrated in dry lands,
● 11% of the total cropped area.
● Gram, pigeon pea are the major crops.
■ Cultivated in the subtropical region,
Rabi season - rainfed crops - central, western and north-western parts of the country.
■ 2.8% of total cropped area,
■ Major producers are MP, UP, MH, AP, Telangana and Raj

Tur (Arhar)
● The second important pulses crop,
● It is also called red gram or arhar dal,
● Rainfed crops,
● 2% of total cropped area,
Maharashtra alone accounts for about one-third of the total production of pigeon pea. ● Other major producers are- UP, KK Gujarat and MP

oilseed
● Extract edible oil.
● The arid lands of Malwa Plateau, Marathwada, Gujarat, Rajasthan, Telangana , Rayalaseema region

of Andhra Pradesh and Karnataka Plateau are the oilseed producing regions of India.
● Occupies about 14 percent of the total cropped area in the country

Peanuts:

India accounts for 18.8% of the world's total production.
● Rain-based,
● In the Kharif season,
● 3.6% of the total cropped area,
● Major producers Gujarat, Tamil Nadu, Telangana, AP, KA and MH

Rapeseed, mustard :

● It contains rye, mustard, toria and taramira,
● These are subtropical crops,
● Rabi is grown in season, sensitive to frost,
● Irrigated crops,
● Under 2/3 irrigation
● 2.5% of the cropped area is under this crop.
● Major producers are RAJ, UP, HAR, WB, MP
Other oilseeds ● Soybean is mostly grown in Madhya Pradesh and Maharashtra
● Sunflower cultivation is concentrated in Karnataka, Andhra Pradesh, Telangana and surrounding areas of Maharashtra.

Fiber crops;

Cotton: ● Grown in kharif season,
● Semiarid region,
● Grown with short fibers and long fibers,
● Black soil is suitable,
● India ranks fourth in the world. After China, US and Pakistan.
● 8.3% of world production. ● 4.7% of the total cropped area.
● Three cotton producing regions, namely. Punjab, Haryana and parts of north Rajasthan in the northwest,
● Gujarat and Maharashtra in the west and ● Plateaus of Andhra Pradesh, Karnataka and Tamil Nadu
● The major producers of this crop are Maharashtra, Gujarat, Andhra Pradesh, Punjab and Haryana

Jute: Used for packing materials,
● Cash crop - in West Bengal and adjoining eastern parts of the country.
India produces 3/5 of the world's production.
● This crop covers 0.5% of the total cropped area,
● About three-fourths of the country's production takes place in West Bengal.
● Bihar and Assam are other jute producing regions.
Other Crops

sugar-cane

Tropical crops,
● Cultivated in sub-humid areas,
● Irrigated crops,
● India is the second largest producer,
23% of the world's production is from India.
● Major manufacturers are UP, MS, KK, TN , AP

Tea:

Crop crop,
● Tea leaves are high in caffeine and tannins. ● Growing in hilly areas requires heavy rainfall, ● It was started by the British in Assam in 1840.
Developed Darjeeling, Jalpaiguri, Nilgiris, Western Ghats, ● 28% of world production comes from India.
● India ranks third after Sri Lanka and China.

● This crop covers 53.2% of the total cropped area.
● The leading manufacturers are WB and TN

Coffee;

● Three varieties Arabica, Robusta, Liberica, ● 4.3% of world production comes from India.
● Sixth place after Brazil, Vietnam, Colombia, Indonesia, Mexico.
● Leading manufacturer KK, TN,

Agriculture is a strategy for growth, India takes steps to increase production

1. Transition from cash crops to food grains
2. Increase crop density
3. Increase cultivable area
4. Improve irrigation
5. Intensive Agriculture District Programme and Intensive Agriculture Sector Programme launched
6. Use of HYV seeds, fertilizers, irrigation, pesticides
7. Introduction to Green Revolution
8. Large agricultural inputs

Development of agricultural production and technology

1. Increase in production and yield (wheat, rice, oilseeds, sugarcane, tea pulses, cattle , milk and groundnut)
2. Expansion of the burning area.
3. Use of HYV seeds
4. Use of modern agricultural technology
5. Increased consumption of chemical fertilizers

Green Revolution

Achievements of Green Revolution:

1. There has been a significant increase in agricultural production and productivity.
2. The country has become self-sufficient in food grain production.
3. The income of farmers has increased and their standard of living has also improved.
4. Wheat production increased six-fold i.e. 562%
5. Rice production increased three times.
6. Supply of raw materials to sugarcane, cotton etc. industries. A significant increase was recorded.
7. Food security helped the nation pursue other policies to increase its prestige in the commodity of nations.
8. Increase in income levels makes villagers more active in other areas of life.
9. There was a lot of diversity in agricultural products, as a result of which the price did not increase much.
10. Changes in the thinking process of farmers.
11. Agricultural products diversified a lot, resulting in no much increase in prices.
12. Changes in the thinking process of farmers.

Problems of Indian Agriculture

1. Dependence on erratic monsoons
2. Low productivity
3. Financial resource constraints and indebtedness
4. Lack of land reforms
5. Fragmentation of land holdings
6. Lack of commercialization
7. Huge underemployment
8. Degradation of cultivable land

Section-I (Short Answer Questions)

Q1. Who keeps records of land use in India?
Answer- Land Revenue Department.

Q2. Who measures geographical area in India?
North-India Survey

Q3. Explain the three types of changes that affect land use in India. There are three types of changes affecting land use in India:
a) Size of economy (prices for all goods and services)
b) Structure of the economy (proportion of different sectors)
c) Pressure on agricultural land (more food for more population. (with the same percentage of land)

Question 4. What are common property resources?
Answer- It is the natural resource of the community, where every member has the right to access and use. Former pasture land, village water bodies, public places, etc.

Q5. What is the importance of land resources for people dependent on agriculture? or
How is agricultural land important for the farmers of India? Answer- Importance of land for farmers-
a) Land contributes more to agricultural production than the production of other sectors.
b) Land quality affects the productivity of agriculture.
c) Land ownership has social value and social status.

Q6. What is Crop Intensification?
Answer: This is to increase the number. The number of crops from the same field during an agricultural year.
or
CI = GCA/NSA x 100
(*CI = Crop Density and Gross Crop Area/Area) Pure sown area)

Short Answer Type Questions: (3 marks)

Q7.What are any two characteristics of each of the three cropping seasons of India?

Answer-

Example of type (crops)

Harvest season	Time period	Examples (crops)
autumnal crop	June-September	Rice, cotton
The crop reaped in spring season	October-March	Wheat, gram
Zaid	April-May	Fruits and vegetables

Q8.What is green revolution?

The revolution that took place in India during the 1960s was aimed at increasing agricultural production by increasing the use of HYV seeds, fertilizers and modern irrigation methods.

Q9. Which crop is known as 'Red Grain' or 'Pigeon ' and is in which state of India?

Its biggest producer?

Answer- Tur (arhar) and the largest producer is Maharashtra (33% of the total of the country).

Q10. Classify Indian cultivars into two groups based on the main source of moisture for crops.

Answer-

Type of farming

1. Irrigated farming, 2.Rainfed farming

Protective irrigation

*To protect the crop from moisture loss

* Water input/unit area is more productive irrigation

*To increase productivity

*Water input/unit area is less dryland farming

*Annual rainfall less than 75 cm

*Drought resistant crops

They are grown such as ragi, bajra etc. Wetland farming

*Annual rainfall more than 75 cm

* Water intensive crops are grown

Such as rice, jute etc.

Q11.Name the two fibrous crops?

Answer- Jute and Cotton

Long Answer Questions: (5 marks)

Q1.Explain the different land use categories kept in land-revenue records in India.

Answer- Land Use Categories-

No.No. Characteristics of land use categories

1 Forests are classified as forest area and forest cover

2 Barren and barren land Land which is not cultivated

(e.g. mountains, deserts, ravines, etc.)

3 The land was put into non-agriculture.

Uses land under settlements, industries, shops.

Area under permanent pastures, gram panchayat or land under government.

5 Area under trees, crops

and land under grove gardens (mostly private)

6 Cultivable wasteland Fallow land for more than 5 years

7 Present fallow land remained fallow for less than 1 year

Apart from 8

The present fallow land remained fallow for more than 1 year

Less than 5 years.

9 Pure sown area The land on which crops are grown.

Q2.Describe any five major problems of Indian agriculture? Answer- Major problems of Indian agriculture-

1) Dependence on erratic monsoons

2) Low productivity

3) Problem of financial resources

4) Lack of land reforms

5) Small farm size

6) Degradation of cultivable land

7) Massive underemployment

Q.3 Write a brief note on the following crops:

a) Rice b) Wheat c) Cotton d) Tea e) Coffee Answer-

Crops Climate

Soil of the area

Type of production

(%) to cut

Season Leading

builder

Rice tropical

Humid area alluvial 25% (India)

22% (World) Purchase

(Monsoon) Punjab,

P.Bengal

Wheat temperate

Loam Area 14% (India)

12% (World) Rabi

(Winter) Punjab,

Haryana

Cotton tropical semi-

Dry area black 4.7% (India)

8.3% (world) Kharif Gujarat,

Maharashtra

TEA Tropical Wetland Region

Good drainage on mountain slopes

The soil produces 28% (world) Assam

53% of India's kharis (plantations)

Crop) Assam, West Bengal

Tropical humid region on coffee mountain slopes, soil with good drainage produces 3.2% (world)

Karnataka

75% of India's kharif (plantation crop) Karnataka, Kerala

Q4.What strategies were adopted for agricultural development in India after independence?

Answer- The strategies adopted for agricultural development after independence in India are-

1) Transition from cash crops to food crops

2) Increase crop intensity

3) Expansion of cultivable area

4) Many progs. Launched (e.g . IADP, IAAP etc.)

5) Use of HYV seeds of wheat (Mexico) and rice (Philippines)

6) Use of technology

7) Irrigation facilities increased

8) Use of chemical fertilizers

Section-C Map Tasks

Q1.- Show the following on the outline political map of India:

1. Largest rice producing state. (West Bengal)

2. The largest wheat producing state (U.S.P.)

3. Largest cotton producing state (Gujarat)

4. Largest Jute Producing State (West Bengal)

5. Largest Tea Producing State (Assam)

6. Largest coffee producing state Karnataka)

7. Largest sugarcane producing state (U.S.P.)

8. Largest Jowar Producing State (Maharashtra)

9. Largest Pulses Producing State (Madhya Pradesh)

Answer- The answers to the above question are written in front of them. Outline of India Mark the north (states) on the political outline map .

Chapter 4 Water Resources

Water Resources of India

- India contributes about 2.45% world's geographical area, the 4% of the world's water resources and about 16% of world population.
- India receives water from annual precipitation i.e. 4000 cubic km, and surface and groundwater sources i.e. 1869 cubic km. But only 60% (1122 cubic km) from these two sources of water are beneficial and usable.

Surface Water Resources

- River, lakes, ponds and tanks are four main sources of surface water resources in India.
- About 10,360 number of river and tributaries existed here and each tributary is more than 1.6 km long.
- The mean annual flow in all the river basin in India is estimated to be 1,869 cubic km. But only about 690 cubic km or 32% of these water can be utilised due to topographical, hydrological and other constraints.
- Size of catchment area/river basin and rainfall in its catchment area control the flow of water in a river. Water availability in rivers is more during monsoon than other seasons in India.
- In India, Ganga, Brahmaputra and Indus have large catchment area. Catchment areas of Ganga and Brahmaputra and Barak rivers fall into the high rainfall receiving area thus, have 60% of total water resources and have only 33% of the surface areas in India, but most of the water is not utilised.
- On the other hand, in the Peninsular rivers like Godavari, Krishna, Kaveri, etc mean annual flow of water is less, but much of their water resources has been utilised.

Groundwater Resources

- There is about 432 cubic km of total replenishable ground water resources available in India. Ganga and Brahmaputra basins have about 46% of the total replenishable groundwater resources.
- The level of groundwater utilisation is relatively high in the river basins of North¬Western parts and Southern parts of India.
- States having very high utilisation of groundwater are Punjab, Haryana, Rajasthan and Tamil Nadu.
- States having moderate utilisation ground water are Gujarat, Uttar Pradesh, Bihar, Tripura and Maharashtsa.
- States having low Utilisation of groundwater are Chhattisgarh, Odisha, Kerala, etc.
- It is assumed that if the utilisation of water continue with the present rate, there are chances that it will limit the development and create a situation of social upheaval disruptions.

Lagoons and Backwaters

- Some states of India have indented coastline and thus a number of lagoons and lakes have formed. Examples of such states are Kerala, Odisha, and West Bengal.
- Due to brackish water-bodies, these water resources are used for fishing and irrigating certain varieties of paddy crops, coconut, etc.

Water Demand and Utilisation

- Agriculture, being an important part of Indian economy, alone uses about 89% of surface water and 92% of groundwater.
- Most of the developmental projects, river valley projects like the Bhakra-Nangal, Hirakund, Damodar Valley, Nagaijuna Sagar, Indira Gandhi Canal project, etc as well as five year plans were started to provide water to agricultural sector and increase agricultural production.
- Besides this, utilisation of surface and groundwater for domestic purposes are 90% and 3% and for industrial sector are 2% and 5%, respectively.

Demand of Water for Irrigation

- Need for irrigation is very high in India due to the spatial and temporal variation of rainfall.
- As winter and summer season are more or less dry in most parts of India. So, without irrigation agriculture cannot be practised in these parts.
- Some crops like rice, sugarcane, jute and other are water intensive and require more water to grow.
- Irrigation helps to grow multiple crops, gives more agricultural productivity, and along with HYV seeds gives more yield at fast rate. For e.g. Punjab Haryana and Western Uttar Pradesh which have more than 85% of net source area under irrigation.
- Total net irrigated area in Punjab under wells and tube wells is 76.1% where as it is 51.3% in Haryana. These states utilise a large share of their groundwater resources and thus, it is the major cause behind the depletion of these resources.
- Besides these in Rajasthan and Bihar, the concentration of flouride in groundwater is also increasing due to over withdrawal of this resource. Whereas in West Bengal and Bihar, the concentration of arsenic has been increased because of the same reason.

Emerging Water Problems

- Rapid growth in population and pollution from various sources like industries, agriculture, and domestic sources are the major problems which are responsible for declining the availability of potable water.
- The per capita availability of water in India is also decreasing day by day.

Deterioration of Water Quality

- Water quality means water free from unwanted foreign substances that make water polluted i.e. micro-organisms, chemicals, industrial and other wastes.
- These toxic substances are responsible for water pollution by dissolving or he suspended in lakes, streams, rivers and oceans.
- Sometimes, such pollutants seep down and pollute groundwater. The most polluted rivers in India are Ganga and Yamuna.

Water Conservation and Management

- The conservation and management of water become necessary after decreasing the availability of fresh water and increasing its demand by increasing population.
- For Sustainable development and maintaining the quality of life the government should encourage people to adopt watershed development, rainwater harvesting, recycling and reuse of water, conjunctive use of water for availability of quality water for long time.

Prevention of Water Pollution

- Availability of water resources are shrinking with a faster rate. It is seen that hilly areas have less dense population and thus, have high quality of water in their rivers. Whereas plains have dense population and thus have low quality of water in their rivers, and here water is widely used for irrigation, domestic works and industrial works.
- Plains also contribute more in polluting water sources by draining agricultural wastes (chemical fertilisers and insecticides) solid and domestic wastes and industrial wastes.
- During summer, concentration of pollutants in rivers remains high because of low amount of water which unable to flow these pollutants.
- Water quality of national aquatic resources at 507 stations have been monitored by the Central Pollution Control Board (CPCB), with the collaboration of State Pollution Control Boards.
- The analysis of data recorded from these stations shows that the major rivers of India are most polluted by the organic and bacterial pollution.
- Yamuna river is most polluted river in the country between Delhi and Etawah. Other severely polluted rivers are the Sabarmati at Allahabad, the Gomti at Lucknow, the Kali, the Adyar, the Cooum (at entire stretches), the Vaigai at Madurai, Musi at Hyderabad and the Ganga at Kanpur and Varanasi.
- Ground water is also polluted because of high concentration of heavy toxic metals, flouride nitrates at different parts of the country.

Legislative Provisions and Laws to Prevent River Pollution

- Government has taken various steps to minimise river and water pollution but due to some obstacles, these were proved to be less effective, for e.g. Water (Prevention and Control of Pollution) Act of 1974, and Environment Protection Act of 1986

were unsuccessful as in 1997, 251 polluting factories were established along the rivers and lakes.
- The Water Cess Act of 1977 which was made to prevent pollution, was also less effective. So there is an urgent need to create awareness in public about the importance of water in life. It will result in reducing the pollutants from agricultural activities and industrial discharge.

Recycle and Reuse of Water

- Recycle and reuse is a simple and best way to conserve fresh water and make it available for all.
- Industries can use water of low quality and their waste water for cooling and fire fighting, which can decrease the cost of water for them and conserve fresh water.
- Water could be collected after bathing and washing utensils, washing clothes and cars can be a better option for gardening.
- Today, reusing and recycling of water is limited to few people but there is enormous scope for replenishing water through recycling.

Watershed Management

Watershed management basically refers to efficient management and conservation of surface water.

Watershed management includes:

1. ground water resources.
2. prevention of surface runoff.
3. storage and recharge of ground-water by different methods such as percolation tanks, recharge wells, etc.
4. the conservation, regeneration and judicious use of all natural resources (land, water, plants and animals) and human resources.
5. create a balance among natural elements as well as in society.
6. community participation is a key to success of a Watershed Development programme.

There are various Watershed Development and management programmes started by both Central and State Government at national and state level in India like:

- **Haryali** It is sponsered by the central government while gram panchayats of different villages execute it with the public participation. This programme enabled people to conserve water for various uses such as drinking,, irrigation, fisheries and afforestation.
- **Neeru-Meeru (Water and You)** Programme in Andhra Pradesh and Arvary Pani Sansad (in Alwar, Rajasthan)are examples of state initiated watershed development programmes.

Under these two programmes numerous percolation tanks, dug out ponds (johad), check dams, etc were constructed for harvesting water with the help of public participation. Tamil Nadu is only state which has made the construction of water harvesting structures compulsory in the houses. The construction of a building without the structure of water harvesting is not allowed. Despite having such programmes, still most of the people in India are not aware with the benefits of watershed development and managment of water. Thus, there is a need to encourage more people to participate in this programme.

Rain Water Harvesting

Rain water harvesting is a cheap and environmental friendly technique that guides us to store rainwater into bore wells, pits and also recharge groundwater aquifers for different uses. There are various benefits of rainwater harvesting which are as follows:

1. It increases.water availability.
2. Checks the declining groundwater level.
3. It improves the quality of groundwater by dilution of pollutions like fluoride and nitrates.
4. It prevents soil erosion and flooding.
5. It can be used to arrest salt water intrusion in coastal areas, if used to recharge aquifers.

There are numerous methods to harvest rain water in India. In traditional rain water harvesting techniques, water is usually collected in any surface water body i.e. lakes, ponds, irrigation tanks, etc of rural areas. Another technique is kund or tanka which is a covered storage under ground tank. This technique is widely used in Rajasthan. Rain water harvesting structure can be made on the open spaces and even on the roof tops of the houses and the collected water can be used for domestic use by large number of people and reduce their dependence on ground water.

Other Methods

- To solve the problem of water scarcity, we can use brackish water of arid, semi-arid and coastal areas after the desalinised processes.
- By interlinking of rivers, water can be transferred from the water surplus areas to water deficit areas.

Highlights of India's National Water Policy, 2002

- The National water Policy, 2002 stipulates water allocations priorities broadly in the following order i.e. drinking water, irrigation, hydro-power, navigation, industrial and other uses.
- The main objectives of this policy are to provide water to all human beings and animals, regular monitoring of surface and ground water quality, create awareness

of water as a scarce resource, create conservation consciousness among people through education, regulation, incentives and disincentives, etc.

Multiple choice type questions (1 Marks)

1. Choose the right answers of the following from the given options.

(i) Which one of the following types describes water as a resource?

1. Abiotic resource 2. Non-renewable Resources 3. Biotic Resource 4. Cyclic Resource

Ans. (4) Cyclic Resource

(ii) Which one of the following rivers has the highest replenishable groundwater resource in the country?

1. The Indus 2.
2. The Brahmaputra
3. 3. The Ganga
4. 4. The Godavari Ans.

Ans- (3) The Ganga

(iii) Which of the following figures in cubic kilometres correctly shows the total annual precipitation in India?

1. 2,000
2. 3,000
3. 4,000
4. 5,000

Ans. (3) 4,000

(iv) Which one of the following south Indian states has the highest groundwater utilisation (in per cent) of its total groundwater potential?

1. Tamil Nadu
2. Karnataka
3. Andhra Pradesh
4. Kerala

Ans. (1) Tamil Nadu

(v) The highest proportion of the total water used in the country is in which one of the following sectors?

1. Irrigation
2. Industries
3. Domestic use
4. None of the above

Ans. (1) Irrigation

Short answer type questions (3 marks)

Q. It is said that the water resources in India have been depleting very fast. Discuss the factors responsible for depletion of water resources.

Ans. The factors responsible for the depletion of water resources are as follows:

(i) Increasing population: As a result of increasing population, all the facilities such as houses, shops, roads, offices, pavements, etc. increase to fulfil the increasing demands. This, in turn, decreases the open area for seepage of water into the ground.

(ii)Increasing industries: Most of the stages of manufacturing processes in industries require water. If the number of industries increases, then the water required by them will also increase. Therefore, increase of industries contributes to the depletion of water resources.

(iii)Agricultural activities : India is an agricultural country and agriculture is impossible without water. The water for agriculture is mainly utilised from ground water, rain water and canal water. As there is no rainfall in many places, agriculture cannot be entirely depended on rain water. Also, canal water is available in a few places only. Therefore, ground water is the main source of water for agricultural activities and this causes depletion of water resources.

Q. What factors are responsible for the highest groundwater development in the states of Punjab, Haryana, and Tamil Nadu?

Ans. The ground water utilisation is very high in the states of Punjab, Haryana and Tamil Nadu because these states are advanced agricultural states. Water is used mainly in irrigation. The share of agriculture sector in total water utilisation is much higher than other sectors. Irrigation is needed because of spatiotemporal variability in rainfall in the states. The large tracts of the country are deficient in rainfall and are drought prone. Further, the high yielding varieties of crops need regular moisture supply, which is made possible only by a developed irrigation systems.

Q. Why the share of agricultural sector in total water used in the country is expected to decline?

Ans. The share of agricultural sector in total water used in the country is expected to decline because of below given reasons

1. The industrial and domestic sectors in the country are likely to increase.
2. The total utilizable water resources are also declining.
3. The overuse of groundwater resources has led to decline in the groundwater.

Q. **What can be possible impacts of consumption of contaminated/unclean water on the people?**

Ans. According to the statistics of World Health Organisation, one fourth of communicable diseases in India spread through contaminated or unclean water. Contaminated water containing a number of viruses and harmful germs can be detrimental to human health. 4 / 7 Drinking contaminated water, in medical term, may cause water-related diseases including diarrhea, bacterial dysentery, cholera, typhoid and many other contagious illnesses.

Long answer type question (5 marks)

Q. Discuss the availability of water resources in the country and the factors that determine its spatial distribution?

Ans. India accounts for about 2.45 per cent of world's surface area, 4 per cent of the world's

water resources and about 16 per cent of world's population.The total water available from precipitation in the country in a year is about 4,000 cubic km. The availability from surface water and replenishable groundwater is 1,869 cubic km. Out of this only 60 per cent can be put to beneficial uses. Thus, the total utilisable water resource in the country is only 1,122 cubic km. The factors that determine its spatial distribution are

(a) Surface water resources- There are four major sources of surface water.These are rivers, lakes, ponds, and tanks. In the country, there are about 10,360 rivers and their tributaries longer than 1.6 km each.The mean annual flow in all the river basins in India is estimated to be 1,869 cubic km. However, due to topographical, hydrological and other constraints, only about 690 cubic km (32 per cent) of the available surface water can be utilised.Water flow in a river depends on size of its catchment area or river basin and rainfall within its catchment area. Some of the rivers in the country like the Ganga,the Brahmaputra, and the Indus have huge catchment areas. Given that precipitation is relatively high in the catchment areas of the Ganga, the Brahmaputra and the Barak rivers, these rivers, although account for only about one-third of the total area in the country, have 60 per cent of the total surface water resources.

(b) Groundwater resources- The total replenishable groundwater resources in the country are about 432 cubic km. The Ganga and the Brahamaputra basins, have about 46 per cent of the total replenishable groundwater resources. The level of groundwater utilisation is relatively high in the river basins lying in north-western region and parts ofsouth India. The groundwater utilisation is very high in the states of Punjab, Haryana, Rajasthan and 5 / 7 Tamil Nadu. However, there are States like Chhattisgarh, Odisha, Kerala, etc., which utilise only a small proportion of their groundwater potentials. States like Gujarat, Uttar Pradesh, Bihar, Tripura and Maharashtra are utilising their ground water resources at a moderate rate.

(c)Lagoons and Backwaters- India has a vast coastline and the coast is very indented in some states. Due to this, a numberof lagoons and lakes have formed. The States like Kerala, Odisha and West Bengal have vast surface water resources in these lagoons and lakes. Although, water is generally brackish in these water-bodies, it is used for fishing and irrigating certain varieties of paddy crops,coconuts, etc.

Q. The depleting water resources may lead to social conflicts and disputes. Elaborate it with suitable examples.

Ans. Demand for water is increasing rapidly with the increase of population. As against this, the supply of usable water is limited. Even this limited supply can be depleted or made unusable by excessive utilisation, pollution or careless management. Moreover, all parts of the country do not possess the same quantity of water. Some areas have surplus water while other areas suffer from chronic shortage of water. The increasing shortage of water is creating tension and causing disputes among nations, states, communities and regions. Most rivers of India are plagued with inter-state disputes. Almost all the major rivers of the country are inter-state rivers and their waters are shared by two or more than the two states. Following inter-state river water disputes are worth mentioning.

1. Cauvery Water Dispute between Tamil Nadu, Karnataka and Kerala.
2. The Krishna Water Dispute between Maharashtra, Karnataka and Andhra Pradesh.
3. The Tungabhadra Water Dispute between Andhra Pradesh and Karnataka
4. The Aliyar and Bhivani River Water Dispute between Tamil Nadu and Kerala. 5.

The Godavari River Rater Dispute between Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Karnataka.

6. The Narmada Water Dispute between Gujarat, Maharashtra, Madhya Pradesh and Rajasthan.

7. The Mahi River Dispute between Gujarat, Rajasthan and Madhya Pradesh.

8. The Ravi and Beas Water Dispute between Punjab, Haryana, Himachal Pradesh, 6 / 7 Rajasthan, Jammu and Kashmir and Delhi.

9.The Satluj-Yamuna Link Canal Dispute between Punjab, Haryana and Rajasthan.

10.The Yamuna Wiver Water Dispute between Uttar Pradesh, Haryana, Himachal Pradesh, Punjab, Rajasthan, Madhya Pradesh and Delhi.

11.The Karmanasa River Water Dispute between Uttar Pradesh and Bihar.

12.The Barak River Water Dispute between Assam and Manipur.

Q. What is watershed management? Do you think it can play an important role in sustainable development?

Ans. Watershed management is the study of the relevant characteristics of a watershed aimed at the sustainable distribution of its resources and the process of creating and implementing plans, programs, and projects to sustain and enhance watershed functions that affect the plant, animal, and human communities within the watershed boundary. Watershed management provides a sustainable growth framework for integrated decision making to help: assess the nature and status of the watershed; identify watershed issues; define and re-evaluate short and long-term objectives, actions and goals; assess benefits and costs; and implement and evaluate actions. It is correct that it will play an important development in sustainable development:

1. It involves prevention of runoff and storage and recharge of groundwater.
2. Watershed management includes conservation and judicious use of all resources.
3. Watershed management aims at bringing about balance between natural resources on the one hand and society on the other. The success of watershed development largely depends upon community participation.
4. Watershed development projects in some areas have been successful in rejunavating environment and economy.Some of the examples are-

(a)Haryali- Haryali is a watershed development project sponsored by the Central Government which aims at enabling the rural population to conserve water for drinking, irrigation, fisheries and afforestation. The Project is being executed by Gram Panchayats 7 / 7 with people's participation.

