II PUC

FUNDAMENTALS OF HUMAN GEOGRAPHY

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DEEPAK KUMARA
LECTURER IN GEOGRAPHY
G P U COLLEGE, HANGALA
GUNDLUPET TQ, CHAMARAJANAGARA DIST.

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REPRESENTATION OF GEOGRAPHICAL DATA

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Deepak Kumara Lecturer in Geography, Govt PU College Hangala, Gundlupet Tq, C Nagara Dist

PART — A
FUNDAMENTALS OF HUMAN GEOGRAPHY

UNIT - 1
HUMAN GEOGRAPHY

I. Answer the following questions in a Word or Sentence each:

1. Name the two important branches of Geography.

Ans: Physical Geography and Human Geography are the two main branches of Geography.

2. Who is known as the father of Human Geography? 2016(S), 2017(S), 2019, 2020, 2022.

Ans: Freidrich Ratzel is known as father of Human Geography.

3. What is determinism?

Ans: Environment influence on man and his activities is known as Environment determinism.

4. What is quantitative revolution?

Ans: Introduction of Statistical and mathematical approaches in the study of human geography is known as quantitative revolution.

5. Write any one definition of human geography.

Ans: According to Ellen C. Semple "Human geography is the study of the changing relationship between the unarresting man and unstable earth

II. Answer the following questions in two to three Sentences each:

6. Mention the approaches of Human Geography.

Ans:

1. Environmental determinism approach.
2. Areal differentiation.
3. Quantitative approach.
4. Neo-Determinism.
5. Human behaviour approach.
6. Post Modernism.

7. Mention any two elements of Settlement Geography.

Ans: The elements of settlement geography are:

1. Location of settlements
2. Distribution of settlements.

8. What is Urban Geography? 2022.

Ans: The study of urban location, development, morphology, urban population and distribution etc. is known as Urban Geography.

9. What is Neo determinism?

Ans: The study of systematic balance between environment determinism and posibilisim is known as Neo-Determinism.

III. Answer the following questions in 30 to 35 Sentences each:

10. Explain the field of Human Geography.

Ans: The Human Geography studies the inter relationship between the physical and cultural environment. It emphasises on human creations and developments by the natural influences. Relief, drainage, soils, climate, vegetation, land forms are the elements of physical environment while the elements of cultural environment are economic activities, settlements, road-rail network, industries etc., these are created by human beings through their activities based on the opportunities provided by the physical environment. Thus, the physical environment has been greatly modified by human beings; at the same human life is also influenced by nature. In short it studies people in relation to space and time. The natural environment is modified by man. Cultural and technology have aided man in his attempt of making use of environment. Technology indicate the level of cultural environment.

11. Describe the branches of Human Geography. 2015, 2016(S), 2019, 2020, 2022.

Ans: The relationship of man and nature varies from one region to another. So the field of human geography is wide and it is divided into many branches. These branches deal about distinct aspects of Human Life in relation to the influences of environment. Some of the important branches of human geography are;

1. **Economic Geography:** it deals with the study of influences of various geographical factors on the economic activities of man like agriculture, manufacturing industries, transport and communication etc.,
2. **Political Geography:** t deals with the study of influences of various environment on political aspects such as states, nations, and boundaries etc.,
3. **Urban Geography:** it emphasis on the concepts like urban location, development, morphology distribution and movement of urban population land use pattern, urban population etc.,
4. **Cultural and Social Geography:** study of cultural evolution, diffusion and morphology are also dealt with reference to the geographical environment.
5. **Population Geography:** it deals with population with reference to geographical environment. Population growth, density, distribution, composition, and migrations etc.,
6. **Settlement Geography:** location of settlements, distribution, density, form, functions, and morphology are the important elements of settlement geography.

12. 'Human Geography is the study of man - environment relationship' Discuss.

Ans: The Human geography studies the inter relationship between the physical and cultural environment. It emphasises on human creations and developments by the natural influences. Relief, drainage, soils, climate, vegetation, land forms are the elements of physical environment while the elements of cultural environment are economic activities, settlements, road-rail network, industries etc., these are created by human beings through their activities based on the opportunities provided by the physical environment. Thus the physical environment has been greatly modified by human beings; at the same human life is also influenced by nature. In short it studies people in relation to space and time.

The natural environment is modified by man. Cultural and technology have aided man in his attempt of making use of environment .technology indicate the level of cultural environment. Human beings were able to develop technology through their struggle with the environment and better understanding of natural laws.

13. Explain the scope and importance of Human Geography. 2015(S), 2017, 2017(S), 2018, 2018(S).

Ans: The study of human geography is of great importance and relevance in the context of present generation. Its significance may be summarized as fallows;

1. Human geography helps us to understand the world we occupy and to appreciate the circumstances affecting people and nations.
2. It clarifies the contrasts in societies and cultures and in the human landscapes they have created in different regions of the earth.
3. There is a great diversity in the natural environment of the country. Human geography explains the causes for these diversities in relation to natural environment.
4. The population of the world is increasing year after the year. Study of human geography would enable to explain the reasons for the disparity in the growth, density and distribution of population relation to the carrying capacity of the earth along with sustainability.
5. It is helpful to the planners, administrators, industrialists and others.

Our study of human geography therefore can help make us better informed citizen more able to understand the important issues facing our communities and our country and better prepare to contribute to their solution.

14. Write a note on changing approaches in Human Geography.

Ans: Man has modified the environment through the processes of adaptation, adjustment and Modification through the history. Human civilization in a larger perspective understands of the earth by man. In course of development many approaches were evolved in Human Geography and it is continuously changing in pursuit of studying man environment relationship.

In the beginning of human societies, they were more isolated and they had unique characteristics. These were the matters of great interest during the ages of geographical discoveries and explorations.

Geographers have tried to explain peculiarities of man environment relationship with environmental **determinism approach.** They tried to compare human life of many societies living in different parts of the world. Thus, **regional and comparative methods** were evolved. The personality of each region and their uniqueness were emphasized. This approach was called **'areal differentiation'**.

Later during 1960's many **statistical and mathematical approaches** were introduced in the study of Human Geography. This new trend was called '**Quantitative Revolution'**. In contrast to environmental determinism, human oriented **possibilism and a balanced Neo-determinism** were also introduced.

During the latter part of 20^{th} century many new approaches were developed in the study of human geography. '**Human Behaviour'** oriented approach was widely used in the study man environment relationship. Besides, **human welfare oriented, Humanistic and Marxism oriented radical approaches** were also introduced. At present, rather than universal context man is looked from local context to understand his environmental relationship. This is well known as **'Post Modernism'**.

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UNIT - 2
WORLD POPULATION

I. Answer the following questions in a Word or Sentence each:

1. Who was the founder of population geography? 2015, 2016, 2017, 2020.

Ans: **G T Trewartha** is known as the founder of Population Geography.

2. What is natural growth of population?

Ans: It refers to the increase of population by difference between births and deaths in particular region between two points of time.

3. What is Demography?

Ans: The study of characterises of human population such as size, growth, density, distribution and statistics is known as Demography.

4. State the total population of the world in 2012. 2015, 2015(S), 2018, 2019.

Ans: Total population of the world in 2012 is 7 billion.

5. What do you mean by population explosion?

Ans: The rapid growth of population is called "Population explosion".

6. Mention the annual growth rate of population in 2012.

Ans: According to 2012 population data the growth rate declined to below 1.1%.

7. What is birth rate?

Ans: The births take place in a particular area per thousand populations is called as "Birth Rate".

8. What is death rate?

Ans: The deaths take place in a particular area per thousand populations is called as 'Death Rate'.

9. Name the country which has highest birth rate in the world. 2019

Ans: Niger with 51.26 births/1000 population.

10. Which country is having lowest birth rate in the world?

Ans: Japan with 7.64 births/1000 population.

11. Which country is having highest death rate in the world?

Ans: Sierra Leone of Africa has highest death rate at 18deaths/1000 population.

12. What is human migration?

Ans: Movement of people from one place to another place is called Human Migration.

13. Define internal migration.

Ans: Movement of people with in the Country/region is known as internal migration.

14. Which continent has highest growth rate of population?

Ans: Asia continent has highest growth rate of population.

15. In Asia, which country is having more population?

Ans: In Asia China having more population.

16. What is the density of population?

Ans: The density is the ratio between the numbers of people to the size of land.

17. Which country has the highest Sex ratio in the World?

Ans: The highest sex ration in the world has been recorded in Latvia and Estonia. It was 1174 and 1170/1000.

18. What is Literacy rate?

Ans: Literacy is the" ability to read and write with understanding".

19. What is the average Urban Population in the World?

Ans: About 50.5% population of the world is urban population.

20. What do you mean by Life Expectancy?

Ans: "The average period that a person may expect to live" is known as Life Expectancy.

21. Write average life expectancy of the world population.

Ans: Average Life expectancy of world population is 68.09years. Male population is 66.09yr and female is 70.24yr.

22. Who did introduce the concept of human development first time?

Ans: Dr. Mahbub-Ul-Haq introduces the concept of human development first time.

23. Write the 3 components of HDI. 2017(S), 2019(S), 2020.

Ans: 3 components of HDI are:

1. Health
2. Education
3. Decent standard of living

24. Expand HDI.

Ans: HDI: Human Development Index.

25. Name the four concepts of human development?

Ans: The HD is supported by the following four concepts:

1. Equity
2. Sustainability
3. Productivity
4. Empowerment

II. Answer the following questions in two to three Sentences each:

26. What is the difference between natural and net growth of population?

Ans: Natural Growth of population refers to **= total Birth – total Death.** In other hand net growth of population refers to **= births – Deaths + In migration – Out Migration.**

27. Write the components of population growth. 2022

Ans: There are three components of population growth:

1. Birth rate
2. Death rate
3. Migration

28. Name any four countries which are having low growth rate of population.

Ans: Britain, USA, Belgium, Russia, Japan and Australia are recorded low growth rate of population.

29. What are the causes for rapid increase of population?

Ans:

1. Causes for rapid increase of Population are;
2. Development of agriculture.
3. Industrial development
4. Improvement in medical facilities.
5. Drinking water supply
6. Control of epidemics the death rate has fallen.

30. What are the causes for migration?

Ans: Push factors and Pull factors are cause for migration. Like unemployment, poor living condition, climate, natural disasters etc.

31. Mention the types of migration. 2019

Ans:

1. On the basis of place it classified into two types.
2. Internal migration
3. International migration.

32. State the areas of high density on Earth.

Ans: The three principal regions of high density on the earth are;

1. Eastern, Southern and south-Eastern parts of Asia.
2. North-Western part of Europe.

3. North-Eastern part of USA and South-Eastern part of Canada.

33. Write the areas of low density on Earth.

Ans:
1. Near the North and South Pole.
2. Hot and cold desert areas
3. High rain fall regions of Equator have low density of population.

34. What is dependency ratio?

Ans: The ratio between the number of people in a population between the ages of 15 and 64(adults) and the dependent population (infants and aged) is known as dependency ratio.

35. What is demographic dividend?

Ans: It characterized by large amount youths due to higher births this is often accompanied by an extension in average life expectancy, that increases the working age group.

36. Mention the measures for the population control.

Ans: Population growth can be controlled by the following measures. Adoption and propaganda of family planning methods, practice of celibacy, self-control, remaining unmarried, improving women's status and health, tax disincentives for large families, education etc.

37. State the components of HDI.

Ans: 3 components of HDI are:
1. **Health:** it is the life expectancy at birth.
2. **Education:** the adult literacy rate and the gross enrolment ration represent the asses of education.
3. **Decent standard of living:** it is measures the purchasing power (in US$).