(b)Neeru-Meeru(Water and You): This programme is initiated in Andhra Pradesh.The "Neeru-Meeru" approach involves soil and water conservation from ridges to valley, causes water to flow in dry rivers and streams, revives traditional water harvesting structures, adopts a participatory method to increase the rate of ground water recharge, takes up rainwater-harvesting structures in urban areas, promotes recycling of waste water and checks the pollution in water bodies through seepage.

(c)Arvary Pani Sansad: It was initiated in Alwar, Rajasthan. They have taken up constructions of various water-harvesting structures such as percolation tanks, dug out ponds (Johad), check dams, etc. through people's participation. Tamil Nadu has made water harvesting structures in the houses compulsory. No building can be constructed

without making structures for water harvesting

Chapter 5 MINERAL AND ENERGY RESOURCES

Gist of the Lesson:

Mineral Resources: are prerequisite for providing the necessary base for industrial Development in a country. Fortunately, India is endowed with a rich variety of mineral resources,due to its varied geological structure. It possesses more than hundred minerals, out of which, there are around thirty minerals which have economic significance.

Mineral Resources: 'A mineral is a natural substance of organic or inorganic origin with definite chemical and physical properties.

Minerals can be grouped under two main categories of **metallic and non-metallic** on the basis of chemical and physical properties.

Metallic Minerals

1. Metallic minerals are the sources of metals and provide a strong base for the development of metallurgical industry.
2. Iron ore, bauxite etc. produces metal and are included in this category. Metallic minerals exhibit a metallic shine or lustre in their appearance.
3. Metallic minerals can be further divided into ferrous and non-ferrous metallic minerals.

Ferrous Minerals

All those minerals which have iron content are called ferrous minerals. Iron ore, Manganese and chromite's are examples of ferrous minerals.

1. Ferrous Minerals account for about three-fourth of the total value of the production of Metallic minerals. These minerals provide a strong base for the development of Metallurgical industries, particularly iron, steel and alloys.
2. India is well-placed in respect of ferrous minerals both in reserves and production.

Non-ferrous Minerals

1. Minerals which do not contain iron are known as non ferrous mineral. Copper, bauxite, Etc. are nonferrous minerals.
2. India is poorly endowed with non-ferrous metallic minerals, except bauxite.

Non-metallic Minerals

1. Non-metallic minerals are either organic or inorganic in origin and do not contain extractable metals in their chemical composition.
2. Based on their origin, they are further classified into two categories, i.e., mineral fuel and other non-metallic minerals.
3. India is endowed with a large number of non-metallic minerals, but only a few of these are commercially important. They are limestone, dolomite, mica, gypsum and phosphate. These minerals are used in a variety of industries such as Cement, fertilizers, refractories and lectrical goods.
4. Mineral Fuels: Mineral fuels are organic in origin and derived from the buried animal and plant life such as coal and petroleum. They are also known as fossil fuels.
5. Other Non-metallic Minerals: Other non-metallic minerals are inorganic in origin Such as mica, limestone and graphite, etc.

Characteristics of Minerals-

1. These are unevenly distributed over space.
2. There is an inverse relationship in quality and quantity of minerals i.e. good quality Minerals are less in quantity as compared to low quality minerals.
3. All minerals are exhaustible over time.
4. Minerals take a long time to develop geologically and they cannot be replenished immediately at the time of need.

Distribution of Minerals in India

The distribution of mineral resources in India is uneven. The occurrences of mineral resources are associated with certain types of geological structure.

> Over 97% of coal reserves occur in the valleys of Damodar, Sone, Mahanadi and Godavari.

> Petroleum reserves are located in the sedimentary basins of Assam, Gujarat and Mumbai High i.e. off-shore region in the Arabian Sea.

> New reserves have been located in the Krishna-Godavari and Kaveri basins

Minerals are generally concentrated in three broad belts in India. There may be some sporadic occurrences here and there in isolated pockets. These belts are:

(i) The North-Eastern Plateau Region

(ii) The South-Western Plateau Region

(iii) The North-Western Region

The North-Eastern Plateau Region: -

This belt covers Chhotanagpur (Jharkhand), Odisha Plateau, West Bengal and parts of Chhattisgarh. It has variety of minerals viz. iron ore coal, manganese, bauxite, mica.

The South-Western Plateau Region: -

This belt extends over Karnataka, Goa and contiguous Tamil Nadu uplands and Kerala. * This belt is rich in ferrous metals, bauxite, high grade iron ore, manganese and limestone. * Kerala has deposits of monazite and thorium, bauxite clay. * Goa has iron ore deposits.

The North-Western Region

This belt extends from the gulf of Khambhat in Gujarat to the Aravalli range in Rajasthan.
* Copper, zinc has been major minerals in this belt.
* Rajasthan is rich in building stones, i.e. sandstone, granite, marble. Gypsum and Fuller's earth deposits are also extensive. Dolomite and limestone found in this belt Provide raw materials for cement industry.
* Petroleum and natural gas are principal resources of this belt and other minerals are Small and scattered.

Ferrous Mineral

Iron ore

India is endowed with fairly abundant resources of iron ore and the quality of Indian ore is very high. Most of iron ore found in the country is of two types: Haematite, and Magnetite

The iron ore mines occur in close proximity to the coal fields in the north-eastern Plateau region of the country.

About 95% of total reserves of iron ore is located in the States of Odisha, Jharkhand, Chhattisgarh, Karnataka, Goa, Telangana, Andhra Pradesh and Tamil Nadu.

Odisha-Sundergarh Bonai Mayurbhanj Gurumahisani, Sulaipet, Badampahar Jhar Kiruburu

Jharkhand-Poorbi Singhbhum Noamundi Pashchimi Singhbhum Gua

Chhattisgarh-Durg Dalli Rajhara Bastar Dantewara, Bailadila

Karnataka-Ballari district Sandur-Hospet Chikkamagaluru district, Shivamoga, Chitradurg Tumakuru

Baba Budan hills and Kudremukh

Iron ore deposits of Andhra Pradesh are scattered in the Anantpur, Khammam, Krishna, Kurnool, Cuddapah and Nellore districts.

1. Some deposits are also located in the state of Tamil Nadu, Maharashtra and Rajasthan.
2. Bailadila and Rajhara mines in Chhattisgarh and Kiruburu mines in Odisha are being Worked out specially for export purpose.
3. Goa possesses inferior quality ore, but its contribution to the country's total production is impressive. Almost the entire production of iron from Goa is exported from Marmagao port to Japan.

Manganese

Manganese is an important raw material for smelting of iron ore and also used for manufacturing ferro alloys. India ranks third in the production of manganese ore in the world, next only to Russia and South Africa. Although Manganese deposits are found in almost all geological Formations, but it is mainly associated with Dharwar system.

1. Odisha is the leading producer of Manganese of the country. The important mining areas are Bonai, Kendujhar, Sundergarh, Gangpur, Koraput, Kalahandi and Bolangir.
2. Karnataka is another major producer and here the mines are located in Dharwar, Ballari, Belagavi, North Canara, Chikkmagaluru, Shivamogga, Chitradurg and Tumakuru.
3. Maharashtra is also an important producer of manganese, which is mined in Nagpur, Bhandara and Ratnagiri districts.
4. The manganese belt of Madhya Pradesh extends in a belt in Balaghat-Chhindwara-Nimar-Mandla and Jhabua districts.

Non-Ferrous Minerals

India is poorly endowed with non-ferrous metallic minerals except bauxite.

Bauxite

Bauxite is a non-ferrous metallic mineral which is used in manufacturing of Aluminum.
Bauxite is found mainly in tertiary deposits and is associated with laterite rocks.
Bauxite is found extensively either on the plateau or hill ranges of peninsular India and also in the coastal tracts of the country. India's reserves of bauxite are sufficient to keep The country self-reliant.

Deposits of Bauxite.

1. Odisha happens to be the largest producer of Bauxite. **Kalahandi and Sambalpur** are theleadingproducers. The other two areas which have been increasing their production are Bolangir and Koraput.
2. The patlands of Lohardaga in Jharkhand have rich deposits.
3. Bhavanagar, and Jamnagar in Gujarat have the major deposits.
4. Chhattisgarh has bauxite deposits in Amarkantak plateau while Katni Jabalpur area and Balaghat in M.P. have important deposits of bauxite.
5. Kolaba, Thane, Ratnagiri, Satara, Pune and Kolhapur in Maharashtra are important producers.

Copper

Copper is an important metal in the electrical industry for making wires, electric motors, Transformers and generators. India is a poor country with regard to reserves and production of copper.
1. The Copper deposits mainly occur in Singhbhum district in Jharkhand.

2. Balaghat district in Madhya Pradesh and Jhunjhunu and Alwar districts in Rajasthan are also important producers.

Non-metallic Minerals

Mica

Mica is mainly used in electronic and electrical industries. It can be split into very thin sheets which are tough and flexible. India is the Leading producer in sheet mica. Mica is widely distributed in India, But workable deposits occur in only three Principle belts, i.e. states of Andhra Pradesh, Jharkhand, Bihar and Rajasthan.

1. Bihar and Jharkhand are endowed with high-quality ruby mica. Mica deposit in Bihar is found in Gaya district, Munger district and Bhagalpur district.
2. In Jharkhand the main mica belt is in Dhanbad, Palamau, Hazaribagh, Ranchi and Singhbhum districts.
3. Nellore district in Andhra Pradesh produces the best quality mica.
4. In Rajasthan, mica belt extends from Jaipur to Bhilwara and around Udaipur.
5. Mica deposits are also found in Mysuru and Hasan districts of Karnataka, Coimbatore, Tiruchirapalli, Madurai and Kanniyakumari in Tamil Nadu, Alleppey in Kerala, Ratnagiri in Maharashtra, Purulia and Bankura in West Bengal.

Energy Resources

Mineral fuels are essential for generation of power, required by agriculture, industry, transport and other sectors of the economy.

Mineral fuels like coal, petroleum and natural gas (known as **fossil fuels**), nuclear energy minerals, are the conventional sources of energy. These conventional sources are exhaustible resources.

Coal

Coal is mainly used in the generation of thermal power and smelting of iron ore. Coal occurs in rock sequences mainly of two geological ages, namely **Gondwana and Tertiary deposits**.

About 80 per cent of the coal deposits in India is of bituminous type and is of non-coking grade. The most important Gondwana coal fields of India are located in Damodar Valley. They lie in Jharkhand-Bengal coal belt.

1. The important coal fields in this region are Raniganj, Jharia, Bokaro, Giridih, Karanpura. Jharia is the largest coal field followed by Raniganj.
2. The other river valleys associated with coal are Godavari, Mahanadi and Sone.

3. The most important coal mining centres are Singrauli in Madhya Pradesh (part of Singrauli coal field lies in Uttar Pradesh), Korba in Chhattisgarh, Talcher and Rampur in Odisha, Chanda–Wardha, Kamptee and Bander in Maharashtra and Singareni in Telangana and Pandur in Andhra Pradesh.
4. **Tertiary coals** occur in Assam, Arunachal Pradesh, Meghalaya and Nagaland

Petroleum

Petroleum is an essential source of energy for all internal combustion engines in automobiles, railways and aircraft. Its numerous by-products are processed in petrochemical industries, such as fertiliser, synthetic rubber, synthetic fibre, medicines, vaseline, lubricants, wax, soap and cosmetics. Petroleum is referred to as **liquid gold** because of its **scarcity and diversified uses**.

Crude petroleum occurs in sedimentary rocks of the tertiary period. Oil exploration and production was systematically taken up after the Oil and Natural Gas Commission was set up in 1956. Till then, Digboi in Assam was the only oil producing region.

1. In Assam, Digboi, Naharkatiya and Moran are important oil producing areas.
2. The major oilfields of Gujarat are Ankaleshwar, and Kalol.
3. Mumbai High which lies 160 km off Mumbai was discovered in 1973 and production commenced in 1976.

Oil extracted from the wells is crude oil and contains many impurities. It cannot be used directly. It needs to be refined. There are two types of refineries in India: (a) field-based and (b) market-based. **Digboi** is an example of field-based and **Barauni** is an example of market-based refinery

Non-Conventional Energy Sources

Fossil fuel sources, such as coal, petroleum, natural gas and nuclear energy use exhaustible raw materials. Sustainable energy resources are only the renewable energy sources like solar, wind, hydro-electricity, geothermal and biomass. These energy sources are more equitably distributed and environment-friendly. The non-conventional energy sources will provide more sustained, eco-friendly cheaper energy after the initial cost is taken care of.

- Solar Energy
- Nuclear Energy Resources
- Wind Energy
- Tidal and Wave Energy
- Geothermal Energy
- Bio-energy

Conservation of Mineral Resources

- The alternative energy sources like solar power, wind, wave, geothermal energy are inexhaustible resource. These should be developed to replace the exhaustible resources.
- In case of metallic minerals, use of scrap metals will enable recycling of metals.
- Use of scrap is specially significant in metals like copper, lead and zinc in which India's reserves are meagre.
- Use of substitutes for scarce metals may also reduce their consumption.
- Export of strategic and scarce minerals must be reduced, so that the existing reserve may be used for a longer period

Multiple Choice Questions (1 marks)

1. Which out of the following states has major oil fields?

(A) Assam (B) Bihar (C) Tamil Nadu. (D) Rajasthan

Ans. (A) Assam.

2. Out of the following, on which station the first atomic power station was set up?

(A) Kalpakkam (B) Narora (C) RanaPartapSagar (D) Tarapur.

Ans. (D) Tarapur.

3. Out of the following, which mineral called 'Brown diamond'?

(A) Iron ore (B) Lignite. (C) Manganese (D) Mica.

Ans. (B) Lignite.

4**. Which is the non-renewable source of energy?**

(A) Hydel (B) Solar (C) Thermal (D) Wind
Ans. (C) Thermal.
5. Which is the hardest mineral?
(A) Diamond (C) Basalt (B) Granite (D) Gabbro
Answer (A) Diamond
6. Which one of the following is a ferrous mineral?
(A) Bauxite (C) Mica (B) Iron ore (D) Coal.
Answer (B) Iron ore
7. The iron content in Hematite is
(A) 20-30% (B)30% -40% (C) 40-50% (D) 60-70%.
Answer (D) 60-70%.
8. Which one of the following is a famous Copper mine?
(A) Bastard (B) Khetri (C) Nellore (D) Jharia.
Answer (B) Khetri
9. Lignite coal is found in:
(A) Jharia (B) Neyveli (C) Bokaro (D) Raniganj.
Answer (B) Neyveli
10. Where is the largest solar plant located?
(A) Nasik (B) Madhopur (C) Kaiga (D) Chandrapur.
Answer (B) Madhopur
11. Which one of the following is a non-metallic mineral?
(A) Iron (B) Lime stone (C) Manganese (D) Copper.
Answer (B) Lime stone
12. For which mineral, is Hazaribagh Plateau famous?
(A) Iron ore (B) Copper (C) Mica (D) Coal.
Answer (C) Mica
13. _____ can be converted to electrical energy, heat energy or gas for cooking.
(A) Bio- energy (B) Nuclear energy (C) Crude oil (D) All of the
Answer: (A) Bio- energy
14. The kinetic energy of wind, through turbines is converted into: 67 | P a g e

(A) bio- energy (B) electrical energy (C) geothermal energy (D) solar energy
Answer: (B) electrical energy
15. _____is absolutely pollution free, inexhaustible source of energy.
(A) Wind energy (B) Mineral fuels (C) Nuclear energy (D) Coal energy
Answer: (A) Wind energy
16. _____ resources can be defined as homogenous, naturally occurring, inorganic materials that are of economic interest in or on the crust of the Earth.
(A) Solar (B) Nuclear (C) Mineral (D) None of the above
Answer: (C) Mineral
17. Arrange the states having the highest Coal reserves to the lowest (as per 2020).
(i) Odisha (ii) Jharkhand (iii) Chhattisgarh (iv) West Bengal
Options:
(A) i, ii, iii, iv (B) iv, iii, ii, I (C) ii, i, iii, iv (D) iv, iii, i, ii
Answer: (C) ii, i, iii, iv
18. Arrange the bauxite producing states from the highest to the lowest.
(i) Jharkhand (ii) Odisha (iii) Andhra Pradesh (iv) Gujarat
Options:
(A) ii, iii, iv, i (B) iii, ii, iv, I (C) iv, ii, iii, i (D) i, ii, iii, iv
Answer: (A) ii, iii, iv, i
19. The challenge of sustainable development requires integration of quest for economic development with _____concerns.
(A) Social (B) Political (C) Environmental (D) Educational
Answer: (C) Environmental
20. _____ methods of resource use result into generating enormous quantity of waste as well as
create other environmental problems.
(A) Modern (B) Collective (C) Primitive (D) Traditional
Answer: (D) Traditional
I. Read the case study given below and answer the questions that follow:
Fossil fuel sources, such as coal, petroleum, natural gas and nuclear energy use exhaustible raw materials. Sustainable energy resources are only the renewable energy sources like solar, wind,

hydro geothermal and biomass. These energy sources are more equitably distributed and environment friendly. The non- conventional energy sources will provide more sustained, eco-friendly cheaper energy after the initial cost is taken care of.

Q. 1. What are the sources of fossil fuels?

(A) Coal (B) Petroleum (C) Natural gas (D) All of the above

Answer: (D) All of the above

Q. 2. Sustainable energy sources: (A) Solar energy (B) Nuclear energy (C) Gas energy (D) All of the

Above Answer: (A) Solar energy

Q. 3. Geothermal energy allows us to fetch energy from:

(A) the Earth's surface. (B) beneath the Earth's surface.

(C) the water bodies. (D) the air particles.

Answer: (B) beneath the Earth's surface.

Q. 4. Renewable energy sources also called:

(A) Non- conventional energy sources (B) Conventional energy sources

(C) Ferrous energy sources (D) Non- ferrous energy sources

Answer: (A) Non- conventional energy sources

II. Read the case study given below and answer the questions that follow:

Sun rays tapped in photo voltaic cells can be converted into energy, known as solar energy. The two effective processes considered to be very effective to tap solar energy are photo voltaic and solar thermal technology. Solar thermal technology has some relative advantages over all other non-renewable energy sources. It is cost competitive, environment friendly and easy to construct. Solar energy is 7 per cent more effective than coal or oil based plants and 10 per cent more effective than nuclear plants. It is generally used more in appliances like heaters, crop dryers, cookers, etc. The western part of India has greater potential for
the development of solar energy in Gujarat and Rajasthan.

Q. 1. Solar energy is a _____ source of energy.

(A) Conventional (B) Non- conventional

(C) Perishable (D) Non- perishable

Answer: (B) Non- conventional

Q. 2. _____ system is a system that converts sunlight into heat.

(A) Solar thermal (B) Solar heat
(C) Solar conversion (D) Solar calculation
Answer: (A) Solar thermal
Q. 3. What are the advantages of using Solar energy?
(A) Reduces electricity bills (B) Low maintenance cost
(C) Diverse applications (D) All of the above
Answer: (D) All of the above
Q. 4. States which have great potential to develop Solar energy.
(A) Kerala and Tamil Nadu (B) Gujarat and Rajasthan
(C) Rajasthan and Uttar Pradesh (D) Gujarat and Maharashtra
Answer: (B) Gujarat and Rajasthan
III. Read the case study given below and answer the questions that follow:
The challenge of sustainable development requires integration of quest for economic development with environmental concerns. Traditional methods of resource use result into generating enormous quantity of waste as well as create other environmental problems. Hence, for sustainable development calls for the protection of resources for the future generations. There is an urgent need to conserve the resources. The alternative energy sources like solar power, wind, wave, geothermal energy are inexhaustible resources. These should be developed to replace the exhaustible resources. In case of metallic minerals, use of scrap metals will enable recycling of metals. Use of scrap is especially significant in metals like copper, lead and zinc in which India's reserves are meager. Use of substitutes for scarce metals may also reduce their consumption. Export of strategic and scarce minerals must be reduced, so that the existing reserve may be used for a longer period.
Q. 1. Sustainable development calls for the protection of resources for the _____generations.
(A) present (B) past (C) future (D) none of the above
Answer: (C) future
Q. 2. Alternative energy source:
(A) Solar energy (B) Hydro energy (C) Tidal energy (D) All of the above
Answer: (D) All of the above
Q. 3. Why is the conservation of mineral resources important?
(A) They are limited in number. (B) They are the country's asset.
(C) Indispensable part of our lives. (D) All of the above. 70 | P a g e

Answer: (D) All of the above
Q. 4. Why is scrap metal important?
(A) Less pollution (B) Can be recycled (C) Can be exported (D) Great country asset
Answer: (B) Can be recycled

Very Short Answer Type Questions

Question 1. Define minerals.
Answer: A mineral is a natural substance of organic or inorganic origin with definite chemical and physical properties.
Question 2. Give examples of non-metallic minerals. Answer: Fossil fuels, mica, limestone, graphite etc.
Question 3. Name ferrous minerals.
Answer: All the minerals which contain iron come under this category. Like – Iron ore, anganese, chromite etc.
Question 4. What are the main types of iron found in our country? Answer: Haematite and Magnetite.
Question 5. Which state is the leading producer of manganese? Answer: Odisha is the leading producer of manganese.
Question 6. Name the manganese fields of Karnataka.
Answer: Karnataka is a major producer of manganese and here the mines are located in Dharwar, Ballari, Belagavi, North Canara, Chikkmagaluru, Shivamogga, Chitradurg and Tumkur.
Question 7. What are the uses of mica? Answer: Used in electrical and electronic industries and also as an insulator.
Question 8. Which is the ore for aluminium? Which state is the largest producer? Answer: Bauxite is the ore for aluminium. Odisha is the largest producer.
Question 9. Where is copper found in India?
Answer: Copper deposits mainly occur in Singhbhum district in Jharkhand, Balaghat district in Madhya Pradesh and Jhunjhunu and Alwar districts in Rajasthan. Minor deposits in Andhra Pradesh, Karnataka and Tamil Nadu.
Question 10. What are canaries used for? Answer: Singareni collieries, the country's premier coal production company, still uses canaries to detect the presence of deadly carbon monoxide in underground mines.

Question 11. Which are the two top coalfields of India?

Answer: Jharia and Raniganj.

Question 12. What are the uses of petroleum?

Answer: It is an essential source of energy for all internal combustion engines in automobiles, railways and aircraft. Its numerous by-products are processed in petrochemical industries such a fertiliser, synthetic rubber, synthetic fibre, medicines, vaseline, lubricants, wax, soap and cosmetics.

Question 13. Which mineral is referred to as liquid gold? why? Answer: Petroleum is referred to as liquid gold because of its scarcity and diversified uses.

Question 14. Which agency looks after the transport and marketing of natural gas? When was it set up? Answer: The Gas Authority of India Limited was set up in 1984 as a public sector undertaking to look after the transport and marketing of natural gas.

Question 15. How is solar energy generated?

Answer: Sun rays tapped in photovoltaic cells can be converted into energy, known as solar energy. The two effective processes considered to be very effective to tap solar energy are photovoltaics and solar thermal technology.

Question 16. Name the sources of non-conventional sources of energy. Answer: Solar, wind, bio, tidal and wave, geo thermal.

Question 17. Name the states with high potential for wind energy. Answer: Rajasthan, Gujarat, Maharashtra and Karnataka have favourable conditions to develop wind energy.

Question 18. Why is India endowed with a rich variety of mineral resources?

Answer: India is endowed with a rich variety of mineral resources due to its varied geological structure. Bulk of the valuable minerals are products of pre-palaezoic age and are mainly associated with metamorphic and igneous rocks of the peninsular India.

Question 19. Why do we need minerals for economic development?

Answer: Industrial development of a country depends on availability of minerals and economic development depends on industrial development. Therefore, we need minerals for economic development.

Question 20. How are minerals classified? Answer: Minerals are classified on the basis of their physical and chemical properties.

Metallic minerals Non-metallic minerals.

Question 21. Name the area lacking natural resources. Answer: The vast alluvial plain tract of north India is devoid of minerals of economic use.
Question 22. There is inverse relationship between quantity and quality of minerals. Explain the statement. Answer: It means that good quality minerals are less in quantity as compared to low quality minerals.
Question 23. Where are majority of minerals found in India? Answer: Most of the metallic minerals in India occur in the peninsular plateau region in the old crystalline rocks.
Question 24. In which of the river valleys important coal reserves are found? Answer: Over 97 per cent of coal reserves occur in the valleys of Damodar, Son
, Mahanadi and Godavari.
Question 25. Give the distribution of bauxite ore.
Answer: Bauxite is produced in the following states.
Odisha is the largest producer.
Kalahandi and Sambalpur are the leading producers.
Gujarat, Chhattisgarh, M.P. and Maharashtra.
Balaghat in M.P.
Question 26. Name the areas where natural gas is found. Answer: Natural gas is found in: Eastern Coast (Tamil Nadu, Odisha, and Adhra Pradesh) Tripura, Rajasthan, Gujarat and Maharashtra
Question 27. Name the nuclear power plant affected by tsunami which has recently been resumed. Answer: Kalpakkam in Tamil Nadu.
Question 28. Where are the richest monazite deposits found?
Answer: Monazite reserves are found in Palakkad and Kollam districts of Kerala, Vishakhapatnam in Andhra Pradesh and Mahanadi river delta in Odisha.
Question 29. When was the first Atomic Energy Commission established and where?
Answer: Atomic Energy Commission was established in 1948; while the Atomic Energy Institute at Trombay was established in 1954, which was renamed as the Bhabha Atomic Research Centre in 1967.
Question 30. Name the important features of non- conventional energy sources. Answer:
Important features of non-conventional energy sources are:
Equitable distribution
Environment friendly
More sustained eco-friendly and cheaper after initial cost is taken care of.

Question 31. Solar energy is the hope of future. Discuss. Answer: Solar energy is the hope of future because it is:
Cost competitive
Environment friendly
Question 32. What are the advantages of bio-energy? Answer: Enhance self-reliance
Reduce environmental pollution
Reduce pressure on fuel wood
Conversion of municipal waste into energy.
Question 33. Why do we need to conserve resources? Answer: They are limited in number, Exhaustible More time to replenish For sustainable development
Question 34. Write two important uses of coal. Answer: Generation of thermal power Smelting of iron ore for steel
Question 35. When was the first geo-thermal energy usage attempt made? Is there any geo-thermal plant in India? OR
Where was the first underground heat tapped?
Answer: The first successful (1890) attempt to tap the underground heat was made in the city of Boise, Idaho (U.S.A.), where a hot water pipe network was built to give heat to the surrounding buildings. This plant is still working. In India, a geothermal energy plant has been commissioned at Manikaran in Himachal Pradesh.

Short Answer Type Questions (3 Marks)

1.Which are the prospective areas of natural gases in India?
Answer: Natural gas is obtained alongwith oil in all the oil fields but exclusive reserves have been located along the eastern coast as well as (Tamil Nadu, Odisha and Andhra Pradesh), Tripura, Rajasthan and off-shore wells in Gujarat and Maharashtra.
2. List the major nuclear power stations along with the states.
Answer: The important nuclear power projects are Tarapur (Maharashtra), Rawatbhata near Kota (Rajasthan), Kalpakkam(Tamil Nadu), Narora (Uttar Pradesh), Kaiga (Karnataka) and Kakarapara (Gujarat).
3. What are the advantages of solar energy?

Answer: Solar thermal technology has some relative advantages over all other non-renewable energy sources. It is cost competitive, environment friendly and easy to construct. Solar energy is 7 per cent more effective than coal or oil based plants and 10 per cent more effective than nuclear plants. It is generally used more in appliances like heaters, crop dryers, cookers, etc. The western part of India has greater potential for the development of solar energy in Gujarat and Rajasthan.

4. How is geothermal energy tapped?OR
What is the source of geothermal energy?

Answer: When the magma from the interior of earth, comes out on the surface, tremendous heat is released. This heat energy can successfully be tapped and converted to electrical energy. Apart from this, the hot water that gushes out through the geyser wells is also used in the generation of thermal energy. It is popularly known as Geothermal energy. This energy is now considered to be one of the key energy sources which can be developed as an alternate source. The hot springs and geysers are being used since medieval period.