38. What is Demographic Dividend?

Ans: Lesser number of births and reduction in infant mortality, increase in the life expectancy as well as increase in the size of working population which initiate more development. It is called Demographic Dividend.

39. Name the countries which are having highest literacy rate in the world?

Ans: According to UNDP report 2011 Georgia, Estonia, Latvia, Slovenia, Ukraine, Russia, Hungary with other 94 countries that shows highest literacy rate.

III. Answer the following questions in 30 to 35 Sentences each:

40. Explain the growth of population in the world.

Ans: The growth of population or population change refers to the change in number of inhabitants of a country during a specific period. The growth may be positive or negative.

Trend of 7 billion world population

- **Three billion – July 1959.**
- **Four billion – April 1974.**
- **Five billion – July 1987.**
- **Six billion – 12 October 1999.**
- **Seven Billion – 12th March 2012.**

Population Growth: According to the estimates, World Population will grow 8 billion by 2027 and 9 billion by 2046. Growth of population is not uniform. The average annual growth rate during 1900 to 1950 was 0.8%. It rose to 1.9% during 1950-1970. The growth rate peaked at 2.2% after 1970. Thus population growth was rapid almost throughout the 20th century. This rapid growth of population is called "Population Growth" by the demographers. But in the recent decades world population growth has slightly decreased. According to 2012 population data the growth rate declined to below 1.1%.

Population growth rate is variable between developed and developing countries. It is very low in the developed countries like Britain, U.S.A, Belgium, Russia, Japan and Australia. In some developed countries like Sweden, Norway the growth is negative. Thus most of the world population is contributed by the developing countries of Asia, Africa and Latin America. It is well depicted in the chart showing population growth.

41. Discuss the distribution of population in the world. 2015(S), 2016, 2018, 2018(S), 2019, 2020, 2022

Ans: The world population has crossed about 7billion on march 2012. But the population of the world is unevenly distributed. The distribution of population is expressed in terms of density. The density is the ratio between the numbers of people to the size of land (the number of persons per unit area). It is usually measured as number of persons per sq. km.

1. **Areas of High Density:** The density of world population has been divided into three regions. They are:
   - Eastern, Southern and South-Eastern Parts of Asia:
   - North-Western Part of Europa:
   - Northern-Eastern part of USA and South-Eastern part of Canada:
2. **Areas of Medium Density:** the population is moderately dense in tropical regions of the world and the moist temperature regions of the Argentina, South-East Africa and Australia.
3. **Areas of Low Density:** other areas like those near the North and South Poles, the hot and the cold deserts and high rainfall zones near the Equator have very low density of population.

Asia is the most populated continent. It accounts about 61% of the world's population. Africa is second most populated continent with 13% of the world's population. Europe has 12% of the world's population. While South America 8.5%. North America 5% while Oceania is the least populated region which has 0.5%. Antarctica is uninhabited permanently, but scientist from various countries frequently enters into it.

42. Write a note on sex ratio and age structure of the world. 2016

Ans: Population composition is the description of population defined by characteristics such as age, race, sex or material status. Each person of a country has his/her own character. People can be distinguished by their sex, age, occupation, education, life expectancy, where they are residing and also based on many other factors.

1. **Sex Ratio:** the number of male and female population is an important demographic characteristic of a country. The ratio between male and female population is called the sex ratio. It is usually measured as "the number of female per thousand males".

$$\text{Sex Ratio} = \frac{\text{Female Population}}{\text{Male Population}} \text{ X1000}$$

In some countries the sex ratio is measured "the number of males per thousand females". There should not be any discrimination is gender, if there is gender discrimination in a country, the sex ration is unfavourable to females.

On an average, a sex ratio of the world was 986 females per 1000 males during 2010 and it was reduced to 984 in 2011. The highest sex ratio in the world has been recorded in Latvia and Estonia. It was 1174 and 1170/1000. In contrast, the lowest sex ratio was found in U.A.E. which is only 468 females/1000 males. As per the UN list the sex ratio is favourable for females in 139 countries of the world and un favourable for females in 72 countries.

2. **Age Structure:** Age structure is an important indicator of population composition. Age structure represents the number of people of different age groups. It includes both male and female population. Based on age population can be classified in to three groups.

Out of the total population about 65.8% of population belongs to the age group of 15-65 years who are adults, above 65 years of age group is only 8% of the total population and remaining about 26.2% is below the age group of 15 years called infants.

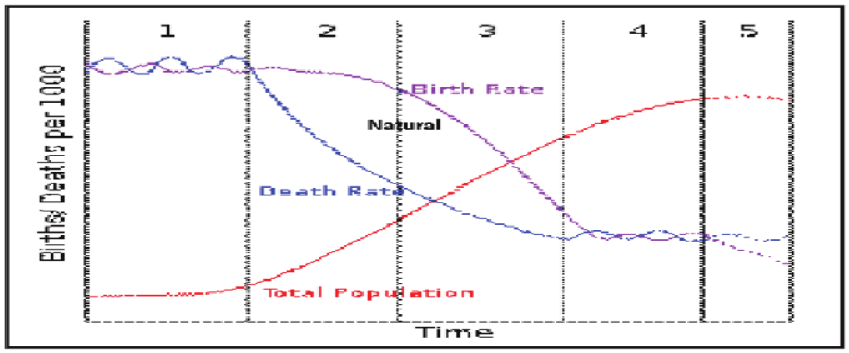
43. Explain the stages of demographic cycle. 2016(S), 2017, 2017(S), 2018, 2018(S), 2019, 2019(S), 2022

Ans: It is largely based on an interpretation by an American Demographer Warren Thompson in 1929.

Demographic Cycle: the transition involves five stages. The original Demographic Transition Model had only four stages; however, some theories consider that of a fifth stage.

1. **First stage (High Stationary):** it is characterized by both high birth rate and high death rate it is found when the country is economically most backward. So the population remains stationary. India was in this stage till 1920.
2. **Second stage (Early Expanding):** it begins with the decline of death rate while the birth rate remains unchanged. So this stage experiences the beginning of large increase of population. Due to improvements in food supply and sanitation, life span increases. These changes have brought

due to improvements in farming techniques, access to technology, basic healthcare and education. At present many developing countries of Asia and Africa are in this stage.



3. **Third stage (late Expanding):** Death rate declines further and birth rate begins to fall. Yet there is large increase of population since birth exceeds deaths. Due to access to contraceptives, increased wages, urbanization, a reduction in subsistence in the status and education of woman, an increase in parental investment in the education of children and other social changes. India appears to be this stage.
4. **Fourth stage (Low Stationary):** it is characterized with low birth rate and low death rate. So the population becomes stationary. Due to changing lifestyle and stationary working condition, high obesity and many diseases are caused in this stage aging population is predominant. Japan, Sweden, Belgium, Denmark and Switzerland are in this stage.
5. **Fifth Stage (Declining):** population begins to decline as birth rate is lower than death rate. East European countries like Germany and Hungary and north European countries are in this stage.

44. What is human development? Discuss the measuring of human development. 2015, 2017, 2017(S)

Ans: Measuring of Human Development: human development is measured with below method. They are;

1. **The Human Development Index.**
2. **The Human Poverty Index.**

These together give an accurate picture of the human development situation in a country. The human development index measures attainments in human development in the health, Education and Access of resources of human development.

Components (three basic dimensions) of Human Development Index: the human development index ranks the countries based on their performance in the areas of Health, Education and Access of resources. Therefore these are called as components/dimensions of human development.

The HDI is sum of total of the weights assigned to all the three dimensions.

1) **Health:** the health is the first index to measure the human development. It is the life expectancy at birth. A higher life expectancy means the people have a greater chance of living longer and health.
2) **Education:** it is the second index to access human development. The adult literacy rate and the gross enrolment ratio represent the asses of education.
3) **Decent Standard of Living:** Standard of Living is the third index to measure the human development. It is measured in terms of purchasing power (in US dollars).

Each of these dimensions is given a weight of 1/3. The average score of these three dimensions is nearer to one the grater in the level of human development. Therefore, a score of 0.983 would be considered very high while 0.268 would mean a very low level of human development.

The human poverty index measures the shortfall in human development. The following are the important aspects taken into account for these indices.

- **The probability of not surviving till the age of 40.**
- **The adult illiteracy rate.**
- **The number of people who do not have access to clean water.**
- **The number of small children who are underweight.**

45. Explain the important concept of Human Development index. 2015, 2017, 2017(S)

Ans: The concept of Human Development was introduced by Dr. Mahbub-Ul-Haq has described human development as “development that enlarges people’s choice and improves their lives.” The Basic goal of development is to create conditions where people can live meaningful lives.

Concept of Human Development: the human development is supported by the following four concepts.

1. **Equity:** the opportunities available to people must be equal irrespective of their gender, cast, race and income
2. **Sustainability:** sustainability means continuity in the availability of opportunities. To have sustainable human development, each generation must have the same opportunities. All environmental, financial and human resources must be used keeping in mind the future.
3. **Productivity:** productivity here means human labour productivity or productivity in terms of human work. Such productivity must be constantly enriched by building capabilities in people. Ultimately, it is people who are the real wealth of nations. Therefore, efforts to increase their knowledge, or provide better health facilities ultimately lead to better work efficiency.
4. **Empowerment:** means to have the power to make choices. Such power comes from increasing freedom and capability. Good governance and people-oriented policies are required to empower people. The empowerment of socially and economically disadvantaged groups has special importance.

46. Explain the components of Population Growth. 2016(S)

Ans: There are three components of population growth. These are Births, Deaths and migration. The population growth occurs not only by increasing birth rate but also due to decreasing death rate.

1. **Birth Rate:** The births take place in a particular area per thousand populations is called as 'Birth rate'. Birth rates ranging from 10-20 births per 1000 are considered low, while rates from 40-50 births per 1000 are considered high. There are problems associated with both an extremely high birth rate and an extremely low birth rate. According to UN Population Data, the average birth rate for the entire world is 19.14 per 1000 per year.
2. **Death Rate:** The deaths take place in a particular area per thousand populations is called as 'Death rate'. The death rate for the whole world is about 8.37 per 1000 per year at present. Sierra Leone of Africa has more death rates at 18 deaths per 1000 people.

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UNIT – 3
HUMAN ECONOMIC ACTIVITIES

I. Answer the following questions in a Word or Sentence each:

1. What do you mean by human economic activity? 2015, 2016

Ans: The actives pursued by human beings perform to satisfy their needs of food, clothing and others known as "Economic actives".

2. What are primary economic activities? 2016

Ans: The economic activities which are concerned directly with extraction of natural resources of any kind.

3. What are secondary activities?

Ans: Processing and conversing of raw materials into more valuable and useful products. There are also called as Secondary occupation.

4. Define lumbering?

Ans: Lumbering is an art of gathering forest products for livelihood by man.

5. What is hunting? 2022

Ans: Hunting was the practice of killing wild animal for food, skin, recreation and trade.

6. What do you mean by animal rearing? 2015

Ans: Domestication of animals for a specific purpose such as milk, meat, bones, skins, hair and wool is known as Animal Rearing.

7. What is agriculture?

Ans: Agriculture is an art of tilling the soil for the purpose of raising crops to provide food for the man and fodder for the animals.

8. What is Mining?

Ans: Mining is refers to the extraction of the minerals from the earth such as Iron Ore, Manganese, Gold, Petroleum.

9. What is an industry? 2015(S), 2016, 2017

Ans: The activities which are related to manufacturing are called Industries.

10. What is tertiary activity?

Ans: It includes all kinds of services, retail, entertainment, banking, education, healthcare, transport and communication.

II. Answer the following questions in two to three Sentences each:

11. Differentiate between secondary and tertiary activities.

Ans: The processing and conversion of raw materials into useful products are considered as Secondary Activity.

Tertiary sector is basically the part of the economic that helps both the sectors of primary and secondary it includes all kinds of services.

12. What are the different techniques of mining? 2015, 2017, 2022

Ans: The different technique of Mining are:

1. Open cast Mining
2. Underground Mining
3. Shaft Mining

13. Bring out the importance of secondary occupation. 2015, 2015(S)

Ans: The importance of secondary occupations are:

1. They provide employment to the people.
2. With the help of employment opportunities and improved standard the standard of the people.
3. They help to modernize the Agriculture sector by providing Tractors, Fertilizers, Manures and

Scientific Technology.

4. To helps in earning good foreign exchange.

14. Which are the types of fishing? 2016, 2016(S), 2022.

Ans: The different types of fishing are;

1. Fresh water fishing
2. Coastal fishing
3. Open sea fishing

15. 'Lumbering is developed in coniferous forests of the World'. Why?

Ans: Coniferous forests region is ideal for the gathering forest products for livelihood by man. This is found in cold temperature region So it encourage largely on this part of the world.

16. Write a short note on Food Gathering. 2016.

Ans: Gathering of production from nature to fulfil their basic needs like food, clothing and shelter. In some parts of the world. The people lead a simple life depending upon the nature for their livelihood like collect the wild fruits roots, nuts, leaves for the food, bark of trees, leaves and grass for clothing branches of trees, bamboo, leaves for making their homes for examples few nomadic tribes in the world.

III. Answer the following questions in 30 to 35 Sentences each:

17. Explain the animal rearing in the World.

Ans: **Domestication of animals for a specific purpose is known as animal rearing.** People in different parts of the world have domesticated different animals for various purposes. Animal products like milk, meat, bones, skins, hair and wool were obtained to satisfy basic needs of the human beings.

Regions of rearing animals in the world: animal rearing is carried on by traditional as well as modern methods. Under the traditional method the tribal communities lead a trans-humane or nomadic life instead of a settled life. Each nomadic tribe has its own well-defined territory.

1. **The Fulani of Nigeria and Massi of east Africa** are the cattle herders in the Tropical Grasslands. In the drier parts, where the grass is short, sheep and goats are reared. The animals provide Massi people with milk, meat and wool.
2. **The Bedouins of Sahara** migrate with their cattle and goat in search of pasture. The Kirghiz of Central Asia, in the past, had large flocks of sheep. At present their number has reduced because they are leading a settled life.

People engaged in commercial grazing, use scientific methods of rearing animals on a commercial basis. Commercial pastoral activity does not depend. Entirely on natural grass lands. Fodder crops like corn and grasses like alfalfa are cultivated over extensive areas and the animals are fed.

Commercial grazing does not require migration of human beings. It is practiced in Temperate grass lands, namely **Praires of N America, Pampas of S America, Steppes of Asia, and Downs of Australia. In USA and Argentina beef cattle are reared on large scale. In Australia and New Zealand** commercial rearing of sheep for wool and mutton has developed.

18. Explain agriculture in detail.

Ans: Agriculture is art of cultivating soil for the purpose of raising crops to provide food for man and fodder for animals.

Methods of Agriculture:

1. **Substance Farming:** through people needed a regular supply of food they started growing of crops only to fulfil their family not for the dale.
2. **Shifting Cultivation:** the tribal people move from one place to another place to clearing the forests for growing crops. When soil fertility is exhausted new patches of the forest land is cleared again for the cultivation. It is called shifting cultivation or Jhumming.
3. **Sedentary farming:** growing crops in same region again and again by using domestic animals for Ploughing, manures, chemical fertilizers etc. There was no need to migrate.
4. **Commercial farming:** growing of crops with scientific technology. Plantation agriculture was introduced with huge investments.

Percentage of people involved in agriculture is declining. It is only 4% in UK It is 62% in India, 80% Kenya, Agriculture is mechanized in the developed countries.

19. What is mining? Explain the types and advantages and disadvantages of mining?

Ans: Mining refers to the extraction of the minerals from the earth such as Iron Ore, Manganese, Gold, Coal and petroleum etc.

Major techniques of Mining: there are three main types of mining techniques are there:

1) **Open cast Mining:** this is the easiest method of mining where the soil covering the mineral deposit is removed and the minerals like coal, and iron ore are extracted.
2) **Underground Mining:** this type is adopted for the minerals which are found greater depth. This type of mining is carried on through drilling and pumping. Example: Petroleum and Natural gas.
3) **Shaft Mining:** it is adopted to obtain minerals that are located at greater depth example: Coal, Lead, Rock salt etc.

Advantages of Mining:

- It is source of employment.
- Which supplies valuable minerals ore's to the mankind.
- It provides raw materials to the mineral based industries.
- It develops secondary and tertiary activities of the human beings.

Disadvantages of Mining:

- Depletion of environment.
- Minerals are exhaustible in nature.
- Water resources are polluted.
- Both flora and fauna are affected by mining.

20. Explain fishing in detail. 2022

Ans: Fishing is an old and traditional occupation of human beings. The term Fishing include to catching of fish, crabs, sharks and collection of sea-shells etc. From the sea and fresh water.

Types of Fishing: based on fishing grounds, fishing has been divided into three categories they are:

1) **Fresh water fishing:** carried out in pounds, tanks, rivers and lakes (mainly inland).
2) **Coastal fishing:** carried out along the sea coast.
3) **Open sea fishing:** carried out in open sea on large scale.

Fishing is caught in a number of ways in different countries of the world. The developed countries are following primitive methods like Bows, Arrows, bare hands, small boats or small nets. In the developed countries of the world modern techniques of catching fish are used. The modern fishing vessels remain for a long time in the open sea fishing day and night. The large ships serve as floating factories that completes the process of catching, processing and packing them into tins. Fishing has developed in Japan, USA, Baltic States, UK and Norway on a commercial scale.

21. Differentiate between tertiary and quaternary activities.

Ans: **Tertiary Activity:**

- Tertiary services occur at different stages some are confined to industries some to people and few to both industry and people.
- Transport services are also provided to the individual consumers.
- Different services rendered by the teachers, musician, physicians and lawyers.

In developed countries of the world about 75% of people are engaged in services compared to the developed countries. The trend of employment in the tertiary sector is increasing.

Quaternary Activities:

- It refers to the economic activities that deal with the handling and processing of knowledge and information like software, sports, recreations etc.
- The Quaternary occupations along with the tertiary occupations have replaced most of the primary and secondary employment for the economic growth of a nation.
- They are not tied to resources, but localized by market.

22. Explain secondary occupations.

Ans: `The process by which the natural products are made more useful for human beings is called manufacturing. The activities which are related to manufacturing are also called Industries. These are concerned with the processing and conversion of raw material into more valuable and useful products. These are also called as Secondary Occupations

Importance of Industries:

1) Industries provide more national income and foreign exchange.
2) They provide employment to the people.
3) They help to modernize the agricultural sector by providing Tractors, Fertilizers, Manures and Scientific technology
4) They reduce the pressure on agriculture sector by providing more.
5) The industrial hubs can develop Trade, Education, Transport and Communication, banking etc.

Classification of Industries: these industries have been classified into the following groups based on the source of raw material.

1) Agro based Industry.
2) Forest based Industry.
3) Mineral based Industry.

1) Agro based Industry: the group of industries which are depending on agriculture for the raw materials for ex: Cotton for cotton textile industries, Jute for Jute industry and Sugarcane for sugar Industries.

2) Forest based Industry: the group of industries which are depending on forest for the raw materials for ex: Iron for Iron and steel industries, Bauxite for Aluminium industry.

3) Mineral based Industry: the group of industries which are depending on minerals for ores for ex: Bamboo for paper industries, Rubber for Rubber industry.

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UNIT- 4
TRANSPORT AND COMMUNICATION

I. Answer the following questions in a Word or Sentence each:

1. What is the transportation? 2016, 2017(S)
Ans: Transport is the means of carrying goods and passengers from one place to other by Human, animals and different kinds of Vehicles.

2. When was the first railway started in the World?
Ans: 1825 between Stockton and Darlington in Northern England.

3. Which country has high density of railways?
Ans: Europe is the highest density of Rail Network in the world.

4. Which is the longest rail route in the world? 2016, 2019.
Ans: Trans-Siberian railway.

5. What is water transportation?
Ans: Water transport is the means of carrying the goods and passengers through the boats, ships, steamers etc. on the water from place to place.

6. What is ocean transportation?
Ans: Carrying heavy goods and passengers through to the steamers and ships on the oceans from one country to another is called Ocean Transport.

7. What do you mean by Pipelines?
Ans: Pipe line is the means of carrying the liquid, slurry and gases through the pipes from one place to another.

8. Which is the busiest sea Canal route in the world?
Ans: The Suez canal is the busiest canal in the world.

9. What are the inland waterways?
Ans: The movement of goods, passengers, through rivers, canals, lake is known as inland water ways.

10. What is communication?
Ans: Communication refers to exchange of ideas and Information. From one person to other person.

11. What is internet? 2018
Ans: An inter connected system of networks that connects computers around the world.

12. What is cyberspace?
Ans: The electronic medium of computer networks in which on line communication takes place.

13. Explain ISRO. 2015, 2016(S), 2018, 2022
Ans: Indian Space Research Organization.

14. Name the largest news agency in the World.
Ans: The largest news agency in the World is Reuter. It is the first newspaper in the world.

15. Name the first artificial satellite launched by Russia. 2020
Ans: In 1957 Russia has lunched the first artificial satellite called ‘SPUTNIK’.

16. What is satellite communication?
Ans: An artificial body in orbit around the earth or another planet in order to collect and distribute information one place to another.

II. Answer the following questions in two to three Sentences each:

17. State the different modes of transportation. 2019(S)
Ans: The different modes of transportations are;

1. Land transport
2. Water transport
3. Air transport
4. Pipeline transport

18. Write any two highways of North America.

Ans: The highways of North America are;

1. The Trans-Canadian Highway.
2. The Alaskan Highway.

19. Explain any two important Trans – continental railways of Canada.

Ans: The Trans-Canadian Railways are as fallows;

1. Halifax in the East to Vancouver on the Pacific coast
2. Quebec – Montreal industrial region.

20. Name any two shipping canals of the World. 2019, 2022

Ans: The shipping canals of the world are;

1. The Suez Canal
2. The Panama canal

21. Name any two major international airports of South America.

Ans: International airports of South America are;

1. Rio-De-Janeiro International airport
2. Brasilia International airport

22. Name any two inland water ways of the World.

Ans: The waterways in the world is;

1. The Rhine waterways
2. The Danube waterways.

23. Mention any two means of modern communication.

Ans: The means of modern communications are

1. Television
2. Satellite
3. Computer Networking
4. Internet, E-Mail etc.

24. What is the full form of GIS and GPS

Ans:

1. GIS - **Geographic Information System.**
2. GPS - **Global Positioning System.**

III. Answer the following questions in 30 to 35 Sentences each:

25. Write about world Road Transport.

Ans: The means of carrying goods and passengers from one place to another place by road is called Road Transport.

World Distribution of Roads:

1. In North America highway density is about 0.65kms/km, as every place is within 20km just away from highway. The highest road density and the highest number of vehicles are in N America which accounts 33% of the total length of the roads in the world.
2. The longest road in the world is Pan American Highway. This connects Alaska-Canada-United States-Mexico.
3. Europe has the good density of road network which connects the entire Western and Central European countries. Russia a vast country developed a dense highway network in the industrial region. West of Urals with Vladivostok in the East.
4. Asia has a good network of roads. A great highway connects from Turkey in the west to Malaysia in the east through India. In NH-47 connecting Varanasi from the North to Kanyakumari in the South longest road way.
5. Africa has few number of good quality roads which connects Algiers in the North to Guinea.
6. In South America, Brazil has parallel road along the easterner coast.