5. Name the agencies involved in exploration of minerals.

Answer: Geological Survey of India (GSI), Oil and Natural Gas Commission (ONGC), Mineral Exploration Corporation Ltd. (MECL), National Mineral Development Corporation (NMDC), Indian Bureau of Mines (IBM), Bharat Gold Mines Ltd. (BGML), Hindustan Copper Ltd. (HCL), National Aluminium Company Ltd. (NALCO) and the Departments of Mining and Geology undertake systematic surveying, prospecting and exploration for minerals in various states.

6. Where are majority of petroleum reserves found?

Answer: Petroleum reserves are located in the sedimentary basins of Assam, Gujarat and Mumbai High, i.e. off-shore region in the Arabian Sea. New reserves have been located in the Krishna-Godavari and Kaveri basins.

7. Write the uses of petroleum.

Answer: Uses of petroleum are as follows:
Essential source of energy for all internal combustion engines in automobiles, railways and aircrafts. By-products are processed in petro chemical industries such as fertilisers, synthetic rubber, synthetic fibre, medicines, vaseline, lubricants wax, soap and cosmetic.

Long Answer Type Question (5)

8. Give the distribution of petroleum reserves in India.

Answer: Crude petroleum occurs in sedimentary rocks of the tertiary period. Before 1956, Digboi in Assam was the only oil producing region. But now in Assam, Digboi,

Naharkatiya and Moran are important. Oilfields of Gujarat are Ankleshwar, Mehsana, etc. Mumbai High which lies 160 km off Mumbai was discovered in 1973.
Natural gas have been found in exploratory wells in Krishna-Godavari and Kaveri basin on the east coast.

9. Name the important belts of mineral reserves in India.

Answer: Minerals are generally concentrated in three broad belts in India.
The North-Eastern Plateau Region: Chotanagpur (Jharkhand), Odisha Plateau, West Bengal and parts of Chhattisgarh.
The South-Western Plateau Region: Karnataka, Goa and contiguous Tamil Nadu uplands and Kerala.
The North-Western Region: Aravali in Rajasthan and part of Gujarat

10. Write the uses and distribution of mica.

Answer: Uses:
Di-electric property
Voltage resistant distribution Distribution: Jharkhand, Andhra Pradesh and Rajasthan followed by Tamil Nadu, West Bengal, M.P. and Nellore district have the best quality mica.

11. What is bio-energy? State four advantages of bio-energy.

Ans. Bio-energy refers to energy derived from biological products which includes agricultural residues, along with municipal, industrial and other works. Advantages:
(i) It is a potential source of energy conversion.
(ii) It can be converted into electrical energy, heat energy or gas for cooking.
(iii) It can process waste to produce energy.
(iv) It reduces environmental pollution.

12. Distinguish between Ferrous and Non-ferrous minerals.

Ans . **Ferrous Minerals**	**Non-Ferrous Minerals**
1. The metallic minerals which contain iron content are called ferrous minerals (Fe).	1. The minerals which do not contain iron (ferrous) content are called non- ferrous minerals.
2. Iron, Manganese, Chromites, Cobalt, etc. Are Ferrous minerals.	2. Copper. Lead, Zinc, Aluminium is non ferrous minerals.
3. These are used in Iron and Steel industry. Some minerals are used as alloys in making different types of steel	3. Each mineral has its particular utility. Some minerals are valuable according to their uses.

13. Distinguish between Metallic and Non-metallic minerals. Or
Classify minerals on the basis of chemical and physical properties.

Ans. **Metallic Minerals**	**Non-metallic minerals**
1. Metallic minerals are those minerals which obtain new products.	1. Non-metallic minerals are those which do not can be melted to yield new products on melting
2. Iron, Copper, Bauxite, Tin, and Manganese are some examples	2. Coal, Salt, Clay, and Marble are some examples.
3. These are generally associated with Sedimentary and Igneous rocks.	3. These are generally associated with rocks.
4. These can be reused after melting	4 These cannot be used after melting

Q. 14. Distinguish between Rock and Mineral ore.

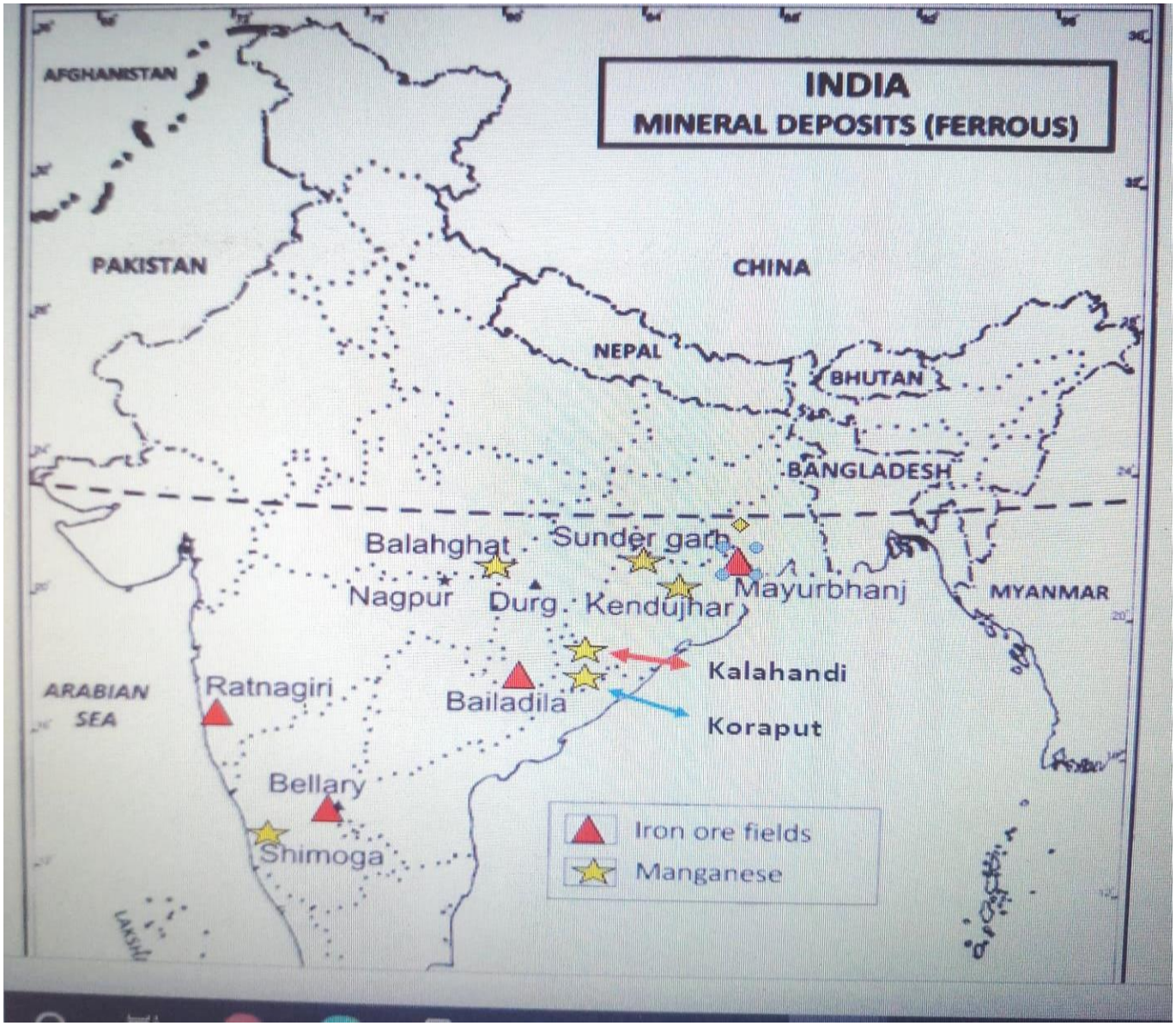
Ans. **Rock**	**Mineral Ore**
A mineral is a natural inorganic compound found in the rocks.	1 A mineral is a natural inorganic compound found in the rocks.
1. A rocks a natural Solid material forming the earth crustes.	2. Some rocks contain and only one mineral and are called mineral ores such as iron ore.
2. A rock is an aggregate of minerals such as granite, marble, etc.	3 It has definite chemical.al composition
3. A rock does not have a definite chemical com position	4 There are about 2000 types of minerals.
4. RocK are mainly of three types-Igneous, Sedimentary Metamorphic and only one mineral and are called mineral ores	

Map Work:

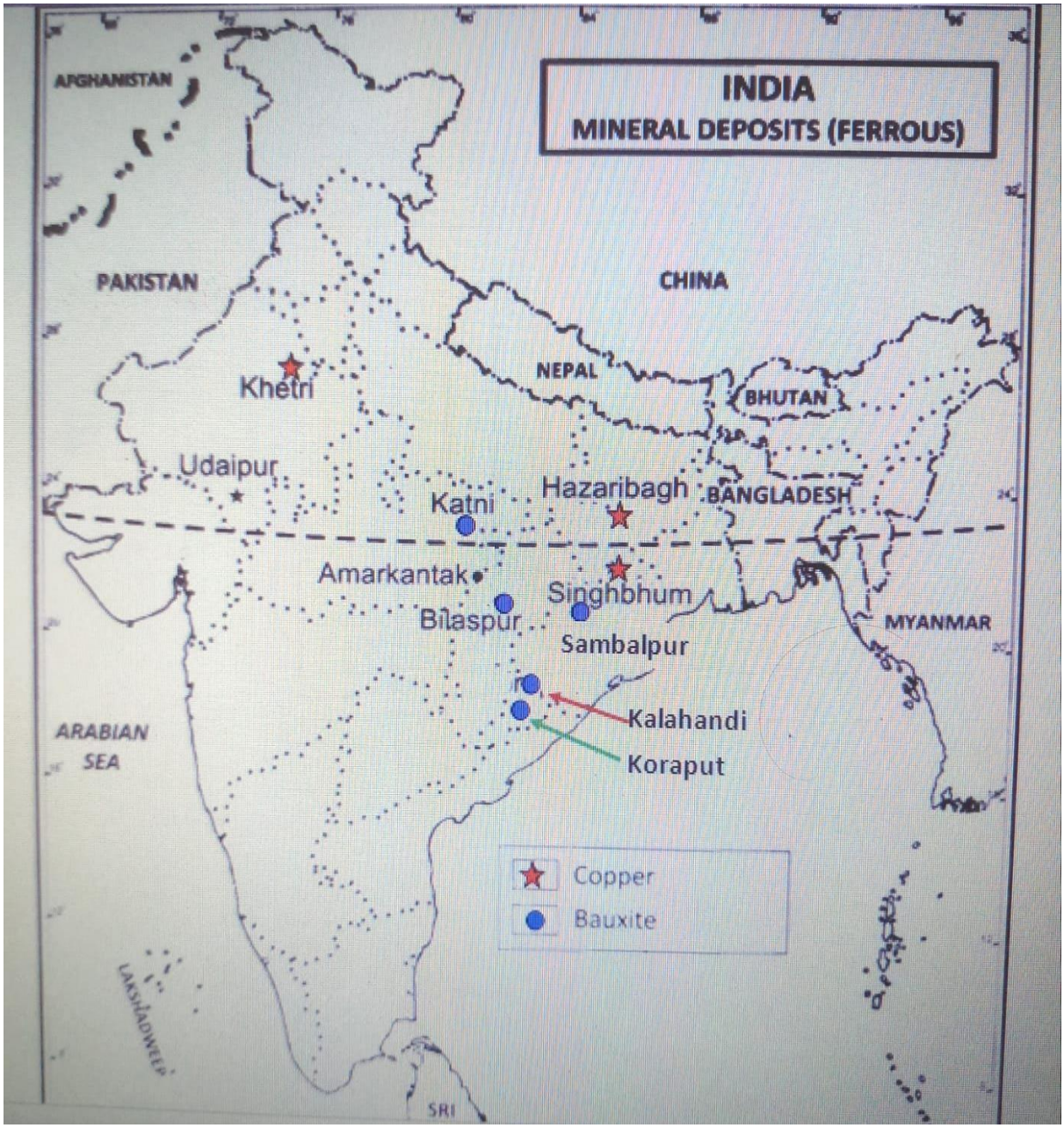
Mines:

Iron-ore mines: Mayurbhanj (Odisha), Bailadila (Chhattisgarh), Ratnagiri (Maharashtra), and Bellary (Karnataka)

Manganese mines: Kendujhar, Sundergarh, Koraput, Kalahandi (Odisha), Balaghat (Madhya Pradesh) Shivamogga (Karnataka

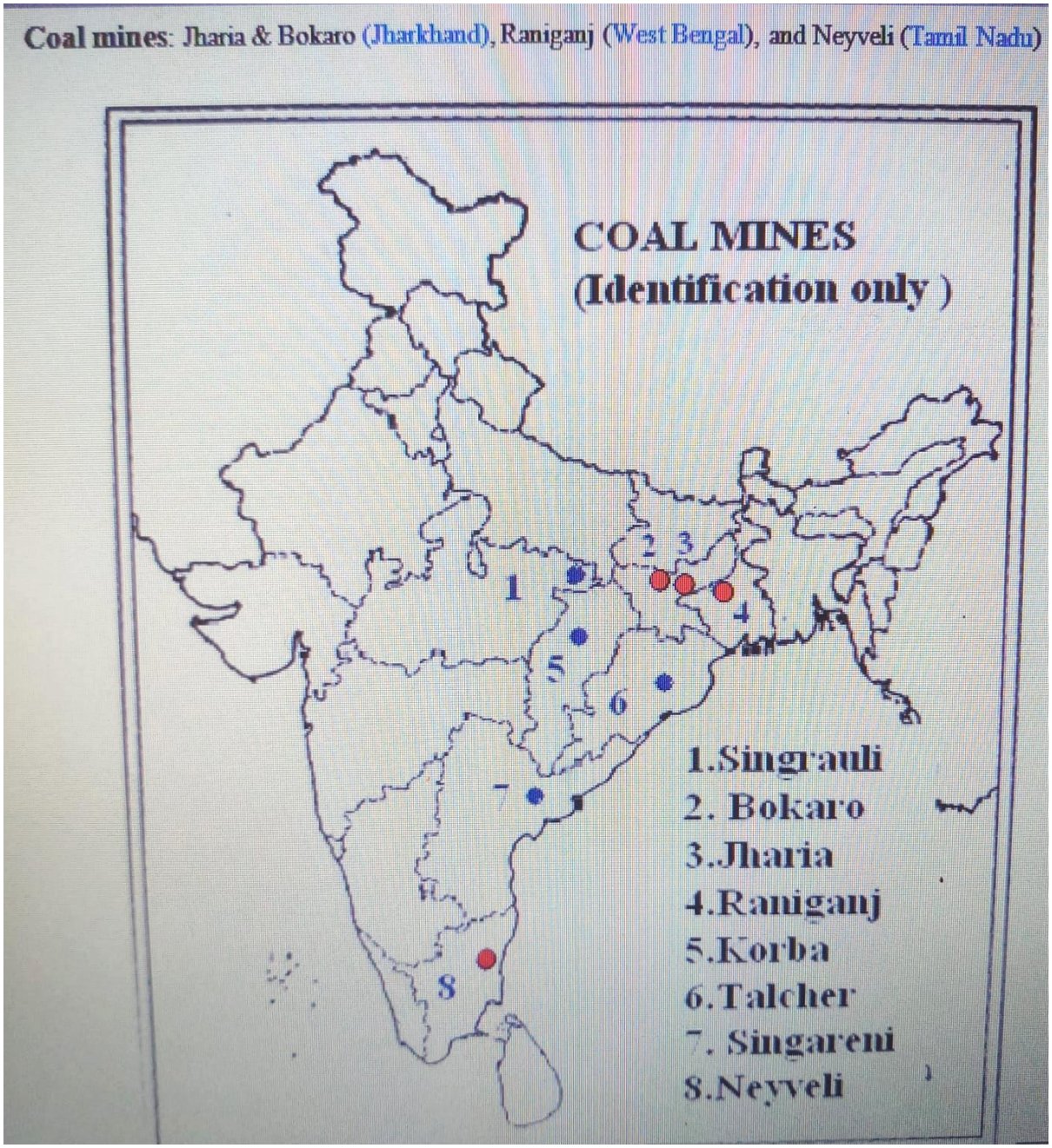


Copper mines: Hazaribagh & Singhbhum (Jharkhand), and Khetari (Rajasthan)
Bauxite mines: Kalahandi and Sambalpur, and Koraput (Odisha), Katni (Madhya Pradesh), Bilaspur (Chhattisgarh),



Coal mines: Jharia & Bokaro (Jharkhand), Raniganj (West Bengal), and Neyveli (Tamil Nadu)

Coal mines: Jharia & Bokaro (Jharkhand), Raniganj (West Bengal), and Neyveli (Tamil Nadu)



Oil Refineries: Mathura (Uttar Pradesh), Jamnager (Gujarat), Baroni (Bihar)


INDIA
MAP OF REFINERIES
N
AFGHANISTAN
JAMMU & KASHMIR
CHINA (TIBET)
HIMACHAL PRADESH
PUNJAB
Chandigarh
Bathinda
UTTARAKHAND
Panipat
HARYANA
DELHI
NEPAL
Mathura
RAJASTHAN
UTTAR PRADESH
Barmer
BIHAR
Barauni
SIKKIM
BHUTAN
ARUNACHAL PRADESH
Digboi
Numaligarh
Bongaigaon
Guwahati
ASSAM
NAGALAND
MEGHALAYA
BANGLADESH
MANIPUR
TRIPURA
MIZORAM
Bina
JHARKHAND
GUJARAT
Vadinar
Jamnagar
MADHYA PRADESH
WEST BENGAL
Haldia
Koyali
MYANMAR
CHHATTISGARH
ORISSA
Paradip
DADRA & NAGAR HAVELI
Mumbai
MAHARASHTRA
BAY OF BENGAL
ARABIAN SEA
TELANGANA
Vishakhapatnam
Tatipaka
GOA
KARNATAKA
ANDHRA PRADESH
Mangaluru
Manali, Chennai
Puducherry
TAMIL NADU
Nagapattinam
Kochi
ANDAMAN & NICOBAR ISLANDS
Refineries
Refineries Under Construction
Map not to Scale
INDIAN OCEAN
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CHAPTER 6 – PLANNING AND SUSTAINABLE DEVELOPMENT IN INDIAN CONTEXT

Main Points of the Chapter

On **1st January2015**, the NITI AYOG was formed. India adopted centralized planning after independence but subsequently it graduated into decentralized multi-level planning. The responsibility of plan formulation was with planning commission at the Centre, state and districts levels but on 1st January 2015, The planning commission was replaced by the NITI agog.

Target Area Planning

The planning process has to take special care of those areas which have remained economically backward. The economic development of a region depends upon its resource base. But sometimes resource-rich region also remains backward. Economic development requires technology, as well as, investment besides resources. In order to arrest the accentuation of regional and social disparities, the Planning Commission introduced the 'target area' and target group approaches to planning. Some of the examples of programs directed towards the development of target areas are: -

Command Area Development Programme,

Drought Prone Area Development Programme, Desert

Development Programme, Hill Area

Development Programme. The Small Farmers

Development Agency (SFDA) and Marginal

Farmers Development Agency (MFDA)

In the 8th Five Year Plan special area programmes were designed to develop infrastructure in hill areas, north-eastern states, tribal areas and backward areas.

Hill Area Development Programme

Hill Area Development Programmes were initiated during the Fifth Five Year Plan covering 15 districts comprising all the hilly districts of Uttar Pradesh (present Uttarakhand), Mikir Hill and North Cachar hills of Assam, Darjeeling district of West Bengal and Nilgiri district of Tamil Nadu.

The National Committee on the Development of Backward Area in 1981 recommended that all the hill areas in the country having height above 600 m and not covered under tribal sub plan be treated as backward hill areas.

These programmes aimed at harnessing the indigenous resources of the hill areas through development of horticulture, plantation, agriculture, animal husbandry, poultry, forestry and small-scale and village industry.

Drought Prone Area Programme

This programme was initiated during the Fourth Five Year Plan with the objectives of providing employment to the people in drought-prone areas and creating productive assets. This programme laid emphasis on the construction of labour-intensive civil works, irrigation projects, land development programmes, afforestation, grassland development and creation of basic rural infrastructure, such as electricity, roads, market, credit and services.

The National Committee on Development of Backward Areas reviewed the performance of this programme. The strategies of development of these areas include adoption of integrated watershed development approach at the micro-level.

The Planning Commission of India (1967) identified 67 districts (entire or partly) of the country prone to drought. The Irrigation Commission (1972) introduced the criterion of 30 per cent irrigated area and demarcated the drought-prone areas. Broadly, the drought prone area in India spread over semi-arid and arid tract of Rajasthan, Gujarat, Western Madhya Pradesh, Marathwada region of Maharashtra, Rayalseema and Telangana plateaus of Andhra Pradesh, Karnataka plateau and highlands and interior parts of Tamil Nadu.

The drought-prone areas of Punjab, Haryana and north-Rajasthan are largely protected due to spread of irrigation in these regions.

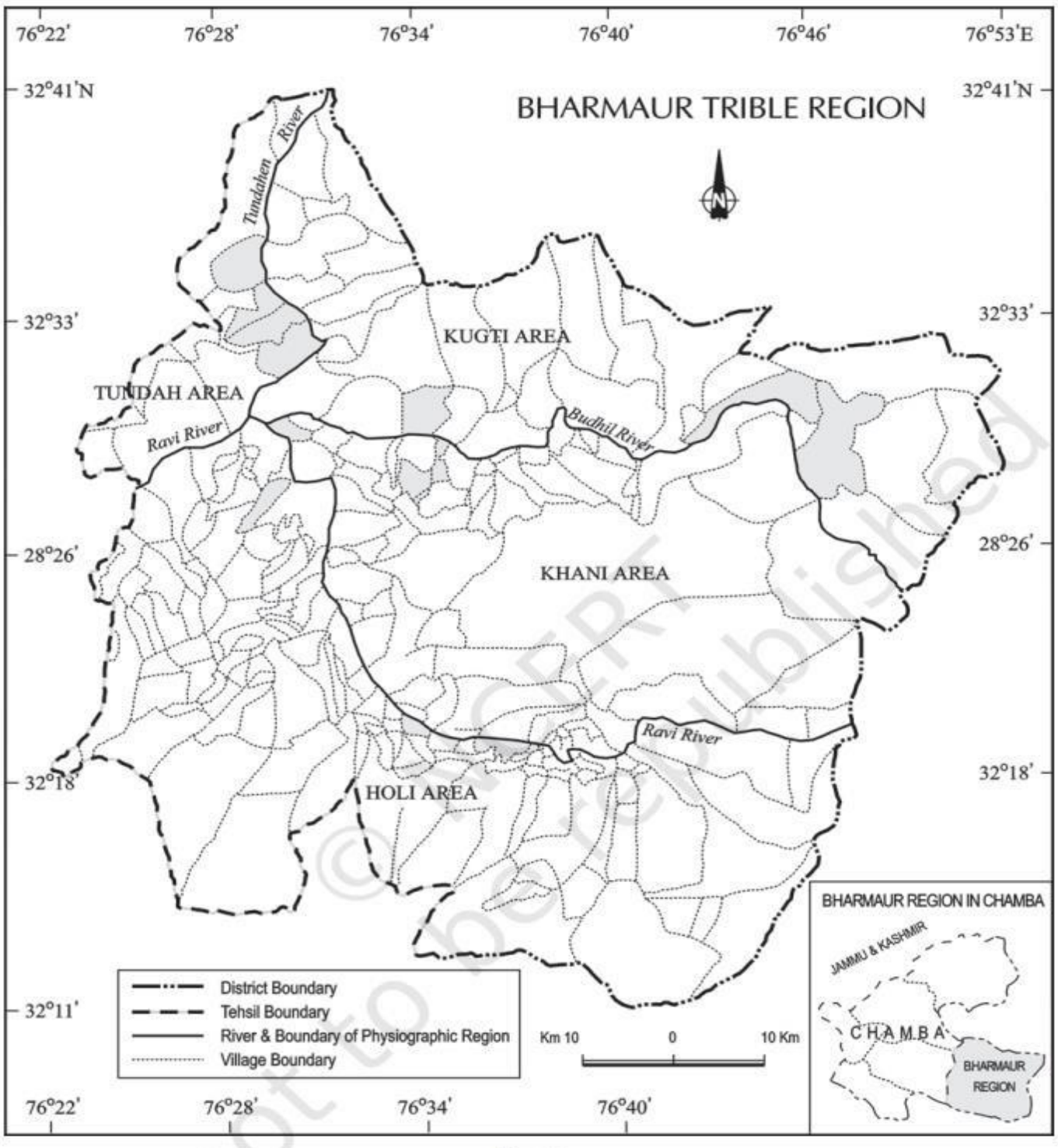
Case Study – Integrated Tribal Development Project in Bharmaur*Region

Bharmaur tribal area comprises Bharmaur and Holi tehsils of Chamba district of Himachal Pradesh. It is a notified tribal area since 21 November 1975. Bharmaur is inhabited by ‘Gaddi’, a tribal community. They practiced transhumance and conversed through Gaddiali dialect.

Bharmaur tribal region has harsh climate conditions, low resource base and fragile environment.

According to the 2011 census, the total population of Bharmaur sub-division was 39,113 i.e., 21 persons per sq km. It is one of the most (economically and socially) backward areas of Himachal Pradesh.

The process of development of tribal area of Bharmaur started in 1970s when Gaddis were included among ‘scheduled tribes. The Fifth Five Year Plan, the tribal sub-plan was introduced in 1974 and Bharmaur was designated as one of the five Integrated Tribal Development Projects (ITDP) in Himachal Pradesh.



* The most significant contribution of tribal sub-plan in Bharmaur region is the development of infrastructure in terms of schools, healthcare facilities, potable water, roads, communications and electricity.

The villages located along the river Ravi in Holi and Khani areas are the main beneficiaries of infrastructural development. The remote villages in Tundah and Kugti areas still do not have sufficient infrastructure.

The social benefits derived from ITDP include tremendous increase in literacy rate, improvement in sex ratio and decline in child marriage. The female literacy rate in the region increased from 1.88 per cent in 1971 to 65 per cent in 2011. The difference between males and females in literacy level i.e. gender inequality, has also declined.

Traditionally, the Gaddis had subsistence agricultural-cum-pastoral economy, but during the last three decades of twentieth century, the cultivation of pulses and other cash crops has increased in Bharmaur region. The declining importance of pastoralism in the economy of the region can be gauged from the fact that at present

only about one-tenth of the total households practice transhumance.

Sustainable Development

The term development is generally used to describe the state of particular societies and the process of changes experienced by them. The processes of human environment interaction depend upon the level of technology and institutions nurtured by a society. While the technology and institutions have helped in increasing the pace of human environment interaction, the momentum thus, generated in return has accelerated technological progress and transformation and creation of institutions. **Hence, development is a multi-dimensional concept and signifies the positive, irreversible transformation of the economy, society and environment.**

* The concept of development is dynamic and was synonymous to economic growth.
* In 1970s, the phrases such as redistribution with growth and growth and equity were incorporated in the definition of development. While dealing with the questions related to redistribution and equity, it was realized that the concept of development cannot be restricted to the economic sphere alone. It also includes the issues such as improving the well-being and living standard of people, availing of the health, education and equality of opportunity and ensuring political and civil rights.

By 1980s, development emerged as a concept encapsulating wide-spread improvement in social as well as material well-being of all in a society.

The notion of sustainable development emerged in the wake of general rise in the awareness of environmental issues in the late 1960s in Western World.

The publication of 'The Population Bomb' by Ehrlich in 1968 and 'The Limits to Growth' by Meadows and others in 1972 further raised the level of fear among environmentalists in particular and people in general.

This sets the scenario for the emergence of new models of development under a broad phrase '**sustainable development.**'

Concerned with the growing opinion of world community on the environmental issues, the United Nations established a World Commission on Environment and Development (WCED) headed by the Norwegian Prime Minister Gro Harlem Brundtland. The Commission gave its report (also known as Brundtland Report) entitled '**Our Common Future' in 1987.**

The report defines sustainable development as a **"development that meets the needs of the present without compromising the ability of future generations to meet their own needs."** Sustainable development takes care of ecological, social and economic aspects of development during the present times and pleads.

Indira Gandhi Canal, (the Rajasthan Canal) is one of the largest canal systems in India. Conceived by Kanwar Sain in 1948, the canal project was launched on 31 March, 1958.

*The canal originates at Harike barrage in Punjab.

*The total planned length of the system is 9,060 km catering to the irrigation needs of a total culturable command area of 19.63 lakh hectares.

*Out of the total command area, about 70 per cent was envisaged to be irrigated by flow system and the rest by lift system.

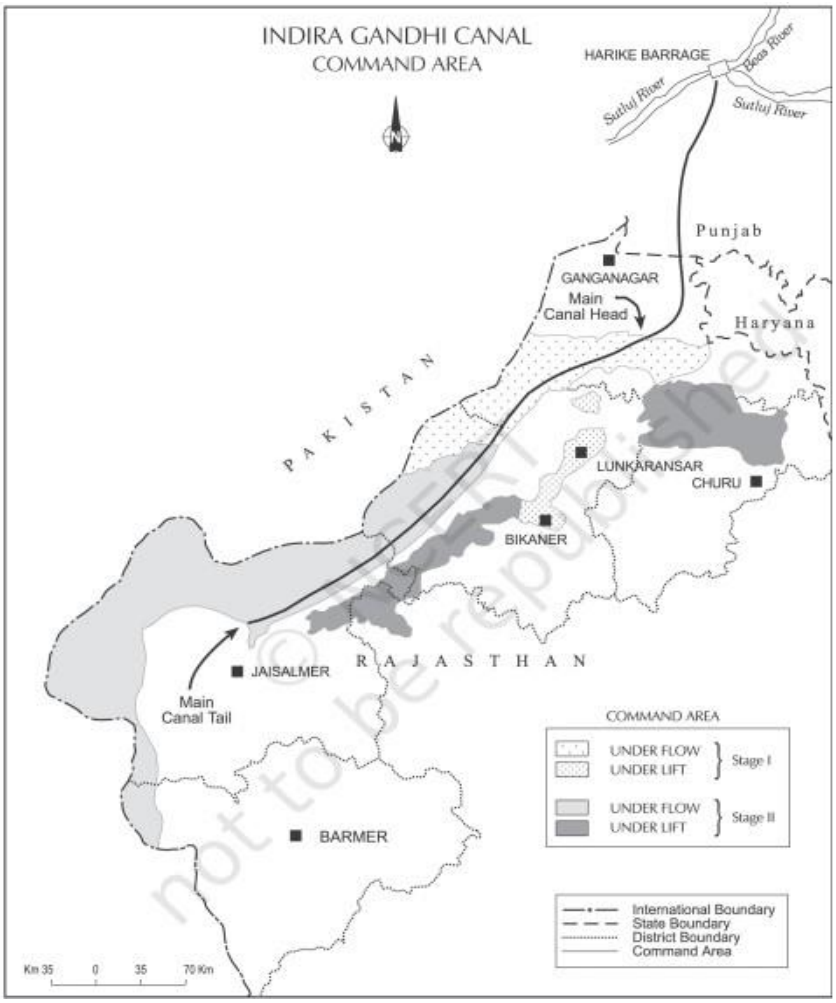
The construction work of the canal system has been carried out through two stages. The command area of Stage-I lies in Ganganagar, Hanumangarh and northern part of Bikaner districts.

The command area of Stage-II is spread over Bikaner, Jaisalmer, Barmer, Jodhpur, Nagaur and Churu districts covering culturable command area of 14.10 lakh ha. It comprises desert land dotted with shifting sand dunes and temperature soaring to 50ºC in summers.

In the lift canal, the water is lifted up to make it to flow against the slope of the land. All the lift canals of Indira Gandhi Canal system originate at the left bank of main canal while all the canals on the right bank of main canal are flow channels.

Irrigation in Stage-I command area of the canal was introduced in early 1960s, whereas, the command area of Stage-II began receiving irrigation in mid-1980s.

The introduction of canal irrigation in this dry land has transformed its ecology, economy and society.



Positive Impacts:

* The availability of soil moisture, and various afforestation and pasture development programmes under CAD have resulted in greening the land.

  *This has also helped in reducing wind erosion and siltation of canal systems.

* This intensive irrigation, has led to tremendous increase in agricultural and livestock productivity.

* Spread of canal irrigation has led to increase in cultivated area and intensity of cropping. The traditional crops sown in the area, gram, bajra and jowar have been replaced by wheat, cotton, groundnut and rice.

Negative Impact:

* The intensive irrigation and excessive use of water has led to the emergence of twin environmental problems of waterlogging and soil salinity, in the long run, it hampers the sustainability of agriculture.

MCQs (1 Marks)

1. Regional planning relates to:

(a) Development of various sectors of economy. (b) Area specific approach of development.

(c) Area differences in transportation network. (d) Development of rural areas.

Answer: (b) Area specific approach of development.

2. ITDP refers to which one of the following?

(a) Integrated Tourism Development Programme (b) Integrated Travel Development Programme

(c) Integrated Tribal Development Programme (d) Integrated Transport Development Programme

Answer: (c) Integrated Tribal Development Programme

3. Which one of the following is the most crucial factor for sustainable development in Indira Gandhi

Canal Command Area?

(a) Agricultural development (b) Eco-development

(c) Transport development (d) Colonisation of land **Answer: (b) Eco-development**

4. On which factor does the economy development of a region depends?

(A) Relief

(B) Climate (D) Resources

(C) Population

Answer: (D) Resources

5. What should be the height of an area in hill area development programme?

(A) 500 metres (C) 700 metres

(B) 600 metres (D) 800 metres

Answer: (B) 600 metres

6. Which is the main river in Bharmour region?

(A) Chenab (B) Beas (C) Satluj (D) Ravi.

Answer: (D) Ravi.

7.Which tribe lives in Bharmour region?

(A) Bhotia (B) Gaddi (C) Marria (D) Bhil

Answer: (B) Gaddi

8. What is the female literacy rate in Bharmour region?

(A) 32% (B) 35% (C) 40% (D) 42%

Answer: (D) 42%

9. Who wrote the "Our Common Future" report?

(A) Brundtland (B) Medas (C) Ahrlich (D) UNO.

Answer: (A) Brundtland

10. From which Barrage, Indira Canal been taken out?

(A) Bhakra (B) Nangal (C) Harike (D) Thein

Answer: (C) Harike

11. Niti aayog is replaced by which one of the following:

A. National Committee C. Planning Commission

B. Irrigation Commission D. Agriculture Commission

Answer: C. Planning Commission

12. When was Niti aayog formed?

A. 1st April 2016 B. 1st January 2015 C. 31st March 2018 D. 1st April 2017

13. In which five-year plan was 'hill area development program' initiated?

A. fifth five-year plan B. fourth five-year plan

C. third five-year plan D. second five-year plan

Answer: A. fifth five-year plan

14. In which five-year plan 'drought prone area program' initiated?

A. Third Five-Year Plan B. Fourth Five-Year Plan

C. Second Five-Year Plan D. First Five-Year Plan

Answer: B. Fourth Five-Year Plan

15. Name two rivers whose water is collected in Herike Barrage.

A. Mahi and Sabarmati
B. Ravi and chenab
C. satluj and Beas
D. Ravi and budhil

Answer: C. satluj and Beas

16. WCED stands for?

A. Water Conservation and Environment Development
B. World Commission on Environment and Development
C. Water Conservation and Environment Degradation
D. none of these

Answer: B. World Commission on Environment and Development

17. The publication "The population bomb" based on awareness of environmental issues published by

A. Meadows
C. Harlem Brundtland
B. Ehrlich
D. None of the above

Answer: B. Ehrlich

18. Who was Gro Harlem Brundtland?

A. Environmentalist
C. Norwegian Prime Minister
B. Planner
D. A Social Worker

Answer: C. Norwegian Prime Minister

19. The publication "The Limit to Growth" based on awareness of environmental issues published by:

A. Meadows and others
B. Ehrlich
C. Harlem Brundtland
D. None of the above

Answer: A. Meadows and others

20. Sustainable Development Takes Care Of:

A. Topographical Historical and Religious Aspects
B. Scientific Social and Ethnic Aspects
C. Ecological Social and Economic Aspects
D. none of the above

Answer: C. Ecological Social and Economic Aspects

21. "Our Common Future" known as “Brundtland Report” is based on:

A. Economic Development
B. Social Issues
C. Religious Issues
D. Sustainable Development

Answer: D. Sustainable Development

22. Which of the two problems are caused by intensive irrigation in Indira Gandhi command area?

A. Soil erosion and land degradation
B. Expansion of sand dunes and desertification
C. Loss of fertility of soil and slowed down of production
D. Salinity and waterlogging

Answer: D. Salinity and waterlogging

23. When was Bhaurmaur area notified as "tribal area"?

A. 1st April 1951
B. 3rd July 1970
C. 21st November 1975
D. 1st January 1965

Answer: C. 21st November 1975

24. Arrange the correct sequence of column II against the column I.

Column I	**Column II**
Five Year Plans	**Objectives**
(i) 1st Five Year Plan	1. Evolution of good irrigation system

(ii) 2nd Five Year Plan	2. Rapid industrialization
(iii) 3rd Five Year Plan	3. Improvement in the production of wheat
(iv) 4th Five Year Plan	4. Annual growth rate of 5 per cent in agriculture

A) i-1, ii-2, iii-3, iv-4 (B) i-2, ii-3, iii-2, iv-4

(C) i-4, ii-1, iii-3, iv-2 (D) i-3, ii-2, iii-1, iv-4

Answer: A) i-1, ii-2, iii-3, iv-4

25. When was the Indira Gandhi Canal Project launched?

(A) 1948 (B) 1958 (C) 1968 (D) 1978

Answer: (B) 1958

26. Which is the most backward area of Himachal Pradesh?

(A) Sangla (B) Kalpa (C) Barot (D) Bharmaur

Answer: (D) Bharmaur

27. What predictions did Ehrlich make in his book 'The Population Bomb'?

(A) Predicted worldwide famine in the 1970s and 1980s due to overpopulation.

(B) Predicted worldwide floods in the 1970s and 1980s due to overpopulation.

(C) Predicted worldwide food overproduction in the 1970s and 1980s due to overpopulation.

(D) None of the Above

Answer: (A) Predicted worldwide famine in the 1970s and 1980s due to overpopulation.

28. What factor determines the human environment interaction?

(A) Level of technology nurtured by the society. (B) Level of stagnation faced by the society.

(C) Level of love nurtured by the society. (D) All of the Above.

Answer: (A) Level of technology nurtured by the society.

29. The irrigation in the Command Area I was started in:

(A) Early 1940s (B) Early 1950s (C) Early 1960s (D) Early 1970s

Answer: (C) early 1960s

30. The the irrigation in the Command Area II was started in:

(A) Mid- 1960s. (B) Mid -1970s (C) Mid -1980s (D) Mid- 1990s

Answer: (C) Mid -1980s

ASSERTION - REASONING QUESTION

Study the two statements labelled as Assertion (A) and Reason (R) and choose the correct option:

1 **Assertion-** Hill areas development programme were started by the central government and covering 15 all district of Uttarakhand and north eastern states.

Reason-The main objective is to exploit local resources of the hill areas through the development programme of agriculture.

Options: (A) Both A and R are true and R is correct explanation of A

(B) A and R both are true but R is not the correct explanation of A

(C) A is true, R is false

(D) A is false, R is true

Answer (A)A and R both are true but R is the correct explanation of A

2 **Assertion-** Assertion-Drought prone Area programme was initiated during the fourth-year plan.

Reason- After the reviewing the performance of this programme the National Committee on the development of Backward Area formed.

Options: (A) Both A and Rare true and R is correct explanation of A

(B) A and R both are true but R is not the correct explanation of A

(C) A is true, R is false (D) A is false, R is true.

Answer (B)A and R both are true but R is not the correct explanation of A

3 **Assertion-** Regional planning aims at removing regional disparities with respect to development.

Reason- Programmes aimed at development of various sectors of the economy such as agriculture.

Options: (A) Both A and R is true and R is correct explanation of A.

(B) A and R both is true but R is not the correct explanation of A.

(C) A is true, R is false. (D) A is false, R is true

Answer (A) Both A and R are true and R is correct explanation of A.

4 **Assertion-** The eighth five year plan was launched immediately after the policy of liberalization was adopted by the government of India.

Reason- For the faster economic growth and manufacturing sectors and agriculture. Options: (A) Both A and R is true and R is correct explanation of A.

(B) A and R both is true but R is not the correct explanation of A.

(C) A is true, R is false. (D) A is false, R is true

Answer (A) Both A and R are true and R is correct explanation of A.

5 **Assertion-** Annual plan was deferred due to problems faced by the country.

Reason- Annual Plans were adopted for a period of three years.

Options: (A) Both A and R are true and R is correct explanation of A.

(B) A and R both are true but R is not the correct explanation of A.

(C) A is true, R is false. (D) A is false, R is true

Answer (C) A is True, R is False

6 **Assertion-** (A) Regional planning relates to: Area specific approach of development.

Reason- (B) It refers Development of rural areas only.

Options: (A) Both A and R is true and R is correct explanation of A.

(B) A and R both is true but R is not the correct explanation of A.

(C) A is true, R is false. (D) A is false, R is true

Answer (C) A is true, R is false

Source Based Questions:

I. Read the case study given below and answer the questions that follow:

Drought Prone Area Programme was initiated during the Fourth Five Year Plan with the objectives of providing employment to the people in drought-prone areas and creating productive assets. Initially, this programme laid emphasis on the construction of labour intensive civil works. But later on, it emphasized on irrigation projects, land development programmes, afforestation, grassland development and creation of basic rural infrastructure, such as electricity, roads, market, credit and services.

The National Committee on Development of Backward Areas reviewed the performance of this programme. It has been observed that this programme is largely confined to the development of agriculture and allied sectors with major focus on restoration of ecological balance. Since growing population pressure is forcing the society to utilize the marginal lands for agriculture, and, thereby causing ecological degradation, there is a need to create alternative employment opportunities in the drought-prone areas. The other strategies of development of these areas include adoption of integrated watershed development approach at the micro-level. The restoration of ecological balance between water, soil, plants, and human and animal population should be a basic consideration in the strategy of development of drought-prone areas.

Q. 1. When was the Drought Prone Area Programme initiated?

(A) Fourth Five Year Plan (B) Fifth Five Year Plan

(C) Sixth Five Year Plan (D) Seventh Five Year Plan

Answer: (A) Fourth Five Year Plan

Q. 2. What was its objective?

(A) Providing employment to the people in drought-prone areas (B) Creation of basic rural infrastructure

(C) Afforestation (D) All of the above

Answer: (D) All of the above

Q. 3. Who reviewed the performance of the DPAP?

(A) National Committee on Development of Backward Areas

(B) National Commission on Development of Backward Areas

(C) National Compartment on Development of Backward Areas

(D) None of the Above

Answer: (A) National Committee on Development of Backward Areas

II. Read the case study given below and answer the questions that follow:

Bharmaur tribal area comprises Bharmaur and Holi tehsils of Chamba district of Himachal Pradesh. It is a notified tribal area since 21 November 1975. Bharmaur is inhabited by 'Gaddi', a tribal community who have maintained a distinct identity in the Himalayan region as they practiced transhumance and conversed through Gaddiali dialect. Bharmaur tribal region has harsh climate conditions, low resource base and fragile environment. These factors have influenced the society and economy of the region.

According to the 2011 census, the total population of Bharmaur sub-division was 39,113 i.e., 21 persons per sq km. It is one of the most(economically and socially) backward areas of Himachal Pradesh. Historically, the Gaddis have experienced geographical and political isolation and socio- economic deprivation. The economy is largely based on agriculture and allied activities such as sheep and goat rearing. The process of development of tribal area of Bharmaur started in 1970s when Gaddis were included among 'scheduled tribes'.

Q. 1. In which year was Bharmaur notified as a tribal area?

(A) 1965 (B) 1975 (C) 1985 (D) 1995

Answer: (B) 1975

Q. 2. What was the population of Bharmaur according to the 2011 Census?

(A) 39,113 (B) 29,113 (C) 49,113 (D) 59,113

Answer: (A) 39,113

Q. 3. Bharmaur is the most economically backward area of _____.

(A) Uttarakhand (C) Jammu & Kashmir

(B) Himachal Pradesh (D) Ladakh

Answer: (B) Himachal Pradesh

Q. 4. The process of development of tribal area of Bharmaur started in _____ when Gaddis were included among 'scheduled tribes'.

(A) 1950s (B) 1960s (C) 1970s (D) 1980s

Answer: (C) 1970s

III. Read the case study given below and answer the questions that follow:

Indira Gandhi Canal, previously known as the Rajasthan Canal, is one of the largest canal systems in India. Conceived by Kanwar Sain in 1948, the canal project was launched on 31 March, 1958. The canal originates at Harikebar rage in Punjab and runs parallel to Pakistan border at an average distance of 40 km in Thar Desert (Marusthali) of Rajasthan. The total planned length of the system is 9,060 km catering to the irrigation needs of a total culturable command area of 19.63 lakh hectares. Out of the total command area, about 70 per cent was envisaged to be irrigated by flow system and the rest by lift system. The construction work of the canal system has been carried out through two stages. The command area of Stage-I lies in Ganganagar, Hanumangarh and northern part of Bikaner districts. It has a gently undulating topography and its culturable command area is 5.53 lakh hectares. The command area of StageII is spread over Bikaner, Jaisalmer, Barmer, Jodhpur, Nagaur and Churu districts covering culturable command area of 14.10 lakh ha. It comprises desert land dotted with shifting sand dunes and temperature soaring to 50°C in summers. In the lift canal, the water

is lifted up to make it to flow against the slope of the land. All the lift canals of Indira Gandhi Canal system originate at the left bank of main canal while all the canals on the right bank of main canal are flow channels.

Q. 1. When was the Indira Gandhi Canal Project launched?

(A) 1948 (B) 1958 (C) 1968 (D) 1978

Answer: (B) 1958

Q. 2. The canal caters to the irrigation needs of a total culturable command area of _____lakh hectares.

(A) 19.63 (B) 19.83 (C) 19.73 (D) 19.93

Answer: (A) 19.63

Q. 3. The command area of _____is spread over Bikaner, Jaisalmer, Barmer, Jodhpur, Nagaur and Churu districts.

(A) Stage I (B) Stage II (C) Stage III (D) Stage IV

Answer: (B) Stage II

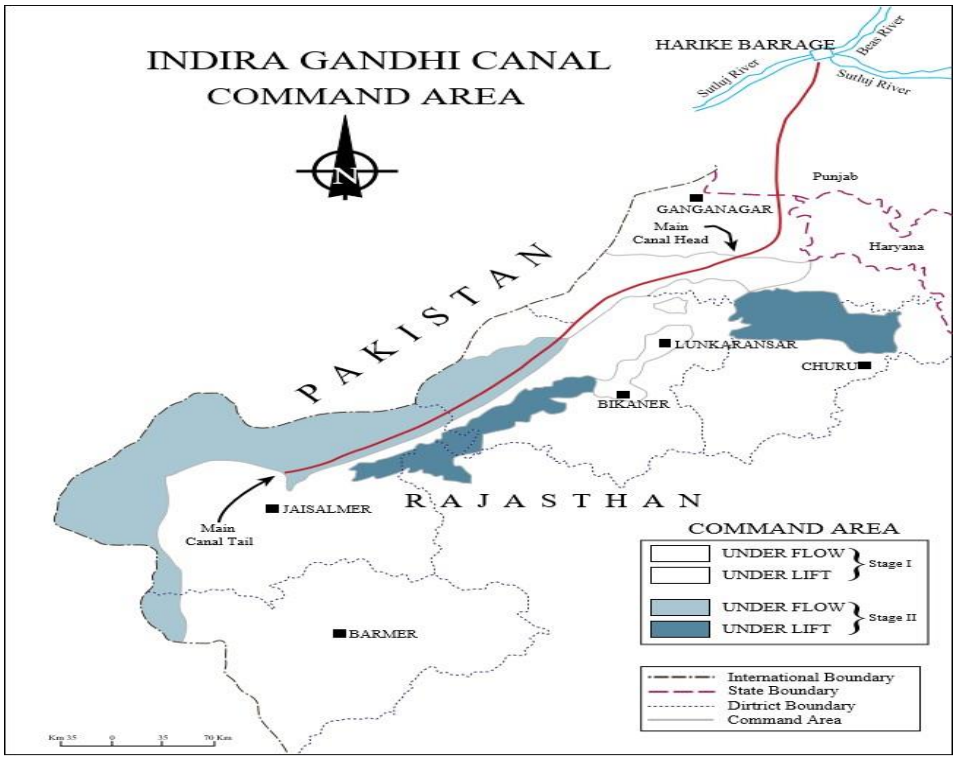
Q. 4. In _____ water is not transported by natural flow, but is lifted with pumps or surge pools.

(A) Lift canal (B) Shift canal

(C) Substitute canal (D) none of the above

Answer: (A) Lift canal

IV Question: Study the map carefully and answer the questions that follow:



(i)Mention the source of origin of this canal.

Answer: Harike Barrage / confluence of the Satluj and Beas.

(ii) Why is the area to the east of this canal under lift irrigation?

Answer: It comprises desert land dotted with shifting sand dunes. In the lift canal, the water is lifted up to make it to flow against the slope of the land.

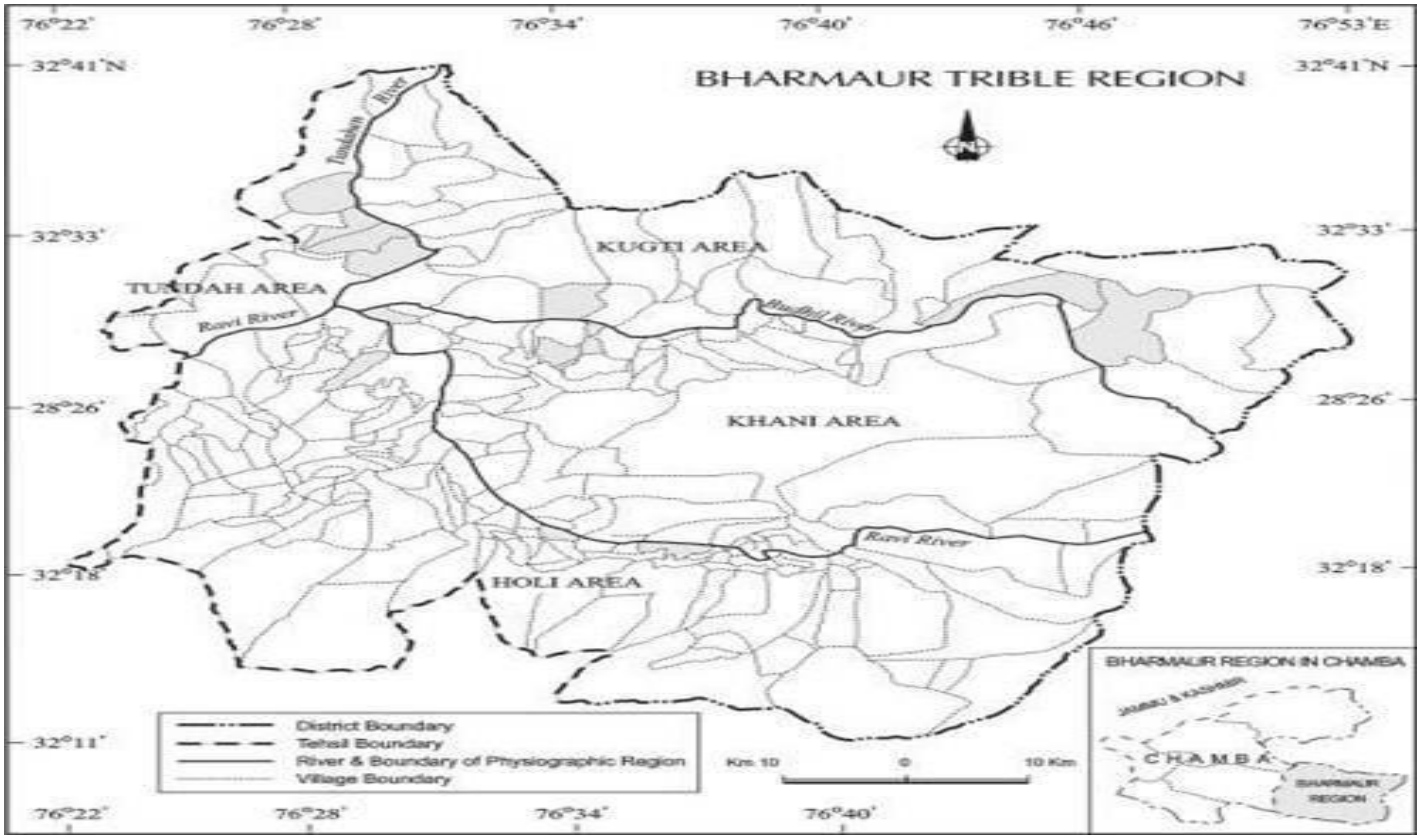
(iii) Explain the economic significance of this canal for command area.

Answer: **Economic significance of this canal for command area: -** The introduction of canal irrigation in this dry land has transformed its ecology, economy and society. (i) Spread of canal irrigation has led to increase in cultivated area and intensity of cropping.

(ii) The traditional crops sown in the area, gram, bajra and jowar have been replaced by wheat, cotton, groundnut and rice. This is the result of intensive irrigation.

(iii) It led to tremendous increase in agricultural and livestock productivity.

V Question: Study the map carefully and answer the questions that follow:



i) The rivers of Bharmaur Region divide the area into four physiographic divisions.

Write the Name of those areas.

Answer: Holi, Khani, Kugti and Tundah areas.

(ii) Which is the main river of this region?

Answer: Ravi

(iii) Which district of Himachal Pradesh shown in this map?

Answer: Chamba

Short Answer type Questions (3 Marks)

1. What are the two approaches to planning in India?

Answer: The two approaches to planning in India are: Sectoral Planning and Regional Planning

2. What do you mean by sectoral planning?

Answer: Sectoral planning means formulation and implementation of schemes or programmes for the development of various sectors of the economy such as agriculture, irrigation, power, manufacturing, construction, transport, communication, services and social infrastructure.

3. What do you mean by regional planning?

Answer: Regional planning means formulation and implementation of schemes or programmes for the development of backward region to reduce regional imbalance in the development.

4. Give examples of programmes directed towards the development of target area in the country. Answer:

* Command Area Development Programme
* Desert Development Programme
* Drought-prone Area Development Programme
* Hill Area Development Programme
* The Small Farmers Development Agency (SFDA) and Marginal Farmers Development Agency (MFDA).

These are the few examples of target group programme.

5. When was the tribal sub plan introduced?

Answer: Tribal sub plan was introduced in 1974, under Fifth Five Year Plan

6. What are the two phases incorporated •in the definition of development? Answer: The two phases are:

* Redistribution with growth
* Growth and equity

7. Mention the issues included in the concept of development.

Answer: The issues included in the concept of development are as improving the well-being and living standard of people, availing of health, education and equality of opportunity and ensuring political and civil rights.

8. Name the two publications associated with sustainable development.

Answer: The Population Bomb' by Ehrlich in 1968. The Limits to Growth' by Meadows.

9. What is meant by target area?

Answer: In order to arrest regional imbalance, schemes and programmes for the development of backward regions of India which needs special attention were introduced in the form of target area.

10. What are the features of Indira Gandhi Canal Command area?

Answer: Indira Gandhi Canal, previously known as Rajasthan Canal, is one of the largest canal systems in India.

* It originates at Harike barrage in Punjab and runs parallel to Pakistan border at an average distance of 40 km in Thar Desert.
* Its total length is 9,060 km.
* It caters to the irrigation needs of a total culturable command area of 19.63 lakh hectares.

Very Short Answer Type Questions 1 Marks

Question 1. Mention the important features of Hill Area Development Programmes.

Answer: Hill Area Development Programmes were initiated during Fifth Year Plan.

It covered 15 districts comprising all the hilly districts of Uttar Pradesh, Uttarakhand, Assam, West Bengal and Tamil Nadu.

The hill areas in the country having height above 600 metres and not covered under tribal sub plan be treated as Backward Hill Areas.

These programmes aimed at harnessing the indigenous resources of the hill areas through development of horticulture, plantation agriculture, animal husbandry, poultry, forestry and small-scale and village industry.