7. In Australia 90% of the road network is found along the Coastal Region.

26. Write a note on world water transport. 2017

Ans:

1. **The Northern Atlantic Sea Route:** it connects north-eastern USA and North Western Europe, the two industrially developed regions of the world. Large amount of trade is carried through this route. This route connects the ports of Canada, USA, Mexico, Havana, Kingston and West Indies, with the west European parts.
2. **The Mediterranean Sea Route:** this route passes through the heart of the old world and serves more countries and people than any other. It passes through Suez Canal, South of Asia and connects South East and East Asia, on the other hand also Australia and New Zealand on the other hand. A variety of products are transported through the route as the crude oil is the most important, west bound product from the Middle East region.
3. **The Cape of Good Hope Sea Routes:** this sea route is the oldest. It begins from western Europe countries along the west coast of Africa go around Cape of good hope to connect Australia and New Zealand. It is very important for the African countries.
4. **The North-Pacific Sea Rout:** this sea route links the ports on the ports on the west coast on N America with those of east Asia, as it travers a vast ocean. It is not well developed.
5. **The North-Pacific Sea Rout:** this sea route connects Western Europe and North America with Australia, New Zealand and the scattered Pacific islands. It passes through the Panama Canal to the Panama Canal to the south, south east, Far East as well as Australia and New Zealand.
6. **The South Atlantic Sea route:** this sea route connects the eastern coast of South America with western coast of Africa and Europe. This route is not well developed.

Shipping Canals: the shipping canals are most important and play a crucial role in the world transport pattern. These canals cut across isthmuses and reduce the long distance og voyage. The countries are brought nearer, and increase trade. These canals are of large size, convenient for the movement of ships.

The major shipping canals in the world are:

1. **The Suez Canal**
2. **The Panama Canal**

27. Explain the distribution of railways in the world.

Ans:

1. Europe has the highest density of rail network in the world. It has about 4, 40,00kms of railway track and most are double or multiple line. Belgium has the highest density of 1.0km of railway for every 6.5km^2.
2. Railways are more in Russia. From Moscow major lines radiating to different parts of the country.
3. North America has one of the most extensive rail networks accounting for nearly 40% of the world's total.
4. Chile rail route connects the costal centres, mining centres as well as interior. Peru, Bolivia, Ecuador, Colombia, Venezuela have also rail connections.
5. In Asia rail network is most dense in Japan, China, and India. Japan has 20,035kms of rail routes. China has more than 91,000kms railway length.
6. Australia has 8,615kms of railways out of which 25% found in New South Wales.
7. Africa has 82,000kms of railway route in which 18,000kms lies in South Africa alone due to the concentration of gold, diamond and copper mines.

28. Write about the Trans Siberia and trans-Canadian railways.

Ans:

1. **The Trans – Siberian railway:** was inaugurated by the Czar Nicolsin 1891 and opened for transport in 1904. The most important train Russia runs in the Trans-Siberian Railway take 6days and 10hours to complete the journey. This railway system lies in Russia. It is the longest Railway route in the world at present. It connects Asia and Europe continents, linking Moscow eith Vladivostok. Through its branches it provides transport facilities from Moscow to the Atlantic coast in the west to the Vladivostok along the Pacific coast in the east, it connects St Petersburg, Moscow, Yekaterinburg, Tyumen, Omsk, Novosibirsk, Krasnoyarsk, Chita and Vladivostok. The total length of this railway is 9,289kms.
2. **The Trans-Canadian Railway:** there are two continental railway lines in Canada. The Trans - Canadian railway which run from Halifax in the east to Vancouver on the Pacific coast passing through Montreal, Ottawa, Winnipeg and Calgary. It was constructed in 1886, and connects the

Quebec-Montreal Industrial region and the Wheat belt of Prairie region with the coniferous forest region in the north. This railway line is the economic artery of Canada through which Wheat and meat are exported.

29. Write a note on World air routes. 2016

Ans:

1. **The North America:** the greatest air traffic is found in the USA with internal and international flights. It has the top airports like Atlanta, Chicago, Los Angeles, Dallas and San Francisco.
2. **South America:** it has far air routes. The major international air ports are Rio-de-Janeiro, Brasilia, Saopaulo, Santiago and Buenos Aires.
3. **Africa:** it is served by 2 international airlines. The east African air route through London, Rome, Cairo, Nairobi and Johannesburg with link across the Indian Ocean to Maritius, Sri Lanka and south East Asia and the Central air route connects Paris, Cape town, and west African routes through London to across the Atlantic Rio-de-Janeiro.
4. **Australia:** it has a well-developed international and external air services. Sydney is an important international airport.
5. **Asia-China:** has external link with other countries of the world as well because of its enroute location between Europe, Asia, Australia and Africa.
6. **The Russian international Air Routes:** are controlled by Moscow, Leningrad and Vladivostok. Russia and other countries of former Soviet Union are well connected by air service.

30. Write a note on the Mediterranean sea route.

Ans:

1. **The Mediterranean Sea Route:** this route passes through the heart of the old world and serves more countries and people than any other. It passes through Suez Canal, South of Asia and connects South East and East Asia on the one hand and also Australia and New Zealand on the other hand. A variety of products are transported through the route as the crude oil is the most important, west bound product from the middle east region.
2. **The Suez Canal:** it first visualized by Napoleon Bonaparte, but it was constructed in 1869 by British in Egypt between Port Said in the north and Port Suez in the south which connects the Mediterranean and Red Sea. It is narrow with 190kms long and 19 meters deep. It is a gateway to the Indian Ocean and reduces the distance compared to the Cap of Good Hope.

31. Discuss the inland waterways of the World.

Ans: The movement of goods, passengers through rivers canals, lakes known as Inland waterways.

The Main Inland Waterways:

1. **The Rhine Waterways:** the Rhine River flows through Germany and the Netherlands which is navigable for 700kms from Rotterdam of Netherlands to Basel in Switzerland. The Ruhr River joins the Rhine River from the east. This water way is the world most heavily used.
2. **The Danube Waterways:** This important inland waterway serves Eastern Europe. The river Danube rises in the black forest of Germany flows through many countries.
3. **The Volga Waterway:** Russia has a large number of developed waterways of which the Volga is the most important. It provides a navigable waterway of 1200kms and drains in to the Caspian Sea. It has two canal linkages: They are,
    1. **The Volga-Moscow Canal:** it connects Moscow region.
    2. **The Volga-Don canal Waterways:** connect with the black sea.
4. **The Great Lakes:** St. Lawrence Sea Way River along with great lakes from a unique commercial waterway in the North-eastern part of North America. This water way has Duluth and Buffalo ports.
5. **Mississippi Waterway:** the Mississippi-Ohio water way connects the interior part of USA with the Gulf of Mexico in the south.

32. Describe the importance of pipeline. 2017(S), 2018(S)

Ans: A pipeline is a line or conduit of pipe for carrying a liquid or gas. These have become more popular for transporting certain products for long distance.

USA: it has large network of pipelines. They are transporting natural gas, Petroleum and refined products. BIGINCH is the famous pipeline which carries petroleum from Gulf of Mexico to the north-east states. About 17% of all commodities is carried through pipelines in USA.

Europe pipeline system was laid to distribute refined products from sea ports to inland markets.

Africa pipelines are found in Nigeria and other countries of crude oil and natural gas production.

South America: The networks of pipelines are good with connecting Brazil, Venezuela and other main cities and industrial areas.
Pipelines are also popular in some Asiatic countries. China has one of the most impressive networks of pipelines. India has good network of pipelines connecting ports oil and gas fields, refineries and markets.

33. Explain the importance of Mass Communication. 2018, 2022

Ans: Communication refers to exchange of ideas and information is called Communication.
Communication is quite significant in the modern world.

1. They create awareness about the policies, programmes of development.
2. Learning and adopt new technology innovations in agriculture and industry as well as transportation.
3. People can acquire information of day's affairs of the world.
4. It brings out the unity integrity and stability of the country.
5. It helps in the development of cultural, political and social aspects as well as trade and commerce. They have laid a base for modern business.
6. Speed with massage could be sent across the world with in a second.
7. The telephone or Radio are liked the people worldwide and they can speak each other directly.
8. Even today newspaper touches every part of the country as it covers international national and local news as well as entertainment with other information.
9. The radio has its own name by broadcasting news and information which will reach all corners of country and abroad.
10. Television allows the audio and video facilities to gain information for public.

34. Explain the significance of transportation. 2015, 2019, 2020

Ans:

1. Transport is a service to facilitate the movement of goods and persons from one place to another by human, animals, and different kinds of vehicles.
2. Transport network is essential for economic development and commerce it helps agriculture, industry, forestry, mining, fishing, animal husbandry etc.
3. To carry the raw materials from their source to the industries and the finished goods from industry to market.
4. It also helps in the promotion of trade. Economic development of a nation requires the quick and efficient transport.
5. It is also required to establish tourism, conservation of culture and tradition as well as integration of a country.
6. Thus "the Agriculture and Industry are the body and bones of the nation, transport and communication are the nervous system. Transport also help in unifying the scattered people of the globe.

35. Explain Internet, Remote sensing, E-mail and Satellite communication.

Ans:

1. **Internet:** an interconnected system of networks that connects computers around the world.
2. **E-Mail:** a system for sending and receiving messages electronic all over a computer network, as between personal computer.
3. **E-Commerce:** Purchasing, selling and exchanging of goods and services over computer network.
4. **E-learning:** it refers to using electronic application and processes to learn.
5. **E-Governance:** the employment of internet and the world –wide-web for delivering government information and services to the citizens.
6. **Satellite Communication:** an artificial body placed in orbit round the earth or another planet in order to collect information for communication with other purposes.
7. **GIS:** Geographic Information System designed to capture, store, manipulate, analyse, manage and present all types of geographical data.
8. **GPS:** Global Positioning System is a space based satellite navigation system that provides location, local time information in all-weather condition anywhere on or near earth.
9. **Remote Sensing:** is the scanning of the earth by satellite or air craft to obtain information about it. It also the gathering and recording of information through aerial photographs and satellite images.

10. **Cyber Space:** the electronic medium of computer networks, in which on line communication takes place.

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UNIT - 5
HUMAN SETTLEMENTS

I. Answer the following questions in a Word or Sentence each:

1. What are human settlements? 2017, 2020

Ans: Settlement means the places inhabited by people permanently in village; a town or a city is known as settlement.

2. What is rural settlement?

Ans: All settlements not qualifying for an urban status are called rural settlements. They are engaged in primary activity.

3. What are wet point settlements?

Ans: Normally rural settlements are located near water points like rivers, lakes and springs where water can obtain easily. These settlements are known as 'wet point settlements".

4. What are hamlets?

Ans: There are smaller than villages and lacking of public utilities.

5. Name the first million population city of the World.

Ans: London by around 1810.

6. Define a city. 2015

Ans: A densely populated area of considerable size is a city which is larger than a town. An urban centre with 1 lakh and more population is called a city.

7. Define the meaning of megalopolis.

Ans: Megalopolis is a Greek word which means Great City consisting of several sites merging with the suburbs of one or more cities.

8. What is a Mega city? 2015(S), 2018, 2019, 2019(S)

Ans: Mega city is a metropolitan area with total population of more than 10 million people.

9. Which is the largest mega city in the world? 2016, 2018, 2022

Ans: New York is the largest mega city in the world.

10. Define the term "Conurbation".

Ans: The term conurbation applies to a large area of urban development that resulted from the merging of several towns of cities.

II. Answer the following questions in two to three Sentences each:

11. Define the urban and rural settlements.

Ans: Rural settlements are the settlements whose occupants are engaged mainly on Primary activity like Agriculture and animal husbandry.

12. Mention the important patterns of rural settlements. 2016

Ans: There are five important patterns of rural settlements.

1. **Uniform Pattern.**
2. **Clustered Pattern.**
3. **Random Pattern.**
4. **Dispersed Pattern.**
5. **Hamlets Pattern.**

13. Define city and million cities. 2019

Ans:
1. **City:** the urban centre with 1lakh and more population is called a city.
2. **Million Cities:** Total Population of 1 million and above the urban area is known as million cities.

14. Give two examples of educational towns. 2015, 2017, 2018, 2019, 2020, 2022

Ans:
1. **Mysore**
2. **Oxford**
3. **Dharwda (Write any two)**

15. Mention any two cultural and religious towns.

Ans:
1. **Mecca**
2. **Rome**
3. **Puri**
4. **Varanashi**
5. **Madurai (Write any two)**

16. Give two examples for administration towns. 2015(S), 2016(S)

Ans:
1. **New Delhi**
2. **Canberra**
3. **Beijing (Write any two)**

17. Mention the examples for trading and commercial towns.

Ans:
1. **Mumbai**
2. **Lahore**
3. **Baghdad. (Write any two)**

III. Answer the following questions in 30 to 35 Sentences each:

18. Explain the pattern of rural settlements.

Ans: The term 'settlement Pattern' refers to the spatial arrangement of houses. It refers to the organization of dwelling in a settlement in relation to each other.

The rural settlement pattern may be mainly classified into following types:

1. **Uniform pattern:** a uniform pattern of settlement is even distribution of houses which indicate the equal distribution of resources.
2. **Clustered pattern:** refers to the settlements which are very close to each other. These patterns are located near the rivers, fertile lands, mining points etc.
3. **Random Pattern:** in this type of settlement neither they are clustering not highly dispersed.
4. **Dispersed settlements:** in this the settlements the houses are located away from each other individually. Sometimes even houses are away from each other such as farm houses. This kind of settlement is also called scattered settlements.
5. **Hamlets:** these are smaller than village and lacking of public utilities.

19. Explain the different shaped rural settlements With neat diagram.

Ans: The rural settlements are of different shapes. These are established in different locations and environs. course of time they attain different number of geometrical forms and shapes such as:-

1. **Linear pattern:** in such patterns of rural settlements houses are located along a road, railway line, river and canal. Edge of a valley or a long levee.
2. **Rectangular pattern:** are found in plain areas or wide inter mountain valleys. The roads are rectangular and cut each other at right angles along which house are built.
3. **Circular pattern:** this pattern develops around lakes, tanks, and sometimes the villages are planned in such a way that the central part remains open and are used for keeping the animals to protect them from wild animals.
4. **Star shaped pattern:** where the several roads meets, star shaped settlements develop as the houses built along the roads.
5. **T, X, Y and Z shaped pattern:** these settlements develop at tri-junctions of the roads. While Y-shaped settlements emerges as the places where two roads coverage on the third one and houses are built along these roads or cruciform settlements develop on the cross roads and houses extend in all direction.
6. **Double village:** these settlements extend on both sides of a river where there is a bridge.
7. **Triangular pattern:** this shape of settlements set by the confluence of two rivers and also the junction

point of two railway lines are often triangular. Allahabad situated in the triangle formed by the confluence of the Ganga and the Yamuna has s typical Triangular shape.

20. Explain the types of urban settlements.

Ans: The types of urban settlements are designated as towns, cities, million cities etc. It is based on their size of population.

1. **Town:** a town is one in a rural community, having much smaller in size of a population than city.
2. **City:** a densely populated area of considerable size is a city which is larger than a town. An urban centre with 1 lakh and more population is called a city. A city can regarded as a leading town and has a greater number of economic functions. When the population increases the city may turned as Mega Polis or a large city.
3. **Conurbation:** the term conurbation applies to a large area of urban development that resulted from the merging of several towns and cities. E.g. greater London, Greater Mumbai etc.
4. **Megalopolis:** Megalopolis is the extended urban or metropolitan area, typically consisting of several sites merging with the suburbs of one or more cities. These are having total population in excess of 10 million populations.
5. **Million City:** total population of 1 million and above the urban area is known as million cities. The number of million cities in the world has been increasing followed by Paris in 1850 and New York in 1860.
6. **Mega City:** A mega city is a general term for cities together with their suburbs with population of more than 10 million. New York was the first mega city by 1950 with population of 12.5 million.

21. Discuss the problems of rural settlements.

Ans: Rural settlements in the developing countries are largely and poorly equipped with infrastructure. The most important problems of rural settlements are:-

1. Supply of water is most inadequate. People in the rural areas particularly in mountain and desert regions walk for longer distances to fetch drinking water.
2. The water borne diseases such as cholera, jaundice etc. are the common problems.
3. Many rural areas are facing the problems of natural disasters which occur frequently such as flood and droughts.
4. Agricultural areas are facing the problems of natural disasters which occur frequently such as floods and droughts.
5. Being dominated by agriculture the effects of droughts are sever and have effects which stretch for many years. The rural houses are lacking toilet and disposal facilities of solid waste/garbage which cause health related problems.
6. The houses are made up of mud, wood and the thatch which are damaged by heavy rains and floods.
7. Most of the houses do not have proper ventilation and the design of the houses also includes animal shed with fodder storage.
8. The rural settlements are lacking roads and other modern communications. These are isolated and some of them are in the remote areas lacking facilities like hospital, educational and employment facilities etc.

22. Explain the Urban Settlements based on occupation and functions.

Ans: All urban settlements have some common functions; but every city is different in one or other respects. It performs unique functions for which it is known. The following are the important urban functions.

1) **Administrative Towns:** some urban centres are engaged in administrative function which may term as the good administrative centres. Exp: Delhi, Beijing, London, Washington D C etc.
2) **Trading and Commercial Town:** now a days many towns are turned into trading and commercial functions such as
   - **a)** Market centres like Mumbai
   - **b)** Banking and financial centres like Frankfurt and Amsterdam, Manchester and St. Louis.
   - **c)** Industrial centres like Pittsburgh, and Jamshedpur, Mumbai, Manchester, Shanghai, Tokyo.
   - **d)** Mining and Quarrying centres- Dhanbad, Johannesburg, Kimberly, Kalgoorlie and Ruhr and Broken Hill.
3) **Cultural and Religious Towns:** the places of pilgrimage and worship like Jerusalem, Mecca, Rome, Puri Jagannath, Varanasi, Mathura, Madurai etc. are the some important cultural and religious towns.
4) **Educational Towns:** some urban centres are well known are well known for education with good

institute, such as schools, Colleges and universities. Exp: Aligarh, Mysore, Oxford, Dharwad, Cambridge etc.

5) **Tourist Centres:** the place where it has specific natural scenery, a good landscape a beach, or greenery may become the tourist centres.

23. Discuss the problems of urban settlements.

Ans: Urbanization is a process where an increasing percentage of population lives in cities and suburbs. Large sale urbanization results with many problems.

1. **Economic Problems:** increasing population in the urban centres causes unemployment.
2. **Socio-cultural problems**:
    1. Increasing the population results in lacking of social services as they cannot reach to everyone.
    2. Insufficient financial resources fail to create adequate social infrastructure creating to the basic needs of the huge population.
    3. The available educational and health facilities remain beyond the reach of the urban poor.
    4. Male selective migration leads to distorted sex-ratio.
    5. Urban expansion leads to vertical expansion.
3. **Environmental Problems:** Urbanization also causes deterioration of environment quality by pollution and disposal of waste.
4. **Problems of Slums:**
    1. Slums are the most important and severe problem of urban settlements.
    2. There are ugliest parts and have deteriorated living conditions.
    3. Poverty, housing, sanitation, water facilities are the major problems.
    4. Slums are also centers of all kinds of Socio-economic problem and illegal activities.
    5. Now-a-days the slums are occupying a large space of the urban centers and are still expanding.

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PART — B
HUMAN AND ECONOMIC GEOGRAPHY OF INDIA

UNIT- 6
POPULATION OF INDIA

I. Answer the following questions in a Word or Sentence each:

1. What is the total population of India as per 2011 census?
Ans: According to the 2011 census the total population of India was 121.01cr.

2. What is the percentage of Indian population in total world's population?
Ans: With a land of 2.4% of world, it has 17.5% of total world population.

3. Name the state recorded highest literacy rate of India?
Ans: The state recorded highest literacy rate of India is Kerala with 93.91%.

4. Which state has the highest density of population?
Ans: The state with 1,102 person/sq. km.

5. Which decade was considered as "the great divide in the history of Indian census"?
Ans: The decade which is known as great divide 1901-1921.

6. What is the average birth rate and death rate of India as per to the 2011 census?
Ans: The average birth rate is 22.22/1000person. The average death rate is 6.4/1000 persons in 2011.

7. Name the state that has highest sex ratio in India. 2015, 2016(S)
Ans: Kerala 1084 females for every 1000 males according to 2011 census.

8. Mention the states that have highest and lowest density of population in India. .
Ans: The highest density state is Bihar (1102) and lowest density is Arunachal Pradesh (17) of population.

9. What is the average density of population in India as per 2011 census?
Ans: The average density of population in India as per 2011 census is 382 persons/sq km.

10. Name the union territory which has the highest density of population.
Ans: The union territory that has highest population density in Delhi (11,297/1,000 persons).

11. When was the family planning programme introduced in India? 2016, 2022
Ans: The family planning programme introduced in India in the year 1952.

12. What is Migration?
Ans: The movement of people from one place to another is known as Migration.

13. What is the average literacy rate in India according to the 2011 census?
Ans: The literacy rate in India according to the 2011 is 74.4%.

14. What is the decade in which lowest population growth is recorded after independence?
Ans: The lowest population growth is recorded after independence in the decade of 2001-2011.

15. Which stream of internal migration is called as 'Women migration'
Ans: Rural to Rural stream of internal migration is called as women migration.

16. Expand UNDP.
Ans: UNDP: **United Nations Development Program.**

17. What is the rank of HDI of India according to 2011?
Ans: The rank of HDI of India according to **2011 is 134th** Rank.

II. Answer the following questions in two to three Sentences each:

18. What do you mean by population explosion?
Ans: More number of births and less number of deaths. This leads to rapidity in the growth of population which is known as Population Explosion.

19. What is population density? 2015, 2019

Ans: The total numbers of population per square kilometres area is known as density of population.

$$\textbf{Population density} = \frac{\textbf{Total Number of population}}{\textbf{Total Geographical area}}$$

20. Mention any two factors that are causes for high birth rate in India. 2016

Ans: The causes for high birth rate in India are;

- Early marriage
- Universal marriage
- Religious and social superstitions
- Illiteracy etc.

21. What is the difference between immigration and emigration?

Ans:
1. **Immigration:** is used for in-migration from across the international borders.
2. **Emigrations:** is used for out-migration from one country to another.

22. Give any four reasons for low Death rate in India.

Ans: Reasons for low Death rate in India.

- Control of epidemics
- Expansion of medical facilities
- Control of infant mortality
- Spread of education etc.

23. What is the difference between inter-state and intra state migration? 2017

Ans:
- Movement of people from one state to another is called 'inter-state migration' for example: people can migrate from Karnataka to Goa.
- In Contrast movement of people within the state is called ''intra-state migration' for example: people can migrate from Mysore to Mandya.