Question 2. Name those Five Year Plans of India which could not complete its duration.

Answer: India has centralized planning and the task of planning in India has been entrusted to the Planning Commission. It is a statutory body headed by the Prime Minister and has a Deputy Chairman and members. The planning in the country is largely carried out through Five Year Plans by the Planning Commission.

Two successive droughts during mid-sixties (1965-66 and 1966-67) and war with Pakistan in 1965 forced plan holiday in 1966-67 and 1968-69. This period was covered by annual plans. It was called rolling plans. The Fifth Five Year Plan began in 1974-75 but it was terminated by the then government one year earlier, i.e. in 1977-78. Once again due to the political instability and initiation of liberalization policy, the Eighth Five Year Plan got delayed.

Question 3. Explain the need and importance of Target Area Planning.

Answer:

Need of Target Area Planning:

The planning process has to take special care of those areas which have remained economically backward. The economic development of a region depends upon its resource base. But resources are not equally distributed. Economic development also requires technological investments besides resource. Therefore, sometimes resource-rich regions also remain backward. It demands Target Area Planning for balanced regional development.

Importance of Target Area Planning:

With the planning experience of about one and half decades, it was realized that regional imbalances in economic development were getting accentuated. In order to arrest the accentuation of regional and social disparities, the Planning Commission introduced the 'target area' and 'target group' approaches to planning.

It will help in bringing balanced regional development which in turn has multiple benefits.

Question 4. Mention the important features of Drought Prone Area Programmes.

Answer: This programme was initiated during the Fourth Five Year Plan.

Irrigation Commission (1972) introduced the criterion of 30 per cent irrigated area and demarcated the drought prone areas.

The objectives of providing employment to the people in drought-prone areas and creating productive assets.

This programmes laid emphasis on the construction of labour intensive civil works. Irrigation projects, land development programmes, afforestation, grassland development and creation of basic rural infrastructure such as electricity, roads, market, credit and services.

Other strategies include adoption of integrated watershed development approach at micro level. The restoration of ecological balance between water, soil, plants and human population.

Question 5. What are the positive and negative influences of Indira Gandhi Canal Command Area Development Programme on the environment of the region?

Answer: The positive and negative, influences of Indira Gandhi Canal Command Area Development Programme are as follows:

Positive:

The availability of soil moisture for a longer period of time and various afforestation and pasture development programmes under CAD have resulted in transformation in agricultural economy.

Spread of canal irrigation has led to increase in cultivated area and intensity of cropping.

It has also helped in reducing wind erosion and siltation of canal systems.

Traditional crops such as gram, bajra and jowar have been replaced by wheat, cotton, groundnut and rice.

Intensive irrigation led to an increase in agricultural and livestock productivity.

Negative:

The intensive irrigation and excessive use of water has led to the emergence of twin environmental problems of waterlogging and soil salinity.

Soils are getting infertile and thus in the long run agriculture would be affected.

It has degraded the environment of the region hampering sustainability of agriculture.

Question 6. Indian lifestyle was quite environment friendly but globalization has brought a change in lifestyle which is not environment friendly. Do you agree? Justify your answer.

Answer: It is quite right that Indian lifestyle is environment friendly. People use local materials to build houses; natural cycle is followed in agriculture so that soil is replenished. They are habitual of working during day hours and hence electricity consumption is less. But due to globalization, we have come in contact with western nations. It has affected our old ways and our lifestyles are no more environment friendly with increased use of resources.

Long Answer Type Questions (5 marks)

Question 1. Which socio-economic benefits are being experienced by implementation of Integrated Tribal Development Project in Bharmaur?

Answer: Two tehsils of Chamba district of Himachal Pradesh, namely Bharmaur and Holi were notified as a tribal area since 21 November, 1975. Bharmaur is inhabited by 'Gaddi', a tribal community who have maintained a distinct identity in the Himalayan region as they practise transhumance and conversed through Gaddiali dialect. It is one of the economically and socially backward areas of Himachal Pradesh. Due to implementation of Integrated Tribal Development Project (ITDP), there have been tremendous socio-economic benefits,

Social Benefits:

The most significant contribution of tribal subplan in Bharmaur region is the development of infrastructure in terms of schools, health care facilities, potable water, roads, communications and electricity.

- Tremendous increase in literacy rate (female literacy increase from 1.9% to 65%)
- Improvement in sex ratio.
- Decline in child marriage.

- Difference between males and females in literacy rate, i.e. gender inequality, has also declined.

Economic Benefits:

The cultivation of pulses and other cash crops has increased in Bharmaur region.

Now a few people practice transhumance because the importance of pastoralism is gradually declining. (About 1/10 household practices pastoralism).

Question 2. What measures for promotion of sustainable development have been taken under Indira Gandhi Canal Command Area?

Answer: The following measures for promotion of sustainable development have been taken under Indira Gandhi Canal Command Area:

The first requirement is strict implementation of water management policy. It envisages protective irrigation in Stage-I and extensive irrigation of crops and pasture development in Stage-II.

The cropping pattern shall not include water-intensive crops. It shall be adhered to and people shall be encouraged to grow plantation crops such as citrus fruits.

The CAD programmes such as lining of water courses, land development and levelling and warabandi system shall be effectively implemented to reduce the conveyance loss of water.

The areas affected by water logging and soil salinity shall be reclaimed.

The eco-development through afforestation, shelterbelt plantation and pasture development is necessary particularly in the fragile environment of Stage II.

The social sustainability in the region can be achieved only if the land allottees having poor economic background are provided adequate financial and institutional support for cultivation of land.

The agricultural and allied activities have to develop along with other sectors of economy. It leads to diversification of economic base and establishment of functional linkages between basic villages, agro-services centres and market centres.

Question 3. Write short notes on drought-prone area programme. How does this programme help in the development of dry land agriculture in India?

Answer: Drought prone area programme was initiated during the Fourth Five Year Plan with the objectives of providing employment to the people in drought-prone areas and creating productive assets. Initially this programme laid emphasis on the construction of labour intensive civil works. But later on, it emphasized on irrigation projects, land development programmes, afforestation, grassland development and creation of basic rural infrastructure such as electricity, roads, market, credit and services.

Since growing population pressure is forcing the society to utilize the marginal lands for agriculture, and, thereby causing ecological degradation, there is a need to create alternative employment opportunities in the drought-prone areas. The other strategies of development of these areas include adoption of integrated watershed development approach at the micro-level. The restoration of ecological balance between water, soil, plants, and human and animal population should be a basic consideration in the strategy of development of drought-prone areas. Broadly, the drought- prone area in India spread over semi-arid and arid tract of Rajasthan, Gujarat, Western Madhya Pradesh, Marathwada region of Maharashtra, Rayalseema and Telangana plateaus of Andhra Pradesh, Karnataka plateau and highlands and interior parts of Tamil Nadu. The drought prone areas of Punjab, Haryana and north-Rajasthan are largely protected due to spread of irrigation in these regions.

Since the focus of the programme is sustainable development of the entire ecology and provide with the irrigational facilities to the regions, therefore the dry land agriculture gets a boost. The adoption of integrated watershed management and other programmes also contribute towards common property resource, collective farming etc. which increases the size of the cultivable plots, increasing the productivity. With introduction of drought prone area programmes, even the areas in the dry land region were able to avail proper agricultural technology and therefore dry land agriculture had prospects of increased productivity.

Question 4. Suggest the measures of promotion of sustainability in Indira Gandhi Canal Command Area.

Answer: The ecological sustainability of Indira Gandhi Canal Project has been questioned by various scholars. It is a hard fact that attaining sustainable development in the command area requires major thrust upon the measures

to achieve ecological sustainability. Hence, five of the seven measures proposed to promote sustainable development in the command area are meant to restore ecological balance.

* The first requirement is strict implementation of water management policy. The canal project envisages protective irrigation in Stage-I and extensive irrigation of crops and pasture development in Stage-II.
* In general, the cropping pattern shall not include water intensive crops. It shall be adhered to and people shall be encouraged to grow plantation crops such as citrus fruits.
* The CAD programmes such as lining of water courses, land development and levelling and warabandi system (equal distribution of canal water in the command area of outlet) shall be effectively implemented to reduce the conveyance loss of water.
* The areas affected by water logging and soil salinity shall be reclaimed.
* The eco-development through afforestation, shelterbelt plantation and pasture development is necessary particularly in the fragile environment of Stage-II.
* The economic sustainability in the region cannot be attained only through development of agriculture and animal husbandry. The agricultural and allied activities have to develop along with other sectors of economy. This shall lead to diversification of economic base and establishment of functional linkages between basic villages, agro-service centers and market centers.

CHAPTER 7 – TRANSPORT AND COMMUNICATION

Main Points of the Chapter

Transport is a service or facility for the carriage of persons and goods from one place to the other using humans, animals and different kinds of vehicles such movements take place overland roadways railways water waves and air airways. The use of transport and communication depends upon our need to move things from place of their availability to the place of their huge.

Road Transport

. India has one of the 2nd largest road networks in the world with a total length of about 62.16 lakh kilometer

. About 85% of passenger and 70% of freight traffic are carried by roads every year.

. Road transport is relatively suitable for shorter distance travel.

. For the purpose of construction and maintenance, roads are classified as National Highways (NH), State Highways (SH), Major District Roads and Rural Roads.

National Highways

. The main roads which are constructed and maintained by the central government are known as the national highways.

. These roads are constructed and maintained by the Central Government. These roads are meant for interstate transport and movement of defense men and material in strategic areas. These roads connect all the capitals of States.

. The length of the National Highways has increased from 19,700 km in 1951 to 1, 36,440 km

In 2020.

. The National Highway constitute only about 2% of the total road length but carry 40% of the road traffic.

. The National Highway's authority of India (NHAI) was operationalised in 1995.

. It is interested with the responsibility of development, maintenance and operation of National Highways.

NHAI has taken up some major projects in the country under different phases.

Golden Quadrilateral:

. It comprises construction of 5,846 km long 4 /6 lane, high density traffic corridor, to connect India's four big metro cities of Delhi - Mumbai - Chennai - Kolkata.

North South and East West corridors:

. North- South corridor aims at connecting Srinagar in Jammu and Kashmir with Kanyakumari in Tamil Nadu (including Koch chi - Salem Spur) with 4,076 km long road.

State Highways

. These are constructed and maintained by state governments

. They join the state capitals with district headquarters and other important towns.

. These roads are connected to the National Highways. These constitute 4% of total road length in the country.

District Roads

These roads are the connecting link between District Headquarters and other important nodes in the district. They account for 14% of the total road length of the country.

Rural Roads

. These roads are vital for providing links in the rural areas .About 80% of the total road length in India are categorized as rural roads.

Other Roads

Other roads include Border Roads and International Highways. The Border Road Organization was established in May nineteen 164 accelerating economic development and strengthening defence preparedness.

This organization has expertise to construct loads in strategic areas.

. The world's longest Highway tunnel - Atal Tunnel (9.02km) has been built by Border Road Organisation. This tunnel connects Manali to Lahaul - spiti valley throughout the year.

Rail Transport

. Indian Railways, network is one of the longest in the world. It facilitates the movement of both freight and passengers and contributes to the growth of the economy.

. Mahatma Gandhi said, the Indian railways "brought people of diverse culture together to contribute to India's freedom struggle."

. It was introduced in 1853 from Bombay to Thane covering 34 km.

. The length of Indian railways network was 67,956 km (Railway yearbook 2019 - 20). It has been divided into 16 zones.

On the basis of the width of track Indian Railways are divided into three categories

Broad gauge: The distance between Rails in broad-gauge is 1.676 metre. The total length of broad gauge lines was 63950 km (2019-20).

Meter gauge: The distance between rails is one meter. Its total length was 2402 km (2019 - 20).

Narrow gauge: The distance between the rails in this case is 0.762 meter or 0.610 metre. The total length of narrow gauge was 1604 km (2019- 20). It is generally confined to hilly areas.

. Konkan Railway is 760 Km long rail route connecting Roha in Maharashtra to Mangalore in Karnataka. It crosses 146 rivers, streams, nearly 2000 bridges and 91 tunnels.

Water Transport

. Waterways is an important mode of transport for both passenger and cargo traffic in India. It is the cheapest means of transport and is most suitable for carrying heavy and bulky material.

. The water transport is of two types -

(a) Inland waterways and (b) oceanic water ways.

Inland Waterways

. It was the chief mode of transport before the advent of railways.

. India has 14,500 km of navigable waterways, contributing about 1% to the country's transportation.

. It comprises rivers, canals, backwaters, creeks etc.

. For the development, maintenance and regulation of national waterways in the country, the Inland Waterways Authority was set up in 1986.

_ N W No - 1 is on The Ganga River between Prayagraj to Haldia (1620 km).

_ N W No - 2 is on the Brahmaputra River between Sadhya to Dhubri (891 km).

_ N W No - 3 is at western coastal canalin Kerala - Kottapurum - Kollam, Udyogmandal and Champakara canal of 205 km. and Champa Kara canal of 205 km. The famous Nehru Trophy Boat race (VALLAMKALI) is also held in the backwaters.

_ N W No - 4 is on specific stretches on Godavari and Krishna rivers of 1078 km.

_ N W No - 5 is on Mahanadi and Brahmani rivers and east coast canal of 588 km.

_ 95% of the country's trade volume (70% in terms of value) is moved by sea.

Oceanic Routes

. Oceanic routes play an important role in the transport sector of India's economy. Approximately 95% of India's foreign trade by volume and 70% by value moves through ocean routes.

. They also provide transportation between the islands and the rest of the country.

Air Transportation

. Air transport is the fastest means of movement from one place to the other. It has reduced distances by minimizing the travel time.

. 1911 - Air transport in India was launched between Allahabad and Naini.

. In 2010, domestic movement involved 520.21 lakh passengers and about 23 lakh metric tonnes of cargo .Pawan Hans is the helicopter service operating in hilly areas and is widely used by tourists in Northeastern sector. In addition, Pawan Hans limited mainly provides helicopter services to petroleum sector and for tourism.

Oil and Gas Pipelines:

. Pipelines are the most convenient and efficient mode of transporting liquids and gases over long distances.

1. Asia's first cross country pipeline covering a distance of 1,157 km was constructed by OILfrom Nahar Katiya oilfield in Assam to Barauni refinery in Bihar. It was further extended up to Kanpur in 1966.

2. 1256 km long from Salaya in Gujarat to Jalandhar in Punjab via Mathura, Delhi and Sonipat.

3. Gas pipeline from Hazira in Gujarat connects Jaladhar in Punjab via Vijaypur in MP.

4. Oil is in the process of constructing of 660 km long pipeline from Numaligarh to Siliguri.

Five types of products are carried through pipelines in India.

. Crude oil from oil producing areas or from ports to refineries.

. Petroleum products like petrol, diesel, kerosene etc from refineries to market.

. Natural gas.

. Solids like iron ore in slurry form.

. LPG (Liquefied Petroleum Gas)

Advantages of Oil and Gas Pipeline

(i) Chief Minister of Transport.

(ii) Time and Energy saving.

(iii) Possible in all Types of Areas.

(iv) Regular and continuous supply.

(v) Lower Pollution Risk.

Shortcomings:

* The speciality is strong, that transportation goods are too specialised, and the transportation items are limited to gases, liquids and fluids.

* The distance between the pipeline transportation volume and the maximum transportation volume is small. Therefore, in the initial stage of oilfield development, when pipeline transportation is difficult, road and land and water transportation should be used as a transition.

* Forever one - way transportation.

* Fixed investment is large. Initial investment is very high.

Advantages of Roadways

. Construction cost of roads is much lower than that of railway lines.

. Roads can traverse comparatively more dissected and undulating topography.

. Road transport is economical in transportation of few persons and relatively smaller amount of goods over short distances.

. It also provides door-to-door service.

. Road transport functions as the linkage between many other modes of transportation.

Advantages of Railways

. Important source of employment in India. Lakhs of skilled and unskilled people are employed in operating the railway.

. Railways encourage the tourism sector of the country.

. Helpful during famines by carrying foods grains from surplus to affected areas.

. Railways have increased the mobility of labor and capital which has contributed the rapid industrialization of the country.

. Heavy and bulky goods can easily be transported by railways.

. Railways are useful for internal security of country and carry the defense material to various locations during external threat.

. By connecting various areas of the country railways have made internal trade convenient.

Sometimes railways suffer with some problems also as -

* Railway accident create huge loss.
* Technology used in railways is quite outdated. It needs to be modernized.
* Railway engines, wagons and other equipment are quite old and require replacement.
* Railways do not provide door-to-door services.
* Indian railways have to bear great loss every year on account of travelling without tickets.
* Construction cost is high.

Advantages of waterways.

* Waterways are the cheapest means of transport.
* They are most suitable for carrying heavy and bulky goods and long distances.
* It is a fuel - efficient and environment friendly mode of transport.

Airways

* It is the fastest mode of transportation and cover longer distance.
* Air transport provides comfortable, prestigious, efficient and quick transport services.
* It does not require construction of tracks like railways.
* It is accessible to all the areas regardless and obstruction of land like mountains etc.
* That's why it is used for transportation in Northeastern States of India where making road and railways are very challenging. Like Pawan Hans helicopter.
* It plays a significant role in the national defense of the country because modern wars are conducted with the help of aero planes. Airways has a upper hand a destroying the enemy in a short period.

Disadvantages

* Air transport is very risky where a minor accident may create disaster.
* It is costliest compared to other modes of transportation.
* It requires huge investment.
* The aircraft have small carrying capacity and therefore these are not suitable for carrying bulky and cheaper goods.

Communication Network

People use different modes of communication to convey the messages. On the basis of scale and quality, the mode of communication can be divided into following categories.

1. Personal communication system = Posts and telegraph, telephone, Internet,etc .
2. Means of mass communication = Radio, television, newspapers, magazines etc.

Among all the personal communication system Internet is the most effective and advanced one.

What is Internet?

The large system of connected computers around the world, that allows people to share information and communicate with each other.

Mass communication:

Radio:

* Special news bulletins are also broadcast at specific occasions like session of Parliament and state legislatures. It was changed to All India Radio in 1936 and to Akashwani in 1957.

Television:

* Television broadcasting has emerged as the most effective audio - visual medium for disseminating information and educating masses.
* In 1976 TV was delinked from All Indian Radio (AIR) and got a separate identity as Doordarshan (DD1). After INSAT - IA (National Television - DD1) became operational.

Satellites Communication:

* Satellites are mode of communication in themselves as well as they regulate the use of other means of communication.

* Satellite images can be used for the weather forecast monitoring of natural calamities, surveillance of border areas etc.

* The INSAT, which was established in 1983, is a multipurpose satellite system for telecommunication, meteorological observation and for various other data and programmes.

* The IRS satellite system became operational with the launching of IRS - IA in March1988 from Vaikanour in Russia. India has also developed her own Launching vehicle PSLV (Polar Satellite Launch Vehicle).

Multiple Choice Questions

1. In how many zones has the Indian Railways system been divided?

(a) 9 (b) 12 (c) 16 (d) 14

Ans – (c) 16

2. Which one of the following is the longest highway of India?

(a) N.H-1 (b) N.H- 6 (c) N.H- 7 (d) N.H-8

Ans- (c)

3. On which river and between which two places does the National Water Way No. 1 lie?

(a) The Brahmaputra,Sadiya-Dhubri (b) The Ganga , Haldia,- Allahabad

(c) West, Coast Canal, Kottapuram to Kollam

Ans-(b)

4. In which of the following year, the first radio programme was broadcast?

(a) 1911 (b) 1936 (c) 1927 (d) 1923

Ans- (d)

5. Which stations are joined by the North-South corridor?

(a) Srinagar-Kanyakumari (c) Jaipur-Salem

(b) Delhi-Chennai (d) Patna-Kochi

Ans- (a)

6. When was the first Railway run in India?

(a) 1833 (b) 1843 (c) 1853 (d) 1863

Ans (c)

7. Which state has the highest road density in India?

(a) Punjab (b) Kerala (c) Tamil Nadu (d) Karnataka

Ans- (b)

8. What is the length of the broad gauge railway?

(a) 1.5 metres (b) 1.6 metres (c) 1.7 metres (d) 1.8 metres

Ans- (b)

9. When was the first pipeline constructed in India?

(A) 1957 (B) 1958 (C) 1959 (D) 1960

Ans- (c)

10. What is the length of the Golden Quadrilateral highway?

(a) 3,846 km (b) 4,846 km (c) 5,846 km (d) 6, 846 km

Ans- (c)

VERY SHORT TYPE QUESTIONS

11. What is the importance of 16 April 1853 in the history of Indian railways?

Ans- The first train of India started on this day.

12. How many trains are operated daily by Indian Railways?

Ans- 11,000

13. What is the rank of the Indian Railway system in the world?

Ans- Fourth

14. Name three regions with a sparse rail network in India.

Ans- Himalayas, North- Eastern India and Western Rajasthan.

15. how far apart are the rails in broad gauge?

Ans- 1.676 metre.

16. Name the railway zones having their headquarters at Kolkata.

Ans- East and South-Eastern Railway.

17. When did the first train run on Konkan Railway?

Ans- 26 January 1998.

18. On which old road have the National Highways Number 1 and 2 been built?

Ans Grand Trunk Road

19. How much is the total length of the roads in India?

Ans – 33, 4 lakh km

Assertion Reason Questions

Following questions consists of Two Statements Assertion (A) and Reason(R). Answer these questions selecting the appropriated options below

a) Only Assertion (A) is correct b) Only Reason(R) is correct

c) Both Assertion (A) and Reason(R) are correct and Reason(R) is correctly explains Assertion (A)

d) Both Assertion (A) and Reason(R) are correct but not related to each other.

1. **Assertion (A) -** Road transport is relatively suitable for shorter distance travel

   Reason(R)—about 85% of passengers and 70% of trade traffic are carried by roads every year.

Answer- C

2. **Assertion (A)-** North-South corridors aims at connecting Delhi with Kanyakumari in Tamil Nadu.

   Reason(R)—North-South corridor is 4076km long

Ans-B

Source based questions

In Russia, railways account for about 90 per cent of the country's total transport with a very dense network west of the Urals. Moscow is the most important rail head with major lines radiating to different parts of the country's vast geographical area. Underground railways and commuter trains are also important in Moscow. North America has one of the most extensive rail networks accounting for nearly 40 per cent of the world's total? In contrast to many European countries, the railways are used more for long-distance bulky freight like ores, grains, timber and machinery than for passengers. The most dense rail network is found in the highly industrialized and urbanized region of East Central U.S.A. and adjoining Canada. In Canada, railways are in the public sector and distributed all over the sparsely populated areas. The transcontinental railways carry the bulk of wheat and coal tonnage. Australia has about 40,000 km of railways, of which 25 per cent are found in New South Wales alone. The west-east Australian National Railway line runs across the country from Perth to Sydney. New Zealand's railways are mainly in the North Island to serve the farming areas. In South America, the rail network is the most dense in two regions, namely, the Pampas of Argentina and the coffee growing region of Brazil which together account for 40 per cent of South America's total route length. Only Chile, among the remaining countries has a considerable route length linking coastal centers with the mining sites in the interior. Peru, Bolivia, Ecuador, Colombia and Venezuela

have short single-track rail-lines from ports to the interior with no inter-connecting links. There is only one trans-continental rail route linking Buenos Aires (Argentina) with Valparaiso (Chile) across the Andes Mountains through the Uspallatta Pass located at a height of 3,900 m.

Q.1.Which continent has most extensive network of Railways?

North America

Q 2. Name the Railways route which runs from Perth to Sydney.

Australian National Railway

Q.3. What do you mean by Trans-Continental Railways?

Railway which runs in more than one continent

SHORT QUESTION ANSWER

1. Why has the container transport become more popular nowadays?
Answer:
Container transport has become very popular nowadays because:

- It provides door to door service.
- It has reduced transport and delivery time.
- The service is economical both to the railways and its customers.
- Safety and security of product.

2. Among all the personal communication systems internet is the most effective and advanced one." Do you agree with the statement?
Answer:
I agree with the statement because:

- It enables the users to establish direct contact.
- It is widely used in urban areas.
- It acts like a huge central warehouse of data and other information.
- It provides an efficient access to information at relatively low cost.
- It is increasingly used for e-commerce and many transactions.
- It is the most time efficient device.

3. Discuss the growth and role of TV and radio in mass communication.
Answer:

Radio: Radio broadcasting started in India in 1923 by the Radio Club of Bombay. Since then, it gained immense popularity and changed the social-cultural life of people. Government took mode of communication under its control in 1930 under the Indian Broadcasting System. It was changed to All India Radio in 1936 and to Akashwani in 1957 (TV).

Television: TV broadcasting has emerged as the most effective audio-visual medium for disseminating information and educating masses. Initially, the TV services were limited only to the national capital where it began in 1959. After 1972, several other centres became operational. In 1976, TV was delinked from all.

4.. What recent steps have been taken for development and modernization of Indian railways? Why is unification of gauges important? What role does railway network play in economic development of our country?

Answer: Recent development and modernization steps taken in Indian railways:

- Extensive programme to convert the metre and narrow gauge to broad gauge.
- The steam engines have been replaced by diesel and electric engines. .
- The new trains have increased speed.
- The environment of the stations has improved. There have been computerised reservations, automatic electronic signals, loading facilities, etc.

- Introduction of metro in Kolkata and Delhi have set an example for other states also.
- Railway routes have been extended to other areas such as Konkan railway between Mumbai and Mangalore.
- Improved passenger services on the trains include AC coaches, pantry services, bedding facilities, etc.

5.Explain the functions of Oil India Limited (OIL).

Answer:Oil India Limited (OIL) operates under the administrative set up of the Ministry of Petroleum and Natural Gas. It is engaged in the exploration, production and transportation of crude oil and natural gas. It was incorporated in 1959 as a company.

Functions:

- It constructed Asia's first cross country pipeline covering a distance of 1,157 km from Naharkatiya oilfield in Assam to Barauni refinery in Bihar.
- It was further extended up to Kanpur in 1966.
- It has also constructed another pipeline in the western region of India of which Ankleshwar-Koyali, Mumbai High- Koyali and Hazira-Vij aipur-Jagdishpur (HVJ) are most important.
- Recently, a 1256 km long pipeline connecting Salaya (Gujarat) with Mathura (U.P.) has been constructed.

6. Give a detailed account of the development of railways in India and highlight their importance.

Answer:Indian railways network is one of the longest in the world. It facilitates the movement of both freight and passengers and contributes to the growth of economy. Indian Railway was introduced in 1853, when a line was constructed from Bombay to Thane covering a distance of 34 km.

It is the largest government undertaking in the countiy. Its network length is 63,221 km. Its very large size puts lots of pressure on a centralized railway management system. Thus, in India, the railway system has been divided into sixteen zones. Indian Railways has launched extensive programme to convert the metre and narrow gauges to broad gauge. Moreover, steam engines have been replaced by diesel and electric engines. This step has increased the speed as well as the haulage capacity.

7. Explain the functions of Border Roads Organization.

Answer: The Border Roads Organization (BRO) was established in May, 1960.

Functions:

- It aimed at accelerating economic development and strengthening defence preparedness through rapid and coordinated improvement of strategically important roads along the northern and north-eastern boundary of the country.
- Border Road Organization has completed over 40,450 km of roads by March, 2005.
- Apart from the construction and maintenance of roads in strategically sensitive areas, the BRO also undertakes snow clearance in high altitude areas.

Long Answer Type question (5 Marks)

1.What is pipeline and why is it important?

Answer:Pipeline is the cheapest means of transport as only once the construction has to be done and it has low operational cost. It is important because:

- It is the most convenient and efficient mode of transporting liquids and gases over long distances.
- It solves the problems of loading and unloading of raw materials and finished goods.
- This ensures the uninterrupted supply of raw materials to the refineries and finished products to the consumers.
- It is ideally suited for transport of liquids and gases.
- It can be laid through difficult terrain and underwater also.
- It involves low energy consumption.
- It rules out transshipment losses.

2.Why is the density of rural roads very low in hilly, plateau and forested areas?

Answer: Due to the following factors, the density of rural roads is very low in hilly, plateau and forested areas.

- Technological difficulty in construction
- Low population density.

- Relatively lesser economic activity.
- Settlements are located far away from each other.
- Costs of construction are relatively higher.