24. Name four types of internal migration. 2022

Ans: The four streams of Internal Migration are:

- Rural to Rural
- Rural to Urban
- Urban to Urban
- Urban to Rural

25. State any two positive effects of human migration.

Ans: The two positive effects of human migration are:

- **It helps the people to get employment.**
- **It reduces the problem of scarcity of labour.**

26. Name any two factors influenced on Human Development Index in India.

Ans: The two factors influenced on Human Development Index in India are:

- **The birth rate and death rate.**
- **Life expectancy.**

27. Name the states that have highest and lowest Human Development Index in India.

Ans: **Kerala** has highest and **Chhattisgarh** has lowest HDI in India.

III. Answer the following questions in 30 to 35 Sentences each:

28. Explain the trend of population growth in India. 2017(S)

Ans: India is the second most populous country in the world next only to China. According to the 2011 census, the total population of India was 121.01cr. India occupies 2.4% of the worlds of the world's land area and supports over 17.5% of world's population.

Increase in the number of people who inhabit in an area is called the 'growth of population'. The growth of population in India Between 1901 and 2011 can be divided into four stages as follows.

1. **1901-1921 Stagnant population growth.**
2. **1921-1951 Steady growth.**
3. **1951-1981 Rapid Growth.**
4. **1981-high growth with definite sign of slowing down.**

1. **1901-1921 Stagnant population growth:** In first stage the population grew from 238 million (1901)to 251 million(1921), an increase of 13 million. The growth was very slow up to 1921; it has registered even a negative growth of -0.31%. In this decade, population growth was naturally curbed with the out brake of plague, cholera, malaria, influenza and other epidemics. Thus the decade is

considered as **'the great divide in the history of Indian Census'.**

2. **1921-1951 Steady growth:** in second stage, the population can be considered as moderate. Grew from 251 million (1921) to 361 million (1951), an increase of about 110 million. The main reason was decline in death rate due to control of epidemics. And diseases like Tuberculosis and speedy relief given in times of famine and floods. Infant mortality also fell due to better health and sanitation facilities.
3. **1951-1981 Rapid Growth:** third stage is very important because the growth rate of population was very high. The population grew from 361million (1951) to 686(1981), an increase of about 325 million. The growth has been very rapid after independence.
4. **1981-high growth with definite sign of slowing down:** the fourth stage completely differs from other three stages. Here the trend of growth rate of population is gradually slowing down. The growth rate has started decline from 1981on wards. It was decline 24.66% in 1981 to 17.64% in 2011. Therefore, we can easily justify that the period from 1981 to 2011 is referred to as a high growth with definite signs of slowing down.

29. Explain the causes for rapid growth of population in India. 2017, 2020

Ans:

1. **High Birth rate:** is the dominant factor in rapid growth of population in India. It was 49.2 in 1901 have declined to 22.22 per thousand in 2011. However, at the same time, death rate has very sharply declined and it has caused for population explosion.

- **Causes for high birth rate:** There are several causes for high birth rate in India. For example; early marriage, universal marriage, religious and social superstitions, joint family system, illiteracy, polygamy, predominance of agriculture, poverty, slow urbanization process, tropical climate etc. All these factors have been caused directly or indirectly for high birth rate.

2. **Low Death Rate:** Death rate was very high (42.6) in 1901, but it was sharply declined over the decades (6.4 per thousand persons) in 2011. It resulted to the population explosion in the country.

- **Causes for low death rate:** There are many causes for the declining trend of death rate; they are, control of epidemics, decline in the incidence of malaria and tuberculosis, expansion of medical facilities, control of infant mortality, spread of education, improvement in the nutrition level etc., due to all of these programs and activities, death rate was been declined from one decade to another.

30. Explain the distribution of population in India. 2019

Ans: Based on density of population, distribution of population in India can divided in to three zones. They are as follows,

1. **High - density zone**: It includes the states and union territories of **more than 501 persons per square km.** Bihar (1102), West Bengal (1030), Kerala (859), Uttar Pradesh (828), Haryana (573), Tamil Nadu (555), Punjab (550) states. Delhi (11297) Chandigarh (9252), Puduchery (2598), Daman and Diu (2169), Lakshadweep (2013) and Dadra and Nagar Haveli (698) are the union territories which have high density of population in the country.
2. **Medium - density zone:** It includes the states, which have a **density of 251 to 500 persons per square km.** It includes Jharkhand (414), Assam (397), Goa (394), Maharashtra (365), Tripura (350), Karnataka (319), Andhra Pradesh (308), Gujarat (308), and Odisha (269) states. Most of the states of peninsular India are is this group.
3. **Low -Density zone:** The states and union territories, which have less than **250 persons per square km,** are in this zone. Madhya Pradesh (236), Rajasthan (201), Uttarkhand (189), Chhattisgarh (189), Meghalaya (132), Himachal Pradesh (123), Nagaland (119), Sikkim (86), Jammu and Kashmir (56), Mizoram (52), and Arunachal Pradesh (17) and the union territory of Andaman and Nicobar Islands (46) have very low density of population in the country.

31. Explain the factors influencing on uneven distribution of population in India.

Ans: Various factors have influenced on the uneven distribution of population in the country. Some important factors are briefly discussed below.

1. **Physical factors:** the mountain and hilly regions are most unstable for human habitation. For Exp: Northern Mountain, Western Ghats and Eastern Ghats are moderately populated. The fertile great plains of north India and the river deltas have high density of population.
2. **Climate:** this influences on the distribution of population. The density of population is high in good climatic regions. But very hot and very cold and very dry climatic regions have low density of population.

3. **Soil:** the northern plains eastern and western coastal plains are most densely populated because the deposition of Alluvial soil. In contract, infertile sandy areas are less productive and they have lower density of population.
4. **Natural Resources:** mineral and power resources promote rapid economic development. Therefore such areas are densely populated. For Exp: Chhattisgarh, Odisha, West Bengal etc.
5. **Industries, Trade and Commerce:** highly industrialized, commercial and business areas of the country have densely populated. For Exp: Mumbai, Surat, Bhili, Durgapur and Bengaluru etc. in contract the areas for away from business and they are sparsely populated.
6. **Security:** people like to stay in a good security of life and property. Hence it is also influenced on population distribution. For example, border areas of Jammu and Kashmir and Rajasthan are sparsely populated. In contract UP, Bihar, W Bengal etc. most densely populated.

32. Describe the factors responsible for growth of population in India.

Ans: There are several causes for the rapid growth of population in India. Prominent among them are high birth rate and low death rate.

1. **High Birth Rate:** is the dominant factor in rapid growth of population in India. It was 49.2 in 1901 have declined to 22.22/1000 in 2011. However, at the same time death rate has very sharply declined and it has causes for population explosion.

   Causes for high Birth Rate:

   1. Early marriage, Universal Marriage.
   2. Religious and social superstition, joint family system, illiteracy, polygamy.
   3. Predominance of agriculture, poverty, slow urbanization process.
   4. Tropical climate etc.
2. **Low Death Rate:** death rate very high (42.6/1000) in 1901 but it was sharply declined over the decades (6.4/1000) in 2011. It resulted to the population explosion in the country.

   Causes for low death rate:

   1. Control of epidemics, decline in the incidence of malaria and tuberculosis,
   2. Expansion of medical facilities, control of infant mortality.
   3. Spread of education, improvement in the nutrition level etc.

33. Discus the composition of population in India. 2015(S)

Ans: The composition of population includes the study of sex ratio, literacy, age structure, rural and urban population etc.

1. **Sex Ratio:** the number of females per 1000 males is known as the 'Sex Ratio'. As per 2011 census, the average sex ratio of the country was 940 females for every 1000 males. There are 1084 females for every 1000 males in Kerala. In contrast Haryana has 877 females for every 1000 males.
2. **Literacy Rate:** in recent years, literacy rate has increased in the country. The average literacy in 1951 was only 18.33%. it has increased to 74.4% in 2011. Male literacy was 82.1% and female literacy only 65.5%. Kerala with high literacy 93.31% and Bihar with 63.82% is the lowest literacy state.
3. **Age Structure:** on the basis of the age the entire population is divided into three group namely Infants (0-14year) 31.10%, Adults (15-59 years)63.60% and Aged (60 and above)5.3%.
4. **Rural and Urban Population:** according to 2011 census, in India 76.4% of the people lived in rural areas and 23.6% lived in urban areas. This indicates the predominance of rural population in India. Among the states Maharashtra has the highest urban population and Sikkim has lowest urban population. UP has more rural population and Mizoram has low rural population.

34. What are problem caused with rapid growth of population? 2016(S), 2019

Ans: The rapid growth of population has led to a number of problems. The chief among them are as follows.

1. **Unemployment and Underemployment:** it is the major problem caused with the rapid growth of population in the country is the large-scale. It has been increasing from year to year. It is badly affected on young educated people both in rural and urban areas.
2. **Shortage of food and malnutrition:** India is predominantly an agricultural country. It is now self-sufficient in respect of food grains. Due to the rapid growth of population, ther was a great pressure on the source of food. A large number of people are poorly fed. Malnutrition is prevailing throughout the country.
3. **Burden on civic and social amenities:** education, health and medical housing, drinking water,

electricity and sanitation are the basic requirements for any society. Through government is providing these through various development programmes it is not keeping peace with the increase of population. It causes the social inequality of the country.

4. **Low per capita income:** the national income of the country has increased about 3.6% per annum. But the increase in per capita income is only 1.5% annually.
5. **Increase of unproductive population:** in our country the entire population is not productive. People in the age group of 16-60 years are known as productive. Infants below 15 years and above 60 years are unproductive. They are depending on earning persons.
6. **Others:** slow in economic development mass poverty, low standard of living political unrest and the social problems like theft, robbery, immortality, corruption and the growth of slums, environmental pollution are also directly related to the population explosion.

35. Explain the types of migration. 2018

Ans: Movement of people from one place to another is known as Migration. According to the census of India, the migration means the change of place of birth or residence. Migration can be broadly classified into two. They are:

1. **Internal Migration.**
2. **International Migration.**

1. **Internal Migration:** movement of people from one region to another within the same country is called internal migration is of this category. In India there are four streams of internal migration they are:
   a) Rural to Rural b) Rural to Urban
   c) Urban to Urban d) Urban to Rural

a) Rural to Rural: this is estimated that about 65.2% of total migration is of this category. It is an important example for matrimonial migration, and it is called women migration.

b) Rural to Urban: migration 17.6% is second important type of migration. Rural-urban migration is caused by both push of the rural areas as well as pull of the urban areas.

c) Urban to Urban: about 11.2% of the migration belonged to this streams in the country. Generally people like to move from small town with less facility to large cities with more facilities.

d) Urban to Rural: urban areas are usually affected by the pollution. And also they have high cost of living, heavy pressure on public utility service etc. the retired and aged people preferred to spend their old age life in nearby villages. Thus people move from the urban to rural.

Internal Migration also divided into two types they are:

1. **Inter-State:** movement of people from one state to another state. Exp: Karnataka to Goa, Delhi to Maharashtra.
2. **Intra-State:** movement of people with in the state. Exp: Mysore to Kodagu, Bangalore to Kolara etc.

2. **International Migration:** movement of people from one country to another country, across international boarder is called International Migration.it can be studied under Emigration (Out Migration) and Immigration (In Migration).

36. Describe the effects of migration. 2016

Ans: Migration plays a very significant role in changing the composition and distribution of population. It can be classified into two groups namely, Positive effects and Negative effects.

Positive effects of migration:

1. Migration controls the high density of population.
2. It helps the people to get employment.
3. It reduces leads to change the demographic structure of a region.
4. It helps to reduce the inequality of the society.

Negative effects of migration:

1. It effects on density and distribution of population.
2. Large scale migration from rural to urban centers results in creation of slums.
3. It also leads to many social problems such as debachelory and immortal activities.
4. There will be pressure on civic amenities, like electricity, water etc.
5. Migration causes ethnic, religious and language problems.
6. It wills effects on the job opportunities of local people.

37. State the controlling measures of migration.

Ans: Controlling measures of migrations are:

1. Expand the civic amenities to villages as well as cities. It can be control rural to urban migration.
2. Develop transport facilities between the city and surrounding rural areas.
3. Create more employment opportunities in the surrounding rural areas of the city.
4. Develop satellite towns around big cities with all basic amenities.
5. Encourage labours to live in the satellite town rather than in the big cities.
6. Develop industrial areas outside the cities.

38. Explain in brief the factors influencing on Human Development Index of India. 2015(S), 2022

Ans: Factors influencing on HDI of India: the following factors are mainly influenced on HDI in India. They are briefly discussed below.

1. **Birth and Death rate:** declining of birth rate has been much slower than that of the death rate. This results in rapid increase of population. It effects on slow economic growth of the country. It is the main cause for declining of human development index.
2. **Life Expectancy**: has gone up 65.77 years for males. 67.95 years females respectively in 2011-12. This is due to the consequence of the expansion of food security and medical facilities. It helps to raise the HDI in the country.
3. **Food and Nutrition:** according to 2011 Global Hunger Index (GHI) report, India has 15th rank among the leading countries with hunger situation.
4. **Literacy:** Education is the key for socio-economic progress. The Indian literacy rate grew to 74.04% in 2011 from 12% at the end of the British rule in 1947. India has the largest illiterate population. In 2011 literacy rate is near 82.14% for men and 65.46% for women. The large proportion of illiterate females is another reason for the low literacy rate in India.
5. **Poverty:** India suffers from a lot of poverty, which means that many people there do not have enough money. According to 2010 data from the UNDP, 29.8% of the population was living below the poverty line of the country. Poverty has reflected in poor quality of life, hunger, malnutrition, illiteracy and consequent low level of human development.

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UNIT - 7
LAND AND WATER RESOURCES

I. Answer the following questions in a Word or Sentence each:

1. What is meant by land-use pattern?
Ans: Utilization of land for different purpose is known as "land use Pattern".

2. Which state has the highest area under forests in India? 2022
Ans: Madhya Pradesh has the highest area under Forest.

3. What is fallow land?
Ans: The land which is not utilized for cultivation for last 3 to 5 years is considered as fallow land.

4. What is the land capability?
Ans: Land capability is the ability of a piece of land to provide sustainable support for specific land use.

5. Mention the main source of surface water resources.
Ans: The surface water resources are Rainfall, Rivers, Tanks and Springs.

6. What is irrigation? 2015, 2018(S), 2019, 2020
Ans: It is an artificial supplying of water to the crops or plants or on art of supplying water to the crops.

7. What is Well irrigation?
Ans: Supplying of water from shallow ground to the surface is called Well Irrigation.

8. What is canal irrigation?
Ans: It is a type of irrigation in which water is drawn from rivers, tanks and reservoirs to supply water for agriculture.

9. What is the state in India has the highest irrigated land?
Ans: Uttar Pradesh has the highest irrigated land in India.

10. What is tank irrigation?
Ans: Manmade hollows which collects the rain water is and supplies the water in summer seasons called tank irrigation.

11. What is sprinkler irrigation?
Ans: The spraying of water to the crops through the pipe with nozzles under great pressure is called Sprinkler irrigation.

12. What is drip irrigation?
Ans: Supplying of water through network of pipes drop by drop nearest to the roots is called as drip irrigation.

13. Define the multi-purpose river valley project?
Ans: River valley projects which provide multiple benefits are known as multipurpose river valley projects.

14. Which is the first multi-purpose river valley project of India?
Ans: Damodar valley project on 18th Feb 1948 is the first project in India.

15. Across which river Bhakra Nangal dam is constructed? 2015, 2018
Ans: Bhakra Nangal dam is constructed on Sutlej River.

16. What is the name of Bhakra reservoir? 2022
Ans: Govinda Sagara is the name of Bhakra reservoir.

17. What is meant by water conservation?
Ans: Protection and preservation of water for the future purposes is known as water conservation.

18. Define watershed.
Ans: The land area from which water flows towards a common water resource in natural basin is called watershed.

19. Which is the longest dam in India? 2017

Ans: Hirakud Dam the length is 4810m on Mahanadi River.

II. Answer the following questions in two to three Sentences each:

20. What are the main physical features determine the land-use pattern?

Ans: Land use is determined by many factors like:

- Relief features
- Climate
- Soil
- Density of population

21. Mention any four reasons need for irrigation in India.

Ans:

- Nature of rainfall
- Nature of soil
- Probability of draught
- Need of irrigation in dry areas

22. What are the main sources of irrigation in India?

Ans: Wells and tube wells, canals and tank irrigation are the major sources of irrigation in the country.

23. Distinguish between Inundation and perennial canals system. 2018

Ans:

Inundation canals	Perennial canals
Canals are taken out directly from rivers without making any barrage or dam.	Canals are taken out from the reservoirs by constructing barrage.

24. What is tank irrigation? Mention its inherent draw backs of tank irrigation.

Ans: Tanks are natural or manmade hollows in which rain water is collected.

1. Tanks get silted up soon.
2. Most of the tanks are non-perennial and become dry during winter and summer season.

25. Mention major objectives of multipurpose river valley project.

Ans: Major objectives of Multipurpose river valley projects are:

1. Providing Irrigation.
2. Generation of hydroelectricity.
3. Flood control.
4. Soil conservation.
5. Afforestation.
6. Dirking water.
7. Navigation.
8. Pisciculture.
9. Recreation.
10. Preservation of wild life.
11. Employment for inhabitants.
12. Fodder for animals and employment for inhabit.

26. What is conservation? Give examples.

Ans: Protection and preservation of water is called Conservation.

- Reducing run-off losses.
- Reduction of irrigation losses.
- Generating hydro-electricity.
- Prevention of wastage of water.

27. What is watershed management?

Ans: The rational utilization of land and water resources for optimum production.

28. Mention the main objectives of rain water harvesting.

Ans: Following are the main objectives of rain water harvesting.

1. It checks the runoff water and avoids flooding.
2. It replenishes the ground water and enables the wells.
3. It helps to overcome the inadequacy of surface water to meet demand of water.
4. If the ground water happens to be brackish, it will reduce the salinity.
5. It also reduces ground water contamination and improves water quality.
6. It helps to increase agricultural production and improves ecology of an area.

29. Mention the techniques of rain water harvesting.

Ans: Techniques of rain water harvesting:

1. **Infiltration Pits:** the rain water can be collected and stored in pits, dug in farm lands and used for irrigation. It can also help to raise the ground water.
2. **Contour bunds and trenches:** the construction of bunds, trenches or check dams on small rivulets is a simple and cheap method of rain water harvesting.

3. **Roof top water harvesting:** the rain water that falls on the roofs of building or in courtyards is collected and stored in underground sumps, or wells or in drums and used for domestic purpose such as cleaning and washing etc.

30. Mention the need of watershed management.

Ans: In recent years watersheds of India are degraded due to several reasons i.e. unscientific land use, overgrazing, deforestation, mining, shifting cultivation, soil erosion etc. this will result in the depletion of water resources. Thus, watershed management is extremely necessary for regular supply of water.

31. Mention the benefits of rain water harvesting.

Ans:
1. It involves collection and storage of rain water at surface or in sub surface aquifer before it is lost as surface run off.
2. It is not increase water availability but also check the declining water table.

III. Answer the following questions in 30 to 35 Sentences each:

32. Explain different land-use pattern in India. 2018, 2019(S), 2020, 2022

Ans: The layout or arrangement of the uses of the land is known as Land Use Pattern. Out of India's total geographical area of 328.7 million hectares, the statistical information about the land use pattern in India is available for only about 305.69 million hectares. It is based on village papers and on estimates. The important types of land use in the country are:

1. Forest Area.
2. Cultivable waste land.
3. Land not available for cultivation.
4. Fallow land
5. Net area sown.

1. **Forest Area:** There are under forest was only 14.2% in 1950-51. But it has increased to 22.8% in 2009-10. According to National Forest Policy 1952 reporting area of the forest must be 33.3% of the total land. The proportion of the forest area is not evenly distributed in the country. Madhya Pradesh, Arunachal Pradesh, Odisha, Maharashtra, Andhra Pradesh, Andaman Nicobar islands are reporting more area under forest. In contrast Dadra and Nagar Haveli, Haryana, Punjab and Goa states have less area under forests.
2. **Land not available for cultivation:** the land used for human settlements, transport routes, canals, quarries the mountains, deserts; marshes etc. are coming under this category. It accounts 14.2% of the total land in India.
3. **Other uncultivated lands including Cultivable waste land:** This category includes permanent pasture and other grazing area, land under miscellaneous tree crops, groves and cultivable waste. This category covers about 8.6% of the country's total reporting land. This kind of land reported high in the states of Rajasthan, Himachal Pradesh and Madhya Pradesh.
4. **Fallow Lands:** the land witch is not utilized for cultivation for last 3 to 5 years is considered as follow land. It may be cultivated. It accounts for about 8.13% of the India's total land.
5. **Net area Sown:** India has a net sown area of 46.2% of the total reporting land in India. There has been a phenomenal increase in the net area sown during the last five decades. It has been increased from 118.5 million hect (1950-51) to 141.36 million hect (2008-09).high in Punjab 84.32% very less in Arunachal Pradesh 3.61%.

33. Discuss the importance of land capability.

Ans: Land capability is the ability of a piece of land to sustainable support a specific land use. It refers to assess the appropriate uses of various types of land.

1. Land capability is based on the understanding that every components of land has its own particular capacity to provide ecosystem services. It also propounds that a significant proportion of this capacity is required to maintain soil and land health.
2. Land capability does not include social or economic components. It focuses entirely on requirements for sustainability of the ecosystem.
3. After the assessment of land capability, there is the requirement to overlay this with the social and economic constraints.
4. Land capability is the inherent physical capacity of the land to sustain a range of land uses and management practices in long term without degradation of soil, air, and water resources.

5. If land is used beyond its capacity degradation is the consequence, which leads to a decline in natural ecosystem values, agricultural productivity and infrastructure functionality.

34. Explain about water resources in India.

Ans: India is endowed with substantial water resources. It has a large number of rivers and gets sufficient rainfall. It also has vast reserves of groundwater. But their occurrence varies greatly. Water resources can be divided into surface water resources and groundwater resources

1. **Surface water resource**: are rainfall, rivers, lakes, tanks and springs. The most important sources of surface water are Rainfall. The average annual rainfall in India is 118cm. However the rainfall is not evenly distributed all over the country. The second important source of surface water is the rivers. The average runoff in the river system of the country has been assessed at 1869 billion cubic meter(BCM) of which the amount that can be utilized is estimated to be about 1122 BCM Surface water 690BCM and ground water 433BCM.
2. **Ground water resource:** the water that percolates into the soil and accumulates below the surface of the earth is called Ground Water. The total replenishable ground water resources of the country have been estimated at 433 BCM. Of this about 40% is found in the Ganga Basin which as the highest potential in the country.

35. Explain the distribution of wells and tube wells irrigation in India.

Ans: The largest concentration of wells is in the Gangetic plains stretching from Punjab to Bihar. In Gujarat wells and tube wells irrigate 78.8%. While Rajasthan, utter Pradesh, Maharashtra, Punjab, Madhya Pradesh etc. have more than 50% of their net respective irrigated area under well irrigation.