3.Explain the primary and secondary inland waterways of India.

Answer:

India has 14,500 km of navigable waterways, contributing about 1% to the country's transportation. It comprises rivers, canals, backwaters, creeks, etc. At present, 3,700 km of major rivers are navigable by mechanised flat bottom vessels. For the development, maintenance and regulation of national waterways in the country, the Inland Waterways Authority was set up in 1986.

The authority has declared inland national waterways:

National Waterway 1: Allahabad-Haldia stretch (1,620 km): It is one of the most important waterways in India. It is navigable by mechanical boats up to Patna and by ordinary boats up to Haridwar. It is divided into three parts for developmental purposes:

- Haldia-Farakka (560 km)
- Farakka-Patna (460 km)
- Patna-Allahabad (600 km)

National Waterway 2: Sadiya-Dhubri stretch (891 km): The Brahmaputra is navigable by steamers up to Dibrugarh (1,384 km) which is shared by India and Bangladesh.

National Waterway 3: Kottapuram-Kollam stretch (205 km): It includes 168 km of west coast canal along with Champakarcanal (23 km) and Udyogmandal canal (14 km). Inland Waterways Authority has also identified ten other inland waterways, which could be upgraded. The backwaters (Kadal) of Kerala has special significance in Inland Waterway. It provides cheap means of transport and also attracts a large number of tourists in Kerala. The famous Nehru Trophy Boat Race (VALLAMKALI) is also held in the backwaters.

National Waterway 4: specified stretches of Godavari and Krishna rivers alongwith Kakinada, Puducherry stretch of canals (1078 km).

National Watery-5: Specified streches of Brahmani along with Matai river, delta channels of Mahanadi & Brahmani rivers and East Coast Canals (588 km).

4. Explain the factors affecting Indian Railways.

Answer:

The pattern of Indian railway network has been influenced by geographical, economic and political factors.

Geographical Factors: The North Indian plain with its leveled land, high density of population and rich agriculture presents the most favourable conditions for the development of railways. However, the presence of a large number of rivers makes it necessary to construct bridges which involve heavy expenditure.

- There are practically no railways in the flood plains of many rivers in Bihar and Assam. The plateau region of south India is not as much suitable for railways as the North Plain area. The Himalayan region in the north is almost entirely devoid of railways due to its rugged topography.
- Some railway terminals such as Jammu Tawi, Kotdwar, Dehradun, Kathgodam, etc. are found on the foothills. Some narrow gauge railway tracks are found in the Himalayan region. A railway link between Jammu and Kashmir valley is being planned at a veiy high cost. The sandy areas of Rajasthan are also not much favourable for railways.
- There was no railway line between Jodhpur and Jaisalmer till 1966. Similarly, forested areas of Madhya Pradesh and Odisha, deltaic swamps of West Bengal, marshy areas of Rann of Kachchh and hilly tract of Sahyadri are also unfavourable for the development of railways. Sahyadri can only be crossed through gaps like Thalghat, Bhorghat and Palghat to reach coastal trail heads like Mumbai, Vasco-de-Gama, Mangalore and Kochi. Obviously, the railways tend to follow the path of least resistance.

Economic Factors: Railways develop more in the economically advanced areas where the need for railway network is felt more. Conversely, railways bring about economic prosperity to the areas through which they pass. This is because of the economic linkages that we find the highest density of railways near big urban and industrial centres and in areas which are rich in mineral and agricultural resources.

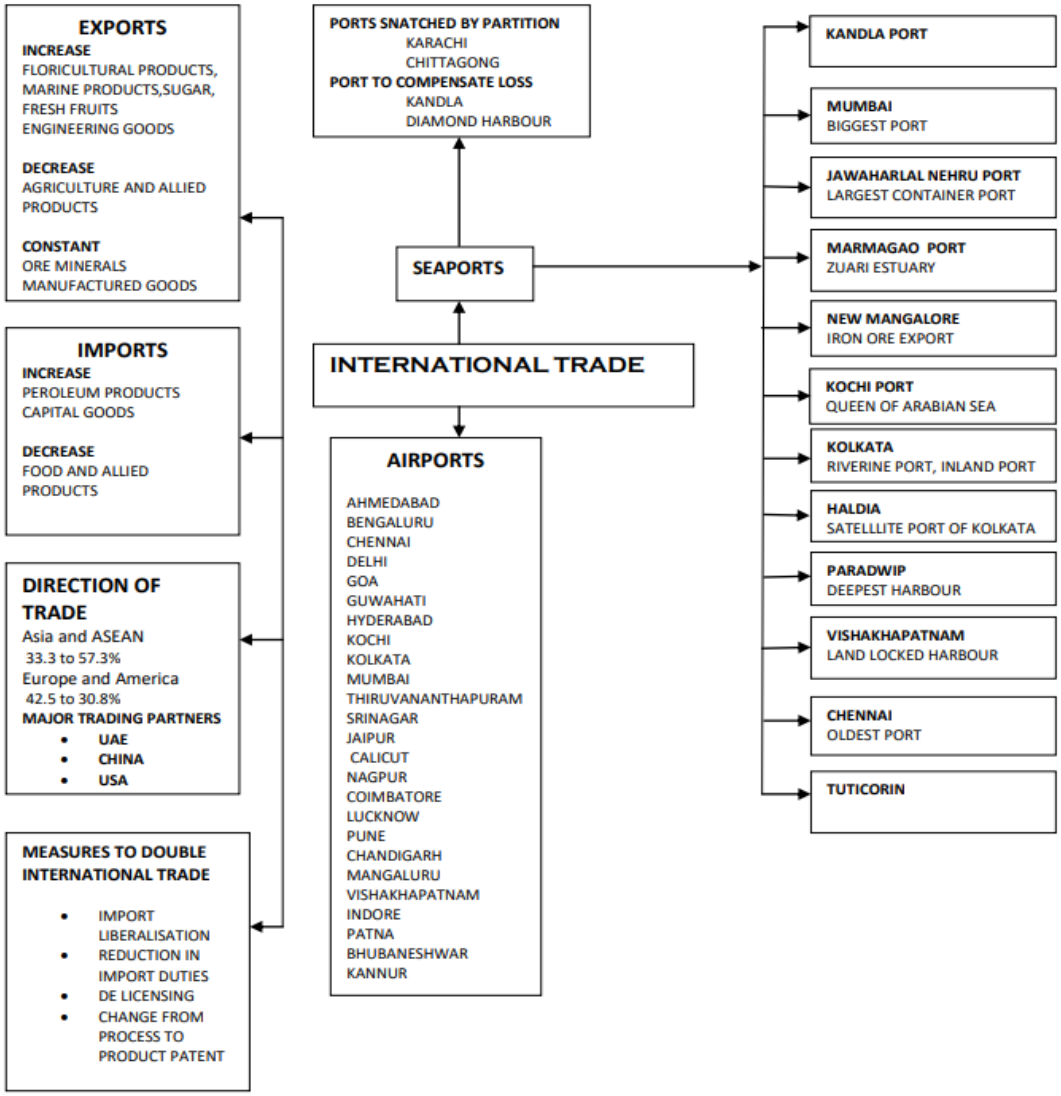
Political and Administrative Factors: The present railway system in India is the legacy of the British rule. The British administration planned the direction and pattern of the railway lines in such a way that they could exploit the valuable raw materials of India for the benefit of their industries and flood the Indian markets with the finished goods from Britain.

- Besides, the Britishers wanted to maintain their military supremacy, for which quick movement of troops and arms was necessary and construction of railways became unavoidable.

CHAPTER 8 – INTERNATIONAL TRADE

Main Points of the Chapter

CONCEPT MAP



GIST OF THE LESSON

- India's contribution to world trade-less than 1%

Changing pattern of India's international trade

- 1950-51-external trade worth-1214 crore
- 2016-17-external worth-4429762 crore

Reasons for increase in trade

1. Better performance by manufacturing sector
2. Liberal policies of the government
3. Diversification of market

Import value more than export value- so trade deficit

Reason- price rise of crude petroleum

Changing pattern of the composition of India's export

1.Share of agriculture and allied products[coffee, tea, pulses and spices] has declined [**tough international competition**]

2.Share of petroleum and crude products have increased [**1. Rise in petroleum prices2. Increase in India's refining capacity**]

3. Shares of ore minerals and manufactured goods have largely remained constant over the years
4. Increase registered in floricultural products, fresh fruits, marine products, sugar
5. Manufacturing sector alone accounted for 73.6% of India's total value of export in 2016-17
6. Engineering goods have shown a significant growth

7. Textile sector could not achieve much in spite of liberal measures taken by government [**competition from china, east Asian countries]**

8. Gems and jewellery contributes a larger share of India's foreign trade.

Changing pattern of the composition of India's import

1. During 1950's and 60's major item of import was food grains, capital goods, machinery and equipment
2. After 1970's import of food grain discontinued[success of green revolution] and was replaced by fertilizers and petroleum
3. Major imports- machine and equipment, special steel, edible oil, chemicals.
4. Steep rise in import of petroleum products [**1. Rising industrialization 2. Better standard of living 3. Price rise in international market]**
5. Import of capital goods maintained a steady increase [non electric machinery, transport equipment, manufacturers of metals and machine tools]
6. Other major items of India's import-pearls, semi-precious stones, gold, silver, metalliferous ores, metal scarp, non-ferrous metals, electronic goods

Direction of trade

India has trade relations with most of the countries and trading blocs

Aims to double its share in international trade in next 5 years-measures taken

1. Import liberalization
2. Reduction in import duties
3. Delicensing
4. Change from process to product patent

* Most of the trade by sea and air routes.
* Small portion of trade by land route[Nepal, Bhutan, Bangladesh, Pakistan]

Sea ports

- 12 major ports[handle 71% of oceanic traffic]-central government
- 185 minor ports- state government
- West coast has more sea ports
- Partition snatched away 2 ports

1. Karachi port[Pakistan] compensated- Kandla[Gujarat]
2. Chittagong port[Bangladesh]-compensated by diamond harbor[west Bengal]

Major sea ports:-

West coast

1. Kandla [Gujarat]

∗ Reduce pressure at Mumbai
∗ Designed to receive petroleum and petroleum products,
∗ Offshore terminal at Vadinar to reduce pressure

2. Mumbai [Maharashtra]

∗ Biggest port
∗ Largest oil terminal

3. Jawaharlal Nehru port [Maharashtra]

∗ Satellite port for Mumbai
∗ Largest container port in India

4. Marmagoa [Goa]

∗ Situated at Zuari estuary
∗ Iron ore export to Japan

5. New Mangalore [Karnataka]

∗ Export of iron ore, iron concentrate

6. Kochi [Kerala]

∗ Situated at head of Vembanad kayal
∗ Queen of Arabian sea

East coast

7. Kolkata [West Bengal

***** Located on Hugli river [128km inland]
∗Problem of silt accumulation in Hugli river
∗Port facility for land locked countries of Nepal and Bhutan

8. Haldia [West Bengal]

∗ Reduce congestion at Kolkata

9. Paradwip [Orissa]

∗ Deepest harbour ∗ Suitable to handle very large vessels

∗ Export iron ore

10. Vishakhapatnam [Andhra Pradesh]

∗ Land locked harbour ∗ Connected to sea by a channel

11. Chennai [Tamil Nadu]

∗ Oldest port ∗ Shallow waters-not suitable for large vessels

12. Tuticorin[Tamil Nadu]

∗ Relieve Chennai's pressure ∗ 25 km north of Chennai

Ennore[Tamil Nadu] ∗ Relieve Chennai's pressure

Airports: 25- International airports.

1. Ahmedabad	8. Kolkata	13. Calicut	20. Mangaluru
2. Bangalore	9. Mumbai	14. Nagpur	21. Vishakhapatnam
3. Chennai	10. Thiruvananthapuram	15. Coimbatore	22. Indore
4. Delhi	11. Srinagar	16. Cochin	23. Patna
5. Goa	12. Jaipur	17. Lucknow	24. Bhubaneshwar
6. Guwahati		18. Pune	25. Kannur
7. Hyderabad		19. Chandigarh	

MCQs (1 Marks)

1. India is a major importer of

[A]. Precious gems [C]. Electrical

[B]. Crude petroleum [D]. Machinery

Answer: B

2. India is a major exporter of

[A]. Petroleum products [C]. Bio-chemicals

[B]. Jewellery [D]. Cereals

Answer: A

3. Tuticorin port is at _____ coast of India?

[A]. South east coast [C]. Western coast

[B]. South west coast [D]. Eastern coast

Answer: D

4. Which goods are generally traded via Air means?

[A] High Value goods [C] Time and temperature sensitive products

[B] Perishable goods [D] All of the above

Answer: [D] All of the above

5. Which port is also known as 'Queen of Arabian Sea'?

[A] Karwar port [C] Kochchi port

[B] Mora port [D] None of the above

Answer: [C] Kochchi port

6. How many major ports are there in India?

[A]. 12 [B]. 11 [C]. 13 [D]. 10

Answer: A

7. Which is the largest container port of India?

[A]. Jawaharlal Nehru Port [C]. Cochin

[B]. Kandla [D]. Mormugao

Answer: A

8. Which port caters to the export of iron-ore products?

[A]. New Mangalore port [C]. Cochin

[B]. Paradwip [D]. Kandla

Answer: A

9. Which country is the largest trading partner of India?

[A] Pakistan [C] United States of America
[B] United Arab Emirates [D] China
Answer: [C] United States of America

10. What was the reason for the decline of import of foodgrains?
[A] Green revolution [C] Hike in import duty
[B] Decline in population [D] Self reliance in primary sector
Answer: [D] Self reliance in primary sector

11. Which of the following is not a major trading partner of India
A South Africa B U. S. A . C U. A. E. D China
Answer: A

12. Diamond harbor is on the river
A Mahanadi B Damodar C Hugli D Subernrekha
Answer: C

13. Offshore terminal at Vadinar belongs to
A Marmagao B Kandla C Haldia D Kochi
Answer: B

14. Deepest harbor for large vessels is
A Paradwip B Vishakhapatnam C J L Nehru D Tuticorin
Answer: A

15. Silt accumulation is problem of this port
A Marmagao B Kandla C Haldia D Kolkata
Answer: D

16. Port on Zuary estuary
A Marmagao B Kandla C Haldia D Kochi
Answer: A

17. Artificial harbor of India
A Kandla B Kochi C Chennai D Haldia
Answer: C

Short Answer Type Questions (3 Marks)

Question 1. Why is international trade necessary?
Answer: International trade is beneficial as no country is self sufficient. It bridges the gap between surplus regions and deficit regions through export and imports. Countries need to trade to obtain commodities, they cannot produce themselves or they can purchase elsewhere at a lower price. It helps countries in maintaining the specialisation in the production of goods and services. It increases international cooperation and understanding. In early times it played significant role in the cultural diffusion.

Question 2. Explain the causes behind increase in foreign trade in India.
Answer: There are numerous reasons for this sharp increase in foreign trade: The momentum picked up by the manufacturing sectors, The liberal policies of the government, The diversification of markets.

Question 3. What factors are responsible for change in nature of international trade?
Answer: Many changes have taken place in foreign trade of India over time. There has been an increase in the total volume of import & export, but the value of import remained higher. The share of agriculture and allied products has declined while that of petroleum has increased. The increase in deficit is attributed to the price rise of crude petroleum which forms a major component of India's import list.

Question 4. What steps have been taken by India to increase its share in international trade?
Answer: India aims to double its share in the international trade within the next five years. India has started adopting suitable measures such as import liberalization, reduction in import duties, de-licensing and change from process to product patents for attaining these goals.

Question 5. What steps have been taken for modernization of Indian ports?
Answer: Today Indian ports are handling large volumes of domestic as well as overseas trade. Most of the ports are equipped with modern infrastructure. Previously the development and modernization was the responsibility of the government agencies, but considering the increase in function and need to bring these ports at par with the international ports, private entrepreneurs have been invited for the

modernization of ports in India.

Question 6. Explain the hinterland of Kolkata port.

Answer: Hinterland is the influence area which is closely connected to the port with roads and railways. The products of this area are sent to the port for export and imported material is distributed here for sale and consumption.

Kolkata port is also confronted with the problem of silt accumulation in the Hugli river which provides a link to the sea. Its hinterland covers U.P., Bihar, Jharkhand, West Bengal, Sikkim and the north-eastern states. Apart from this, it also extends ports facilities to our neighbouring land-locked countries such as Nepal and Bhutan.

Question 7. Explain the features of Kandla Port.

Answer: Features of Kandla Port:

Objective: Kandla Port situated at the head of Gulf of Kuchchh has been developed as a major port to cater to the needs of western and north western parts of the country and also to reduce the pressure at Mumbai port.

Goods Handled: The port is specially designed to receive large quantities of petroleum and petroleum products and fertiliser. The offshore terminal at Vadinar has been developed to reduce the pressure at Kandla port.

Hinterland: Demarcation of the boundary of the hinterland would be difficult as it is not fixed over space. In most of the cases, hinterland of one port may overlap with that of the other. Covers the western 8s north western states.

Long Answer Type Questions (5 marks)

Question 1. India's international trade has undergone a sea-change in recent years. Discuss.

Answer: India has trade relations with all the major trading blocks and all geographical regions of the world. Among the commodities of export, whose share is significant over the last few years till 2010¬11, are agriculture and allied products (10 per cent), ores and minerals (4 per cent), gems and jewellery, chemical and allied products, manufactured goods (12 per cent) and petroleum products (17 per cent). The commodities imported to India include petroleum & coal petroleum products (31 per cent), pearls, precious stones (10 per cent), inorganic chemicals (5.2 per cent), machinery (12.56 per cent). Fertilisers cereals, edible oils and newsprint on other imports. International trade has undergone a sea change in the last fifteen years. Exchange of commodities and goods have been superseded by the exchange of information and knowledge. India has emerged as a software giant at the international level. It is earning large foreign exchange through the export of information technology. .

Question 2. Describe the changes in composition of India's exports.

Answer:. Composition of export of India:

The percentage share of the agriculture and allied products have declined. There is a decline in the exports of traditional items such as coffee, spices, tea, pulses, etc.

The share of petroleum and crude products have increased due to rise in petroleum prices and increase in India's refining capacity.

The share of ore & minerals and have largely remained constant over the years from 1997- 98 to 2003-04.

Manufacturing goods are the largest exporting commodities in the year 2003¬04 (75.96%). The percentage share of other commodities has increased due to an increase in fruits, marine products and sugar.

Engineering goods are the largest commodities on the export list. Crude and petroleum products also occupy a significant place in the list.

Textile sector could not achieve much inspite of liberal measures taken by government due to competition from China and other Asian countries.

Question 3. Describe the changes in composition of India's imports.

Answer: Composition of India's imports:

During 1950-60s the major items of imports were food grain because India at that time faced food crisis.

After 1970s import of food grains stop due to Green Revolution.

Food grains were replaced by fertilisers and petroleum.

Petroleum is the largest imported commodity because it is used as a fuel as well as industrial raw

material.

The capital goods like non-electrical machinery, transport equipment, machines and tools have increased on the import list.

Special steel alloy, edible oils are also imported.

The other major items of import include pulse, precious gold and silver, metal ores, scraps, electronic goods, etc.

Question 4. What are the advantages of sea port? Why are they termed as gateways of International trade?

Answer: India is surrounded by sea from three sides and is bestowed with a long coastline.

Water provides a smooth surface for very cheap transport provided there is no turbulence.

India has a long traditional of sea-faring and developed many ports with place name suffixed with pattan which mean port. Since waterways is the cheapest means of transport for heavy and bulky goods and it is more favoured for international trading.

India's west coast has more seaports than its east coast.

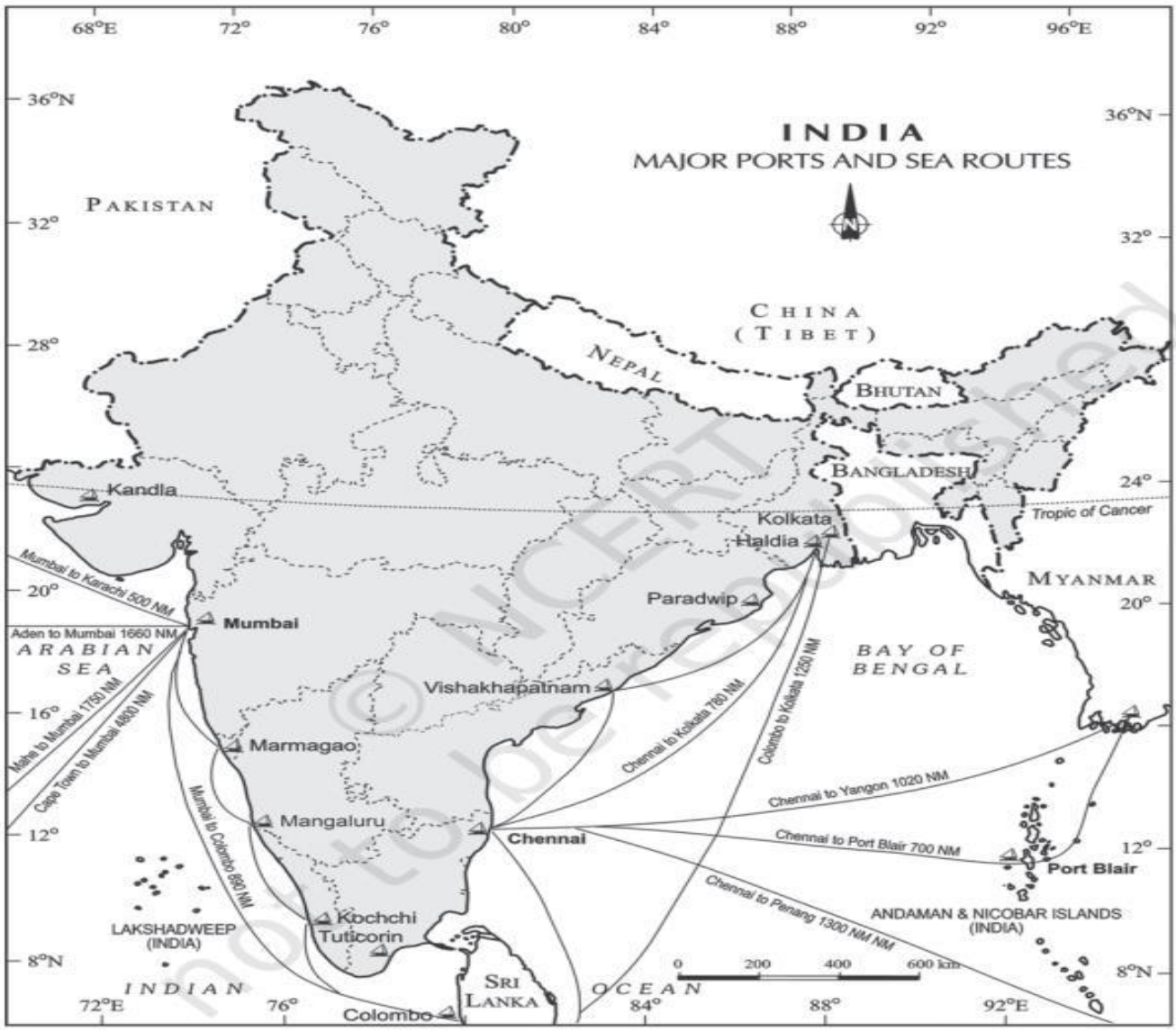
Availability of indented coastline.

Early arrivals of British to promote their trade.

British encouragement to establish and promote ports along the west coast to strengthen connectivity to Europe.

Opening of suez canal also promotes an encouraged seaports along the west coast.

Source Based Question



Q. Name the major seaport of Andaman and Nicobar islands.

Answer: Port Blair

Q. Name a port of Maharashtra and a port of Tamil Nadu which have been constructed to reduce the pressure on the existing major ports.

Answer: Jawaharlal Nehru Port Ennore/Tuticorin

Q. Name two states which have two major ports

Answer: Maharashtra , Tamil Nadu , West Bengal

MAP WORK

1. **Major Sea Ports:**
   - Kandla-Gujarat
   - Marmagao- Goa
   - Kochi- Kerala
   - Tuticorin- Tamil Nadu
   - Chennai-Tamil Nadu
   - Paradwip- Odisha
   - Haldia- West Bengal
   - Mumbai- Maharashtra
   - Vishakhapatnam- Andhra Pradesh
   - Mangalore- Karnataka

2. **International Air ports:**

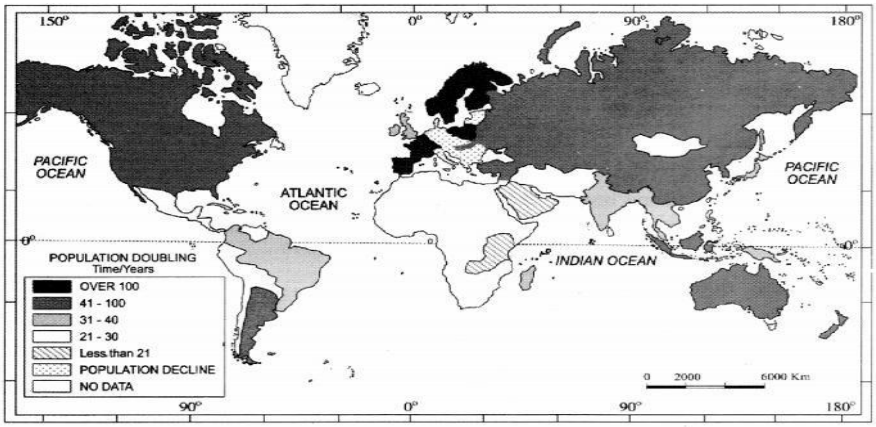
- Ahmedabad- Gujarat
- Mumbai- Maharashtra
- Bangalore- Karnataka
- Chennai- Tamil Nadu
- Kolkata- West Bengal
- Guwahati- Assam
- Delhi- Delhi
- Amritsar- Punjab
- Thiruvananthapuram- Kerala
- Hyderabad- Telangana


INDIA
Political
Amritsar
Delhi
Guwahati
Ahmedabad
Kolkata
Mumbai
Hyderabad
Bangalore
Chennai
Thiruvananthapuram
MAJOR AIRPORTS

XII-GEOGRAPHY[029]

Question 1. **PART-A MAP QUESTIONS & ANSWERS [EXPECTED]**

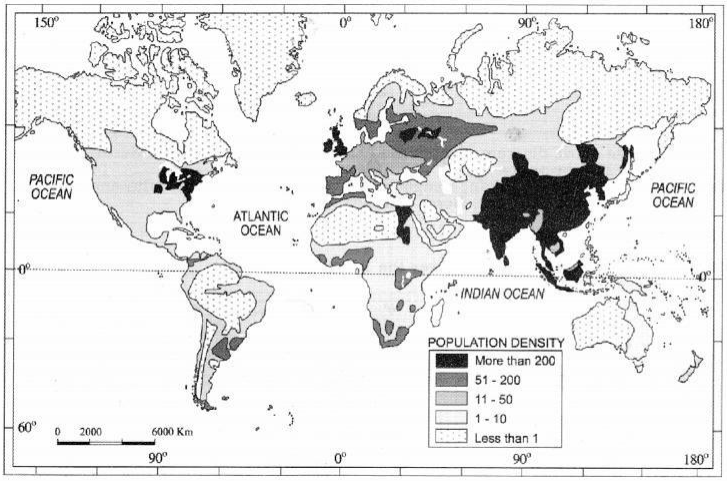
Study the given map and answer the following questions:



(i) Name the nations that take a very long time to double their population? Why?
(ii) Which are the nations taking about 31 to 40 years to double their population? Why?
Answer:

- Developed nations like Russia, Ukraine, Germany, Spain, etc. took a very long time to double their population because of low birth rates and much older populations.
- Developing nations like Brazil, India, etc. because of high birth rates and high youth population.

Question 2.
Study the given map and answer the following questions:



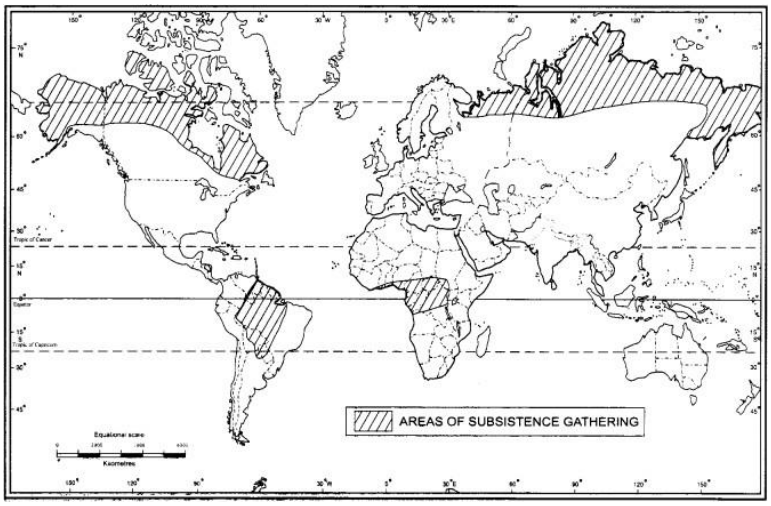
(i) Name the nations having high density of population in Asia.
(ii) Name the nations having less than one person of population density.
(iii) Give appropriate reasons for the above two questions.

Answer:
(i) South, South-East and East Asia nations.
(ii) Chile, Brazil, Afghanisatan, etc.
(iii) (a) These nations have high density of population because of the geographical, economic, social and cultural factors.
(b) Because of the unfavourable factors like hot and cold deserts and also have high rainfall

Question 1.

Identify the areas on the political map of the world where subsistence gathering arepractised.

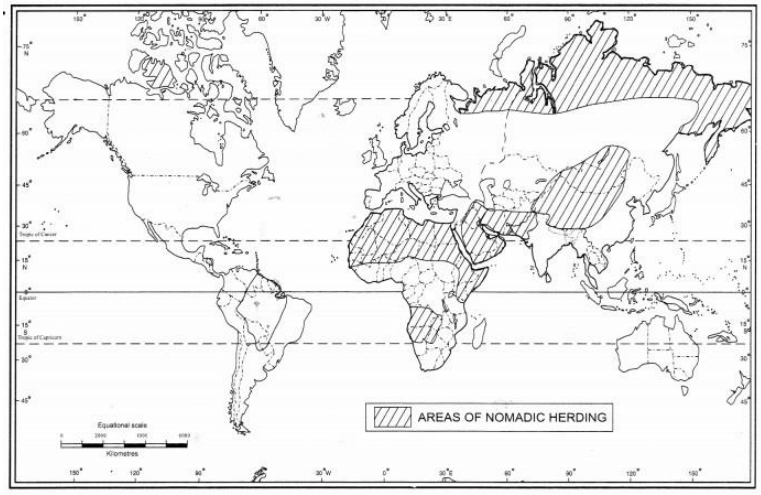
Answer:



Question 2.

Identify the areas on the political map of the world where nomadic herding arepractised.

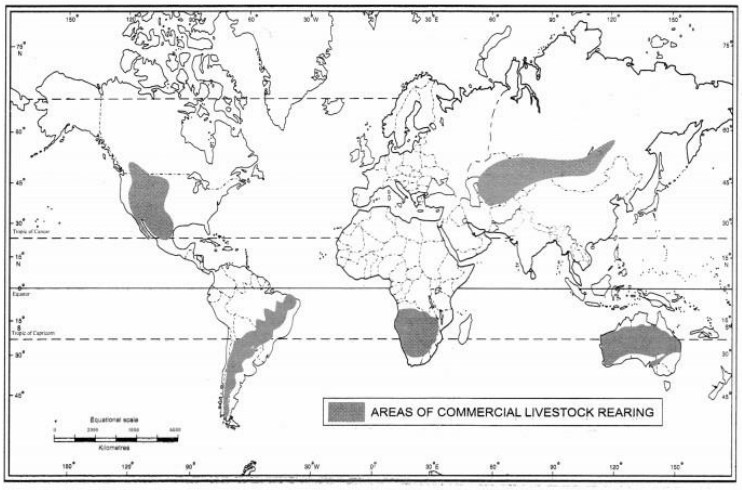
Answer:



Question 3.

Identify the areas on the political map of the world where commercial livestock rearingare practised.

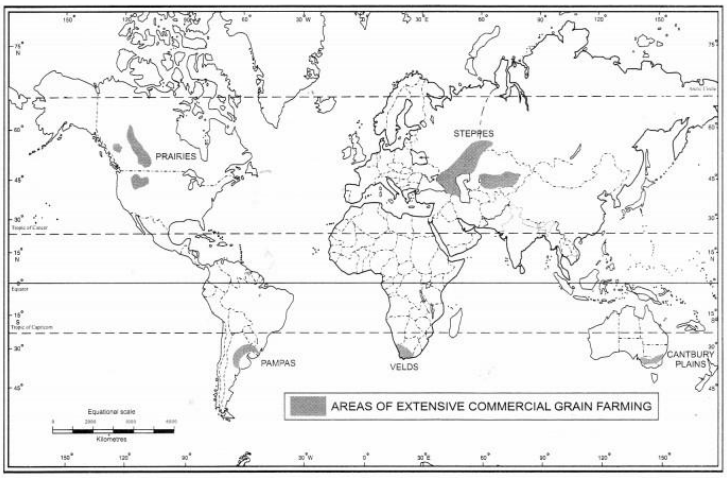
Answer:



Question 4.

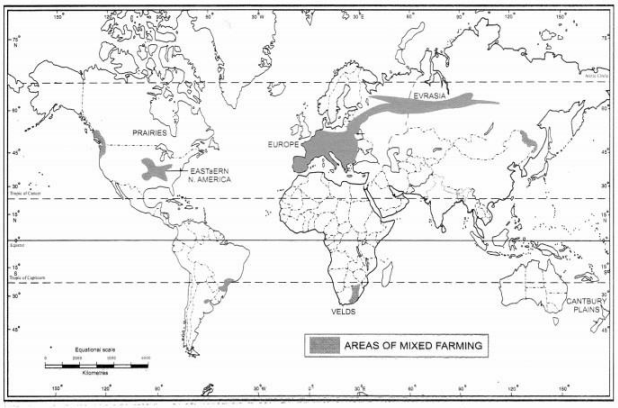
Identify the areas on the political map of the world where extensive commercial grainfarming are practised.

Answer:



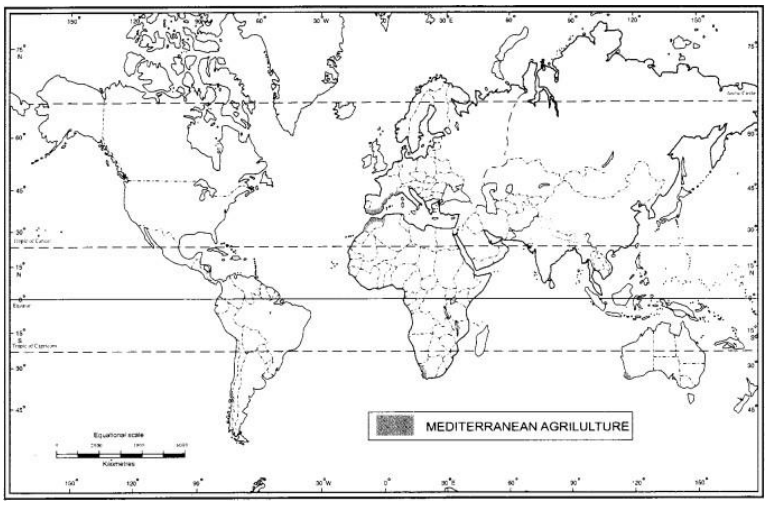
Question 5.
Identify the areas on the political map of the world where mixed farming are practised.

Answer:



Question 6.
Identify the areas on the political map of the world where mediterranean agriculture arepractised.

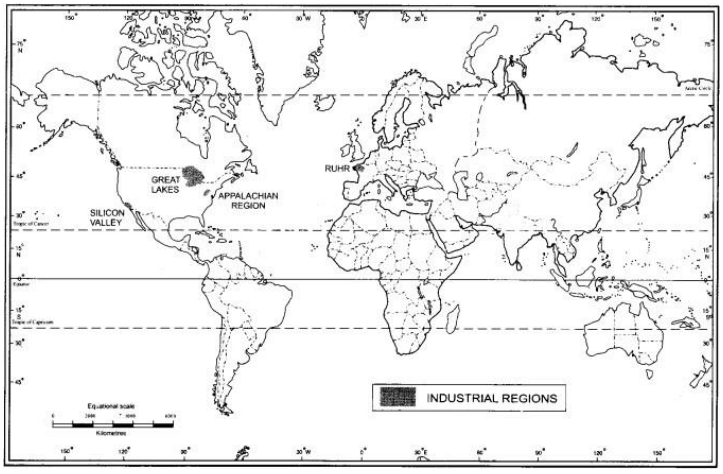
Answer:



Question 1.

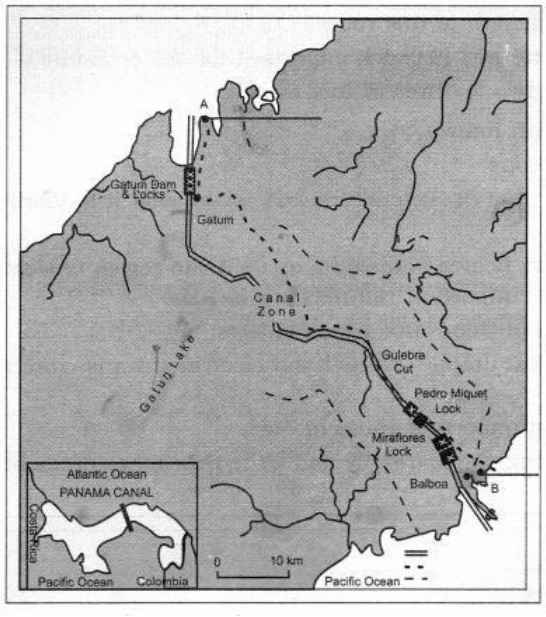
Identify the industrial regions on the political map of the world.

Answer:



Question 1.

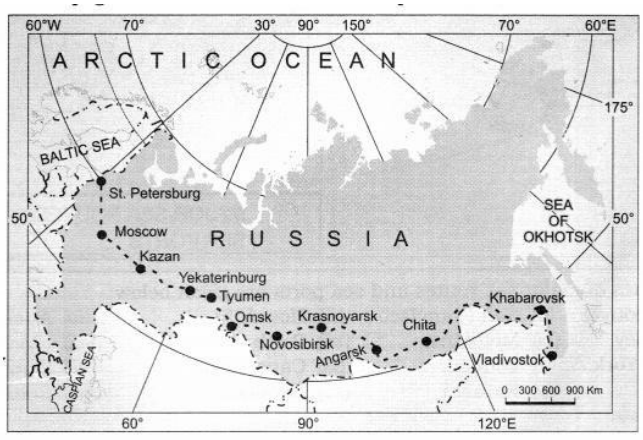
Study the following map carefully and answer the questions given below:



(b) Name the points A and B.
(c) What is the length of this route?
Answer:
(a) Panama Canal
(b) Point A is Colon and point B is Panama.
(c) 72 km

Question 2.

Study the map given below and answer the questions that follow:



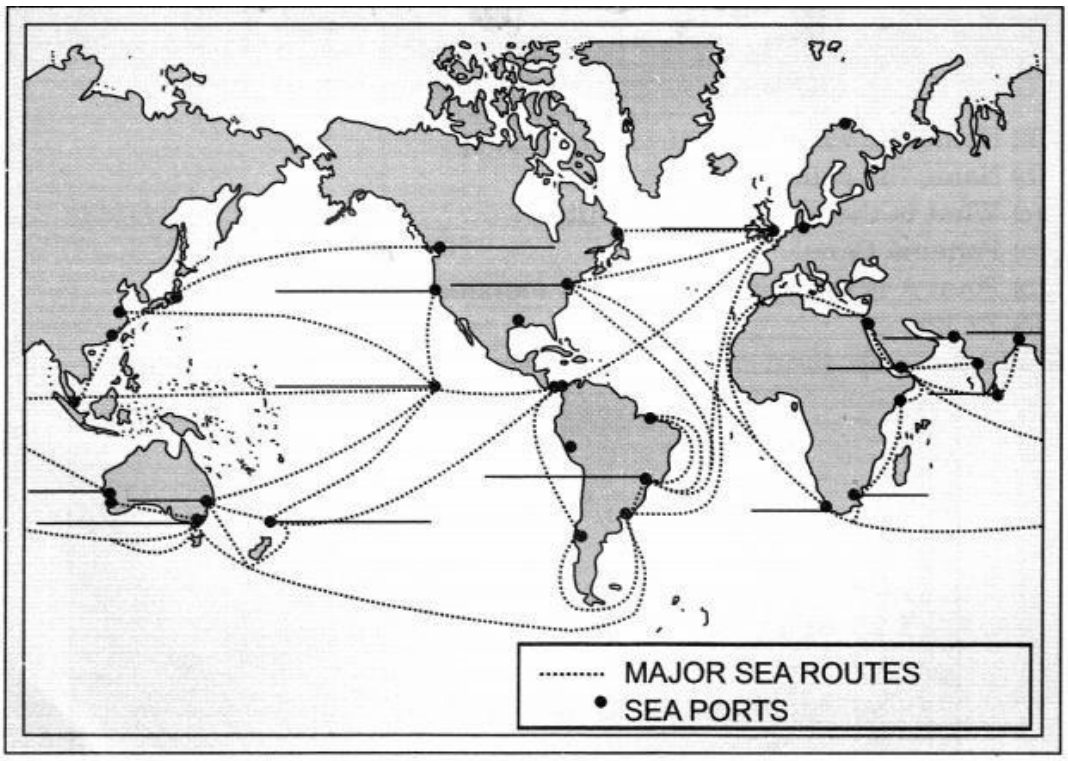
(a) Name the transport route shown in the map.
(b) Name the continents connected with this route.
(c) Name the extreme points of this route.
(d) What is the length of this route?
(e) How is this railway network important for the economy?
(f) Explain any two features of this route.

Answer:
(a) Trans-Siberian Railway
(b) Asia and Europe
(c) In the West, it is St. Petersburg and in the east it is Vladivostok
(d) 9332 km
(e) This route has helped in opening up its Asian region to west European markets. It isthe most important rail network in Asia.
(f) Two features of this route are as follows:

- It is the longest double-tracked and electrified trans-continental railway in theworld.
- It is the most important route in Asia.

Question 3.

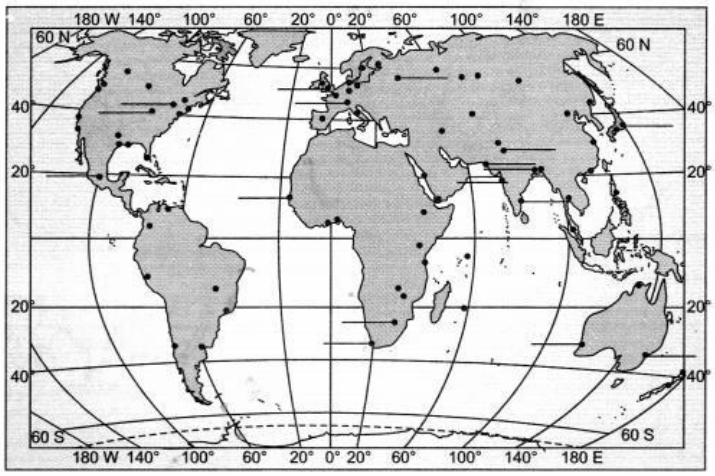
Study the following map carefully and write the names of major sea routes and seaports.



Answer:
The names of major sea routes and sea ports are given below:
(i) Vancouver (ii) San Francisco (iii) Honolulu (iv) Auckland (v) Sydney
(vi) Melbourne (vii) Perth (viii) Rio De Janeiro (ix) New York (x) London
(xi) Cape Town (xii) Durban (xiii) Aden (xiv) Karachi (xv) Mumbai
(xvi) Columbo (xvii) Kolkata

Question 4.

Study the following map carefully and write the names of major airports.



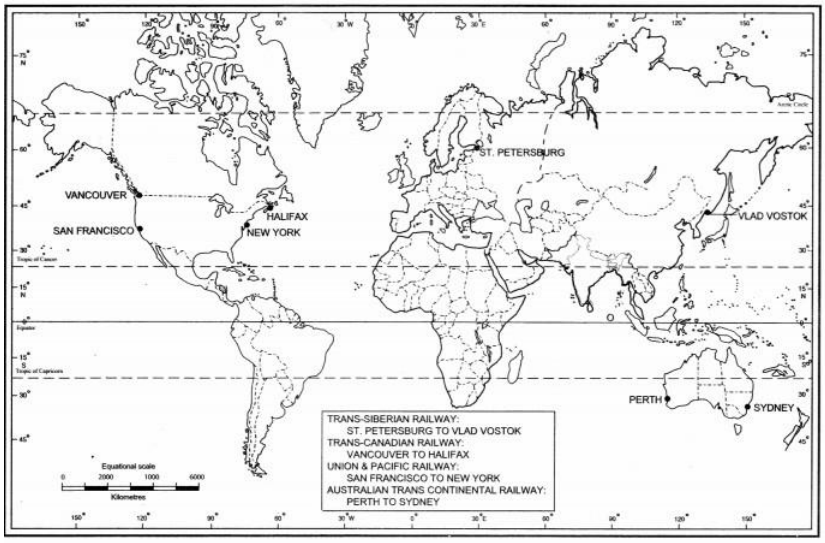
Answer:

The names cf major airports are given below:

(i) New Delhi (ii) Mumbai (iii) Chennai (iv) Kolkata (v) Karachi
(vi) Tokyo (vii) Perth (viii) Sydney (ix) Moscow (x) London
(xi) Paris (xii) Chicago (xiii) Toronto (xiv) Mexico (xv) Cape Town
(xvi) Dhaka (xvii) Kolkata

Question 5.

Identify the terminal stations of Trans-Continental railways on the political map of theworld.



Answer:

Question 6

Identify the major sea ports on the political map of the world

Question 7

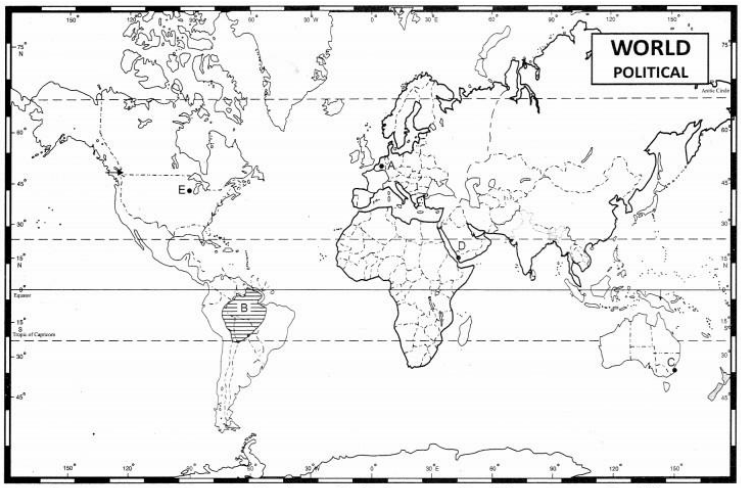
Identify the Airport on the political map of the world

Question 1

Identify the five geographical features shown on the given political outline map of the world as A, B, C, D and E and write their correct names on the lines marked near themwith the help of the following information. (Delhi 2017)

(A) A large country of Europe in area.
(B) An area of subsistence gathering.
(C) The terminal station of a ‘trans-continental railway’.
(D) A major sea port
(E) An international airport

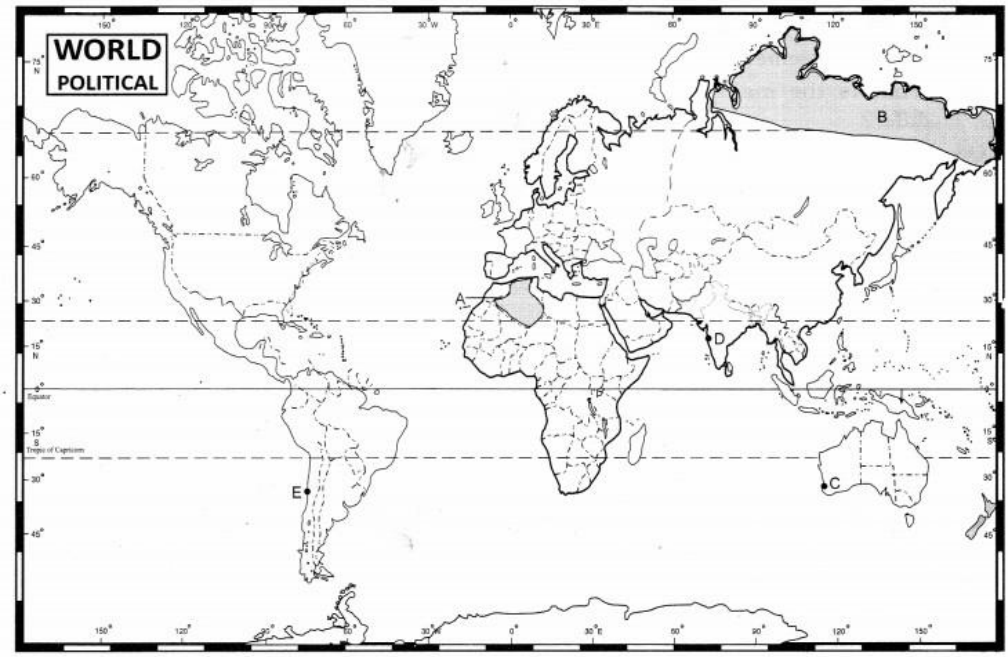
Question 2



A. France B. Amazon Basin C. Sydney D. Aden E. Chicago

Identify the five geographical features shown on the given political outline map of the World as A, B, C, D and E and write their correct names on the lines marked near themwith the help of the following information: (A.I. 2017)

(A) A large country of Africa in terms of area
(B) A major area of subsistence gathering.
(C) The terminal station of a Trans-Continental Railway.
(D) A major sea port
(E) An international airport.



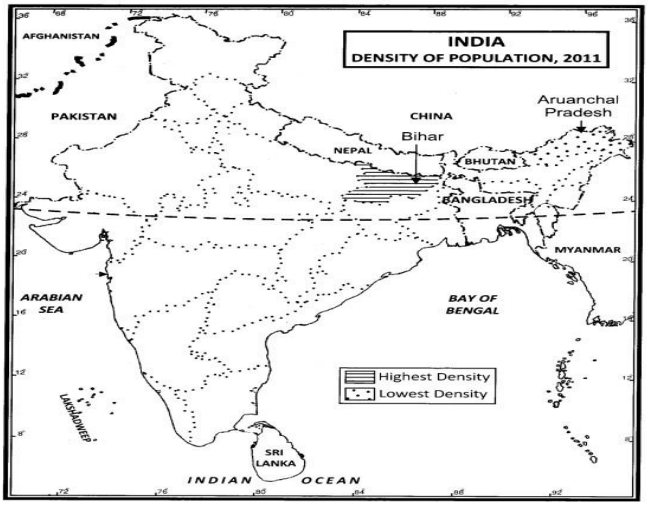
A. Algeria B. Northern Eurasia C. Perth D. Mumbai E. Santiago

XII-GEOGRAPHY[029]

PART-B MAP QUESTIONS & ANSWERS [EXPECTED]

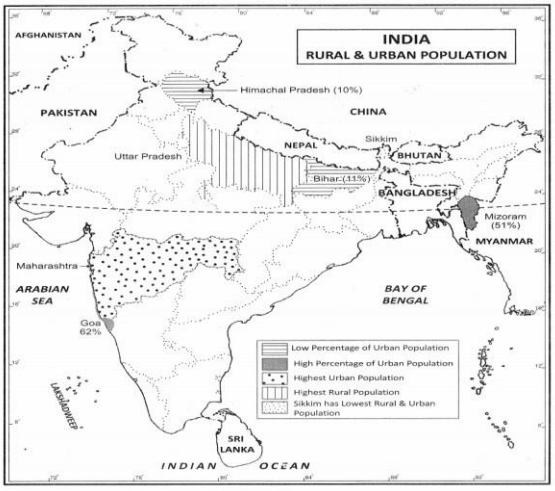
Question 1

Locate and label the following on the given political map of India with appropriate symbols.
(i) Highest density state (ii) Lowest density stateAnswer:
(i) Bihar (ii) Arunachal Pradesh



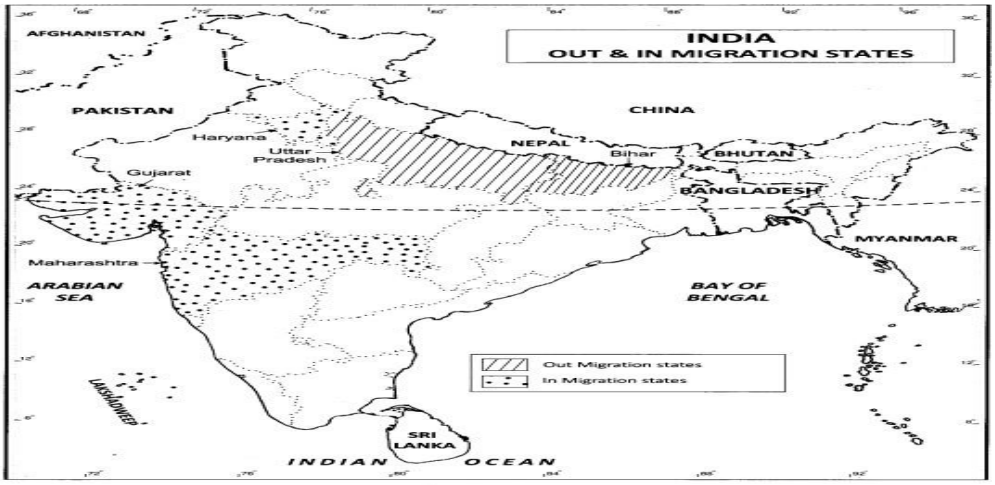
Question 2.

Locate and label the following on the given political map of India with appropriate symbols.
(i) State with low percentage of urban population.
(ii) State with high percentage of urban population.(in)
State with highest urban population.
(iv) State with highest rural population.
(v) State having lowest rural and urban population
Answer:
(i) Himachal Pradesh and Bihar (ii) Goa (iii) Maharashtra (iv) Uttar Pradesh (v) Sikkim



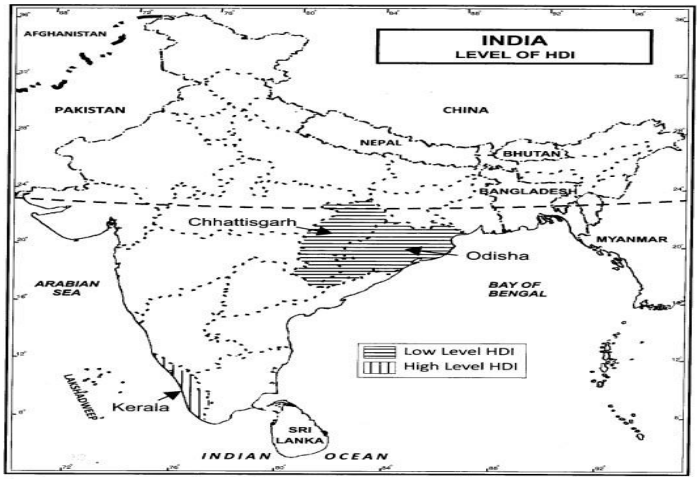
Question: 3

Locate and label the following on the given political map of with appropriate symbols.
(i) Out migration states (ii) In migration statesAnswer:
(i) Uttar Pradesh, Bihar (ii) Haryana, Gujarat, Maharashtra

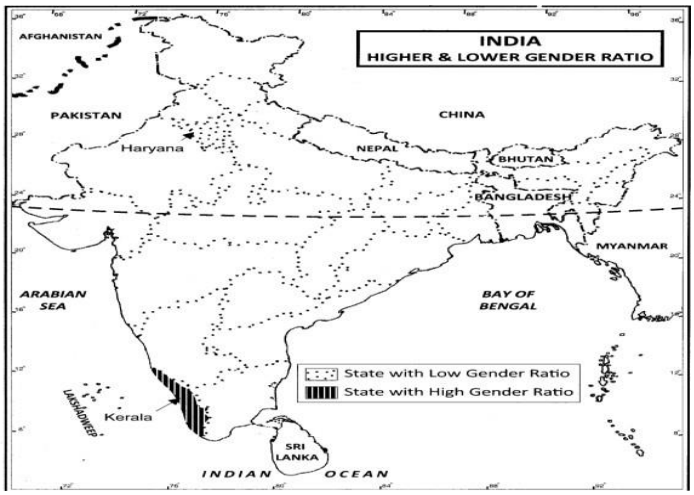


Question 1.

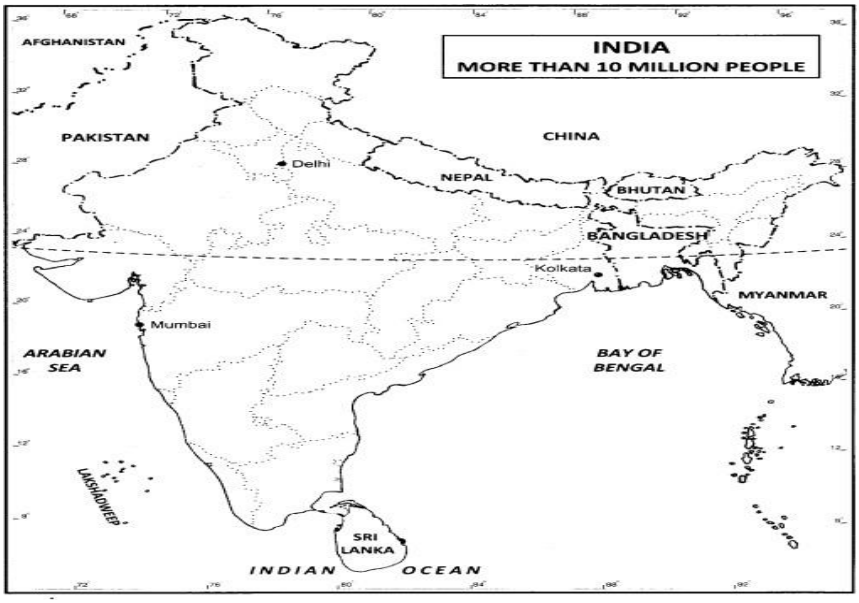
Locate and label the following on the given political map of India with appropriate symbols:
(i) State having low level H.D.I. (ii) State having high level H.D.I.
Answer:
(i) Chhattisgarh and Odisha (ii) Kerala



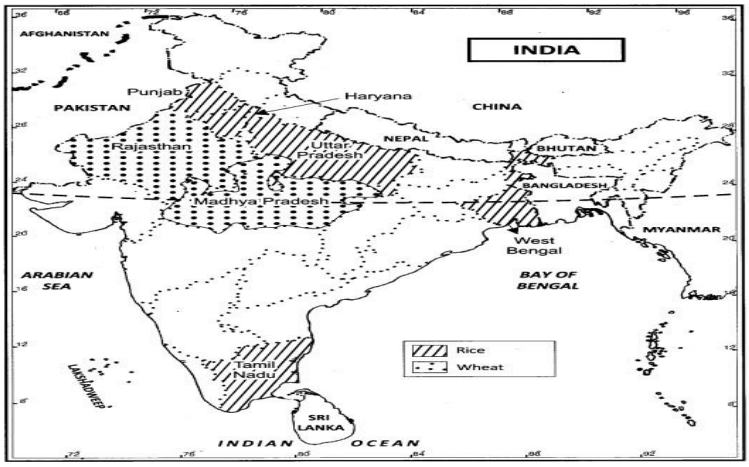
Question 2.
Locate and label the following on the given political map of India with appropriate symbols:
(i) State having low gender ratio. (ii) State having high gender ratio.
Answer:(i) Haryana (ii) Kerala



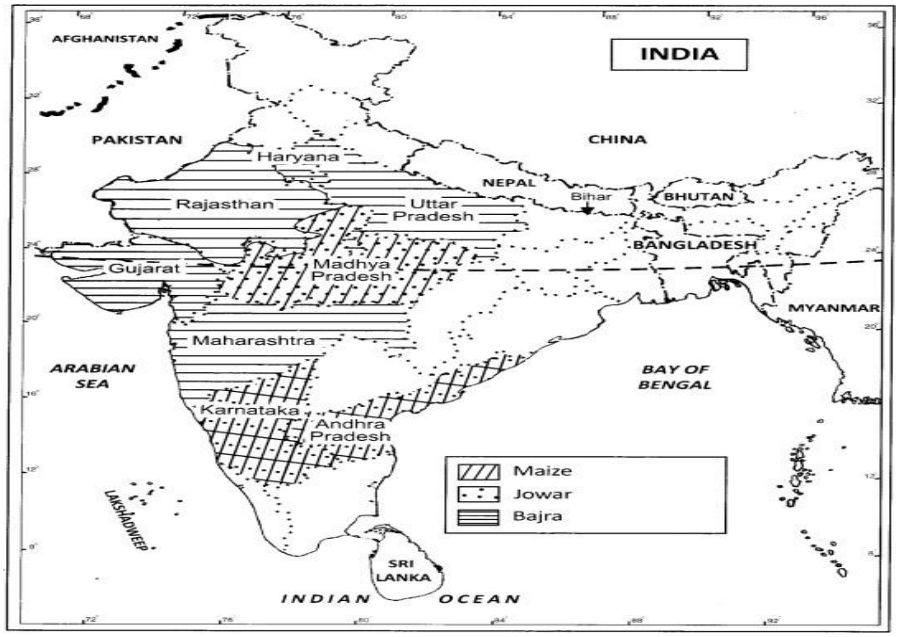
Locate and label the following on the political map of India with appropriate symbols:
Cities with more than 10 million population.
Answer:
Mumbai, Delhi, Kolkata



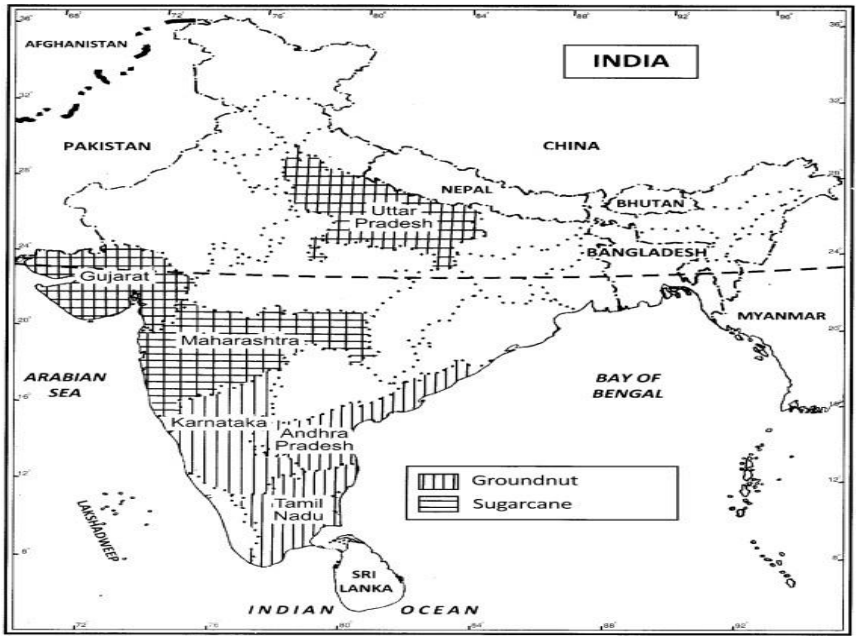
Question 1.
Locate and label the following on the political map of India with appropriate symbols.
(i) Rice producing states
(ii) Wheat producing states
Answer:
(i) West Bengal, Punjab, Uttar Pradesh, Haryana, Tamil nadu
(ii) Uttar Pradesh, Punjab, Haryana, Rajasthan and M.P.



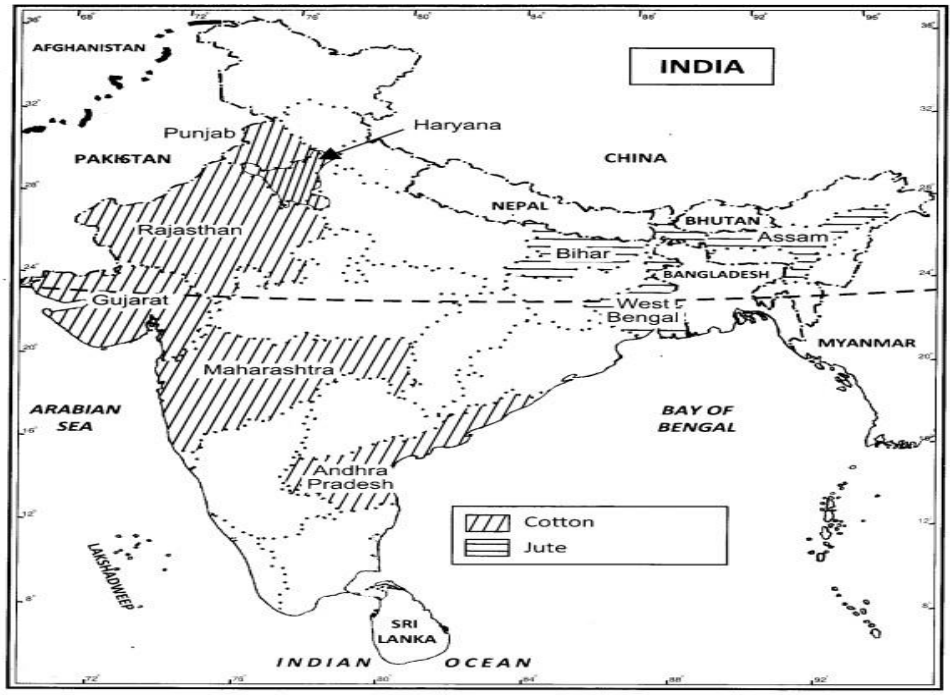
Question 2.
Locate and label the following on the political map of India with appropriate symbols.
(i) Major maize producing states (ii) Major jowar producing states
(iii) Major bajra producing
statesAnswer:
(i) M.P., A.P., Karnataka, Rajasthan and Uttar Pradesh
(ii) Maharashtra, Karnataka, M.P., A.P. (iii) Maharashtra, Gujarat, U.P., Rajasthan and Haryana



Question 3.
Locate and label the following on the political map of India with appropriate symbols,
(i) Leading producer of groundnut (ii) Leading producer of sugarcane
Answer:
(i) Gujarat, Tamil Nadu, Andhra Pradesh, Karnataka and Maharashtra
(ii) Uttar Pradesh, Maharashtra, Gujarat

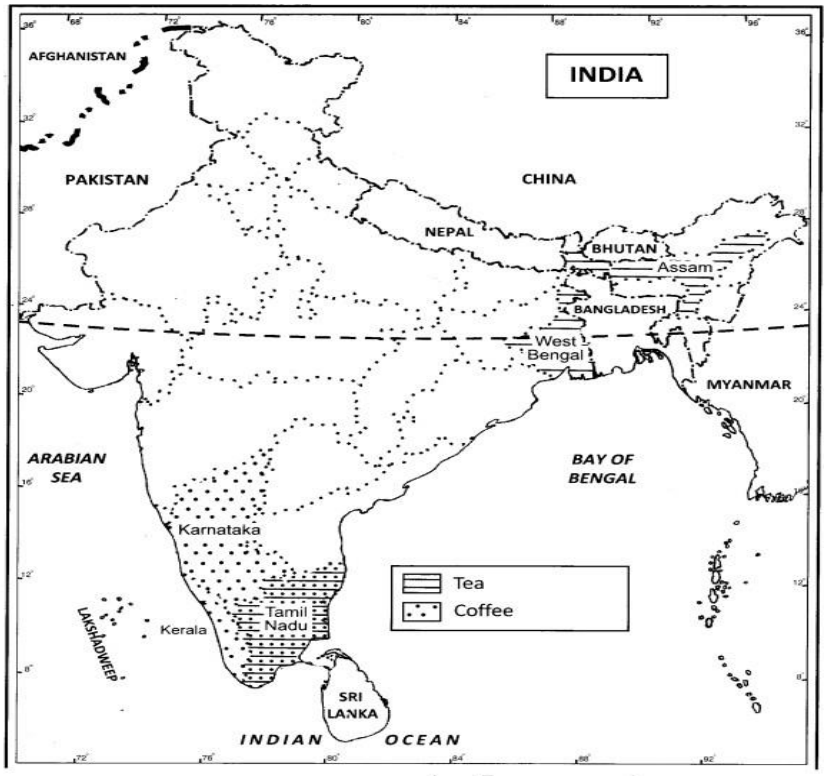


Question 4.
Locate and label the following on the political map of India with appropriate symbols.
(i) Leading cotton producing states (ii) Leading jute producing statesAnswer:
(i) Punjab, Haryana, Rajasthan, Gujarat, Maharashtra, Andhra Pradesh
(ii) West Bengal, Bihar, Assam

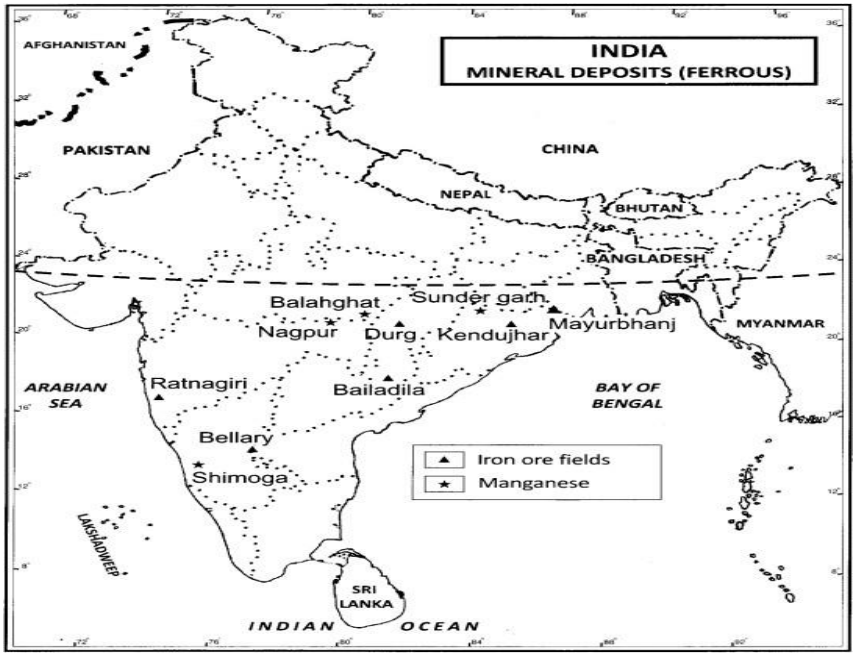


Question 5.
Locate and label the following on the political map of India with appropriate symbols.
(i) Tea producing states
(ii) Coffee producing states

Answer:
(i) Assam, West Bengal, Tamil Nadu
(ii) Karnataka, Kerala, Tamil Nadu

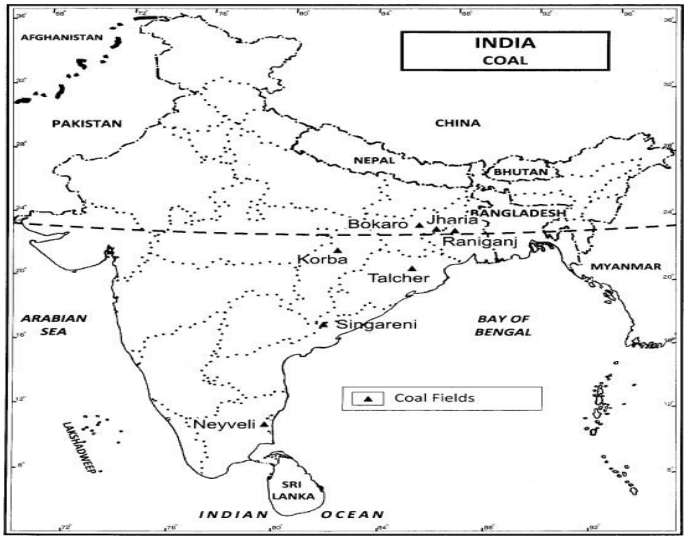


Question 1.
Label and locate the following on physical map of India.
Mineral Deposits (Ferrous) — Balaghat, Nagpur, Durg, Sundergarh, Kendujhar, Mayurbhanj, Ratnagiri, Bailadila, Bellary, Shimoga
Answer:



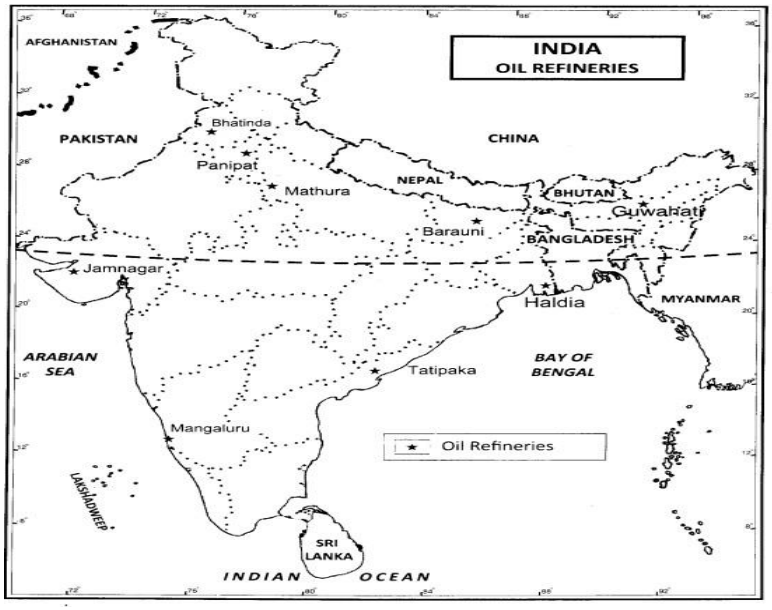
Question 2.
Label and locate the following on physical map of India.
Non-ferrous Minerals — Khetri, Udaipur, Katni, Amarkantak, Hazaribagh, Bilaspur, Singhbhum,Koraput.
Answer:

Question 3.
Label and locate the following on physical map of India.
Coal Producing States — Bokaro, Jharia, Korba, Singareni, Talcher, Neyveli, Raniganj
Answer:

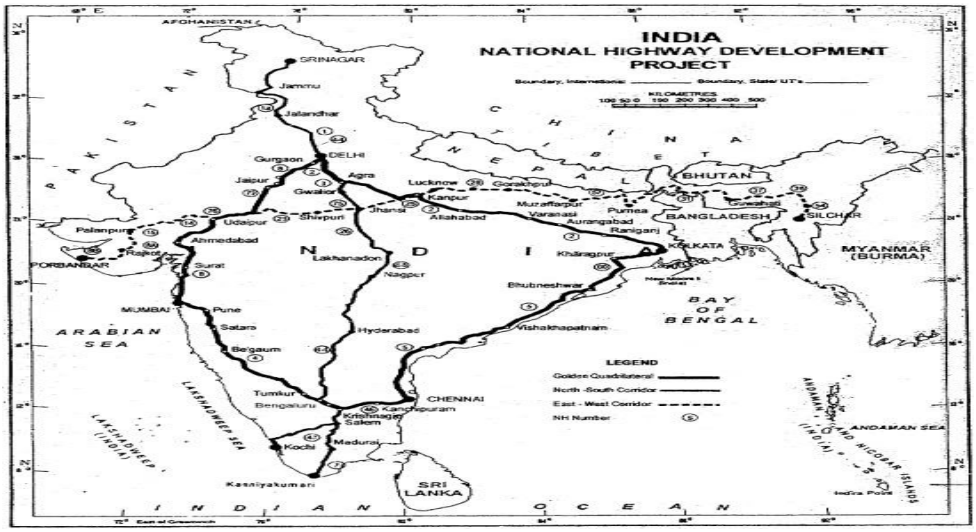


Question 4.
Label and locate the following on physical map of India.
Oil Refineries — Bhatinda, Panipat, Mathura, Barauni, Guwahati, Jamnagar, Mangaluru, Haldia, Tatipaka.

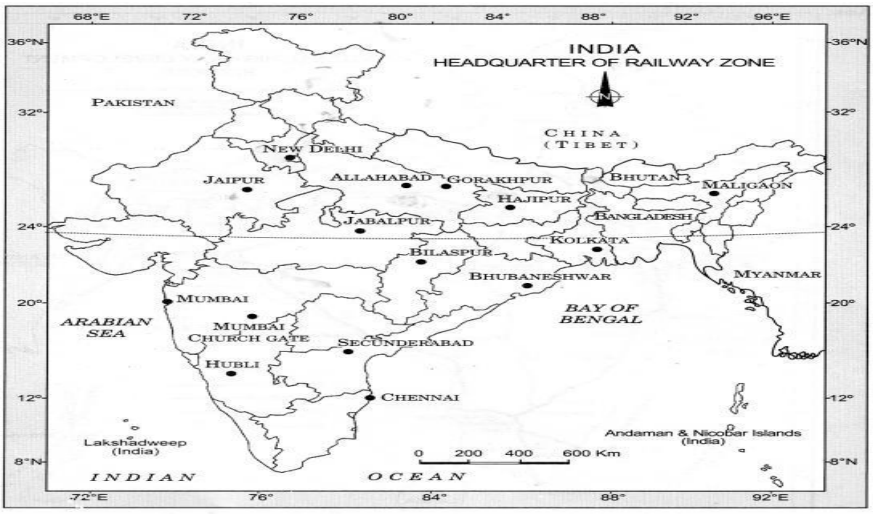
Answer:



Question 1.
Locate and label the following on the political map of India.
(i) Tower on north-south and east-west corridors.
(ii) Golden Quadrilaterals
Answer:



Question 2.
Locate and label the following on the political map of India.
Mumbai CST, Kolkata, Hajipur, Bhubaneshwar, New Delhi, Allahabad, Gorakhpur, Maligaon, Jaipur, Chennai, Secunderabad, Kolkata, Bilaspur, Hubli, Mumbai (churchgate), Jabalpur.
Answer:

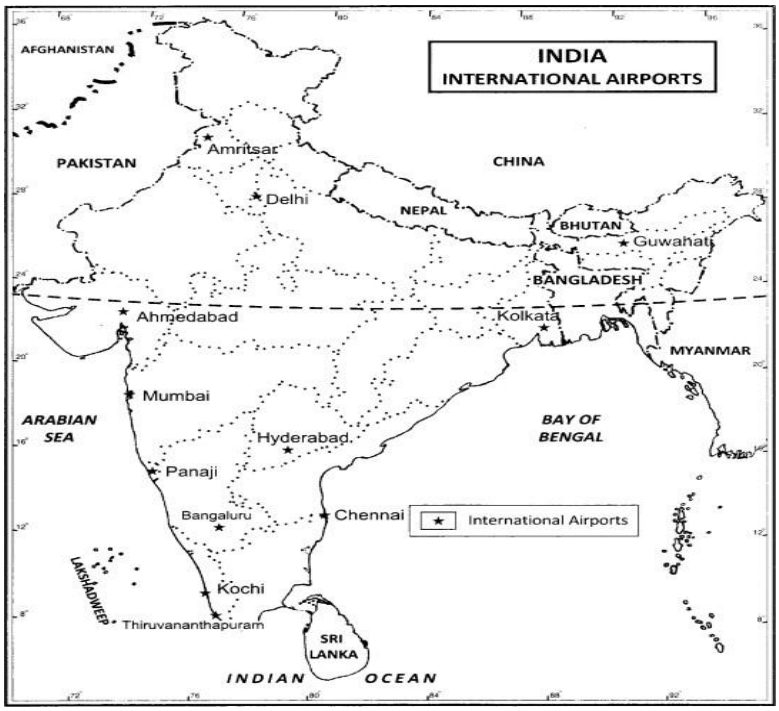


Question 1.
Label and locate the following on the political map of India:
Kandla, Mumbai, Murmagao, Kochchi, Ennore, Tuticorin, Chennai, Vishakhapatnam,Paradwip, Haldia

Answer:

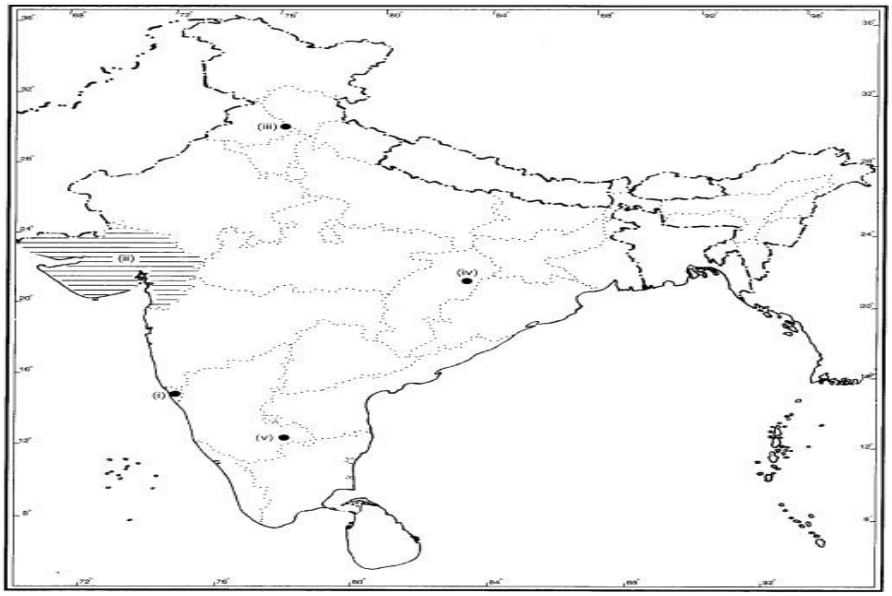
Question 2.
Locate and label the following on the political map of India.
Ahmedabad, Mumbai, Bengaluru, Chennai, Kolkata, Guwahati, Delhi, Amritsar, Panji,Kochchi (Kochi), Thiruvananthapuram and Hyderabad.

Answer:



Question 1.
Locate and label the following five features with appropriate symbols on the givenpolitical outline map of India. (Delhi 2017)
(i) The most urbanized state (2011). (ii) The leading cotton producing state.
(iii) The Software Technology park located in Punjab.
(iv) The major coal field located in Chhattisgarh.
(v) The international airport located in Karnataka.

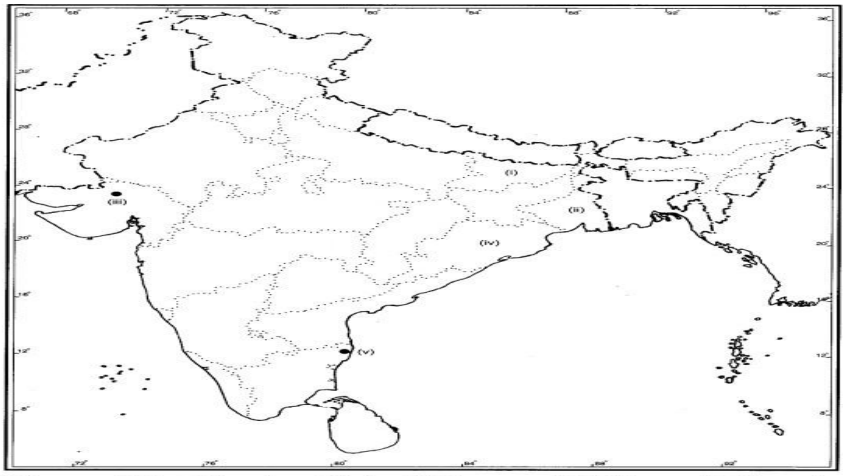
Answer:



(*i*) Goa (*ii*) Gujarat (*iii*) Mohali (*iv*) Korba (*v*) Bangalore

Question 2.
Locate and label the following five features with appropriate symbols on the givenpolitical outline map of India. (A.I. 2017)
(i) The state having the highest density of population according to Census 2011
(ii) A leading rice producing state (iii) The software technology park located in Gujarat
(iv) The major coal field located in Odisha
(v) An international airport located in Tamil Nadu

Answer:



(*i*) Bihar (*ii*) West Bengal (*iii*) Gandhi Nagar (*iv*) Talcher (*v*) Chennai

Answer