Wells and tube wells are presently most popular source of irrigation in India accounting for 60.7% of the total irrigated area. Digging of tube wells started in 1930s in the Ganga Plains under minor irrigation programmes during five year plans. There are more than 45 lakh tube wells in government and private ownership. The % of area under tube well irrigation in India is 35.6% which is highest in Uttar Pradesh 77.5%, Followed by Punjab 67.3%. Bihar 46.1%, etc.

Tube well and wells accounted for 5.97 million hectare of net irrigated area in 1950-51 which increased to 37.8 million hectares in 2007-08.

36. What is irrigation? Explain its significance in India. 2017

Ans: "It is an artificial means of watering the crops or plants or an art of supplying water to the crops". Irrigation becomes necessary on account of the following reasons.

1. **Nature of Rainfall:** Due to irregular, uncertain and limited rainfall, scarcity of water is caused. Sometimes, it can rain heavily and for a long duration, whereas sometimes it can be light and for a short duration. Consequently, the need for irrigation arises.
2. **Nature of Soil:** There is greater need of irrigation in sandy soil whereas in clay or alluvial soil, the need for irrigation is limited.
3. **Probability of Drought:** At places of droughts irrigation is essential.
4. **Need of Irrigation in Dry Areas:** In dry areas, where rainfall is less than 40 to 50 cm per year, the need arises for irrigation.
5. **More Need of Water for Special Crops:** Crops like rice, jute, sugarcane, etc. need more water, which can be fulfilled only through irrigation.
6. **More Need of Water for Improved Seed Varieties:** New and high yielding varieties of seeds need additional and regular water through irrigation for higher productivity. This was felt after the green revolution.
7. **For Pasture Development:** Along with agriculture, it is essential to develop pastures for cattle and dairy development, which also needs water.
8. **Increase of Population:** Population of India is multiplying fast, and it needs additional food production. This can be possible only through irrigation.

37. Explain the canal irrigation in India. 2015(S)

Ans: India has one of the largest canal systems of the world. Canals are the second largest source of irrigation in the country, irrigating about 31% of the net irrigated area of the country. Canals accounted for 8.3 million hectares of net irrigated area during 1950-51 which has increased to 16.6 million hectares during 2007-08.

Canals are two types they are:

1. **Inundation canals:** taken out directly from rivers, without making any barrage or dam which remains operational during rainy season.
2. **Perennial canals:** which are taken out from the reservoirs by constructing barrage or weir to regulate the flow of water.

Canal irrigation is widely practiced in the Sutlej-Gangs plains and the deltas of the peninsular rivers. Nearly 79% of the India's canals irrigated are lies in Utter Pradesh (first rank in Canal Irrigation.), Rajasthan, Andhra Pradesh, Haryana, Punjab, Madhya Pradesh, Karnataka, Maharashtra, Odisha and Bihar.

38. Discuss the present situation of Tank irrigation in India. 2016

Ans: Tanks are natural or man-made hollows or depressions into which rain water is collected. Usually they are built by individual or groups of farmers by raising bunds across seasonal streams.

Tank irrigation is widely practiced in Andhra Pradesh, Tamil Nadu and Karnataka states, these are occupied first three places respectively and accounts for 66% of the total irrigated under tank irrigation in the country.

But the area under tank irrigation has decreased in recent years due to some draw backs. The area under tank irrigation decreased from 4.6 million hectares in 1960-61 to 1.56millions hectares in 2007-08. It accounts for only 3.2% of the total irrigated area in India.

Tank irrigation is suffering from certain inherent drawbacks:

1. Tanks get silted up soon.
2. Most of the tanks are non-perennial and become dry during winter and summer seasons when water is urgently required.
3. They occupy large fertile areas which could have been used for cultivation.

39. Explain the development and distribution of sprinkler and drip irrigation in India.

Ans:

1. **Sprinkler Irrigation:** The spraying of water to the crops through the pipe with nozzles under great pressure is called 'Sprinkler Irrigation'. In this method water consumption is less but it provides more moisture to the plants. The adoption of this system is more expensive. It is more popular in Punjab, Haryana, Rajasthan, Karnataka and Gujarat
2. **Drip Irrigation:** a newly developed irrigation system, originally developed in Israel, is become popular in areas of water scarcity. This source of irrigation was introduced in India in the 1970's. But it is only recently that it has made significant development. In 2005 the area under drip irrigation was 6.3 lakh hectares. In this system a small amount of water passé through pipe falls drop by drop just at the position of roots or a limited area around the plants. Drip irrigation practiced in Rajasthan, Maharashtra, Karnataka and Tamil Nadu.

40. What is multipurpose river valley project? Explains its importance in India.

Ans: River valley projects which provide multiple benefits are known as Multipurpose River Valley Projects.

Major objectives of Multipurpose river valley projects are:

1. Providing Irrigation
2. Generation of hydro electricity
3. Flood control
4. Soil conservation
5. Afforestation
6. Dirking water
7. Navigation
8. Pisciculture
9. Recreation
10. Preservation of wild life
11. Employment for inhabitants
12. Fodder for animals and employment for inhabit

41. Discuss the important features and aims of Damodar valley project. 2016(S), 2017(S), 2018(S), 2022

Ans: Damodar is tributary of the Hoogly river. It was known as The Sorrow of Bengal, because of its floods in the past. This is the first and most important multipurpose river valley project of India. Damodar valley corporation was established on 18th Feb 1948.

The main aims of the project are flood control, promotion of irrigation, generating hydroelectricity, navigation, afforestation; prevent soil erosion, inland fishing and recreation facilities. This project has been jointly undertaken by the government of West Bengal and Bihar. It comprises the four dams, three Hydel Power Stations one barrage and three thermal stations.

1. **Tilaiya Dam:** this dam has been constructed on Barakar River, a tributary of Damodar. Its gross storage capacity is 395 million cubic meters. It has two power stations of 200kw each have been setup here. This dam provides irrigation facilities to 40,000 hectares.
2. **Konar Dam:** it has been constructed on Konar River, another tributary of Damodar. In Hazaribagh District of Jharkhand. Its gross capcity is 337 million cubic meters. This dam provides irrigation facilities to 1.4 lakh hectares.
3. **Mithon Dam:** it has been constructed on Barakar River, a little upstream from the confluence of river Damodar and Barakar. Its storage capacity is 1,357 million cubic meters. There are three hydroelectricity power units with installed capacity of 60mw.
4. **Panchet Hill Dam:** it has been constructed on the river Damoder. Its gross capacity is 1,497 million cubic meters. It has an installed capacity of 40mw and it irrigates about 2.8 lakh hectares of agricultural land.
5. **Durgapur Barrage:** this barrage is located at about 23 km from Raniganj. The water received from storage dams is distributed for irrigation through the network of 2,495km long canals. They irrigate 4.75 lakh hectares in West Bengal.

42. Write a note on Bhakra-Nangal project. 2015, 2019

Ans: The Bhakra-Nangal project is a joint venture of Punjab, Haryana and Rajasthan and has been named after the two dams constructed at Bhakra and Nangal on the Sutlej river in Himachal Pradesh.

Main objectives: Flood control, irrigation facilities, hydel power generation, promotes afforestation and soil conservation is the main objectives of the project.

1. **The Bhakra dam** is constructed across the Sutlej river at Bhakra in Himachal Pradesh. It is 518 meters long and 226 meters high. The reservoir created by the Bhakra dam covers an area of 17.8km^2 and has gross storage capacity of 9.867million cubic meters. This reservoir is called th 'Gobindsagar'. The Bhakra system commands a gross area of 27.4 lakh hectares.
2. **Nangal Dam** is constructed across the Sutlej river at Nangal. 13kms below the Bhakra dam. It serves as a balancing reservoir and directs the river water into the 64km long. The Nangal Canal irrigates 26.4lakh hectares of land in Haryana and 50.2 lakh hectares of land in Punjab. There are four power stations with a total capacity of 1,204mw. Two of these are situated on either side of the Bhakra dam and other two on Nangal canal.

43. Explain the main objectives and importance of Hirakud project.

Ans: It is an ambitious multipurpose river valley project in Odisha, planned for harnessing the waters of Mahanadi river. Three dams have been constructed across the Mahanadi at different places. The 4801mt long and 61-meter-high dam has been constructed it is the longest dam in India. It forms 650km^2 reservoir. Its gross storage capacity of 810 crore cubic meters of water. It irrigates 2.54 lakh hectares.

The project has two hydroelectricity power stations with an installed capacity of 270mw. The second and third dams are constructed ate Tikarapara and Naraj respectively. Some more dams will be the tributaries of Mahanadi such as Ib, mand and Tel.

The Mahanadi Delta Irrigation scheme can provide irrigation for 6.84lakh hectares. The second dam Tikarapara comprises of a power house with 16 units of 125mw each. The third one comprise of 1353km and 386.2km long canals with irrigation potential of 5.4lakh hectares. Chief aims of this projects are:

The main aims of the project are flood control, promotion of irrigation, generating hydroelectricity, navigation, afforestation; prevent soil erosion, inland fishing and recreation facilities.

44. Explain the main features and importance of Upper Krishna Project. 2017, 2020

Ans: This is the biggest multipurpose project in North Karnataka across the river Krishna. It comprises two dams namely; Alamatti dam in Alamatti village in Basavana Bagevadi taluk and Narayanapura dam is located near Siddapur village in Muddebihal taluk of Bijapur district. Alamatti dam is 1,578mt long and its height is 47.8mt and capacity of 5,295mcum. The Narayanapura da is 10,637mt long and 29.7mt highand storage capacity is 1,066mcum.

The total irrigation potential of the UKP is about 6.22lakh hectares of land in Bagalkot, Bujapur Belgaum, Yadgir, Gulbarga Raichuru districts in Karnataka. The project also includes 6 units of power generation at Alamatti having a total installed capacity of 268mw.

45. Discuss the water conservation and management.

Ans: Water conservation refers to the action taken to use water efficiently. It involves controlling, protecting, managing and planning for the wise use of our scarce water resources.

The following strategies can be adopted for conservation of water.

1. **Reducing Run-off Losses:** a large amount of water loss occurs due to run-off. This can be reduced by allowing most of the water to infiltrate into the soil. It can be achieved by using contour cultivation, terrace farming, mulching, and water storage structures like farm ponds etc.
2. **Reduction of Irrigation Losses:** it can be reduced by drip and sprinkler irrigation, use of lined or covered canals to reduce seepage, irrigation in early morning or late evening and growing hybrid crop varieties with less water requirements.
3. **Re-use of Water:** the treated waste water can be used for watering gardens, washing vehicles and floors of the building. It helps in saving fresh water.
4. **Prevention of Wastage of Water:** this can be done in households, commercial buildings and public places. Preventing by closing taps when not in use, repairing any leakage from pipes and using small capacity flush in toilets.

46. Explain the importance of watershed management in India.

Ans: **Meaning:** The land area from which water flows toward a common water course in natural basin is called 'watershed'. It is the delineating boundary of river basin.

Importance of Watershed Management: watersheds are the source of rivers which supply water for irrigation, generating hydroelectricity, domestic use, inland water ways etc.

Meaning of watershed Management: the rational utilization of land and water resources for optimum production that causes minimum damage to the natural resources. It is an integrated developmental approach of an area in order to improve the quality of life of dwellers within it.

Need of Watershed Management: in recent years watersheds of India are degraded due to several reasons i.e., unscientific land use, overgrazing, deforestation, mining, shifting cultivation, soil erosion etc. this will result in the depletion of water resources. Thus watershed management is extremely necessary for regular supply of water and economy of nation.

Methods of Watershed Management:

1. **Water Harvesting:** proper storage of water is done with provision for use in dry season in low rainfall areas.
2. **Afforestation and Agroforestry:** they help to prevent soil erosion and retention of moisture.
3. **Scientific Mining and Quarrying:** these can minimize the destructive affects in water shed areas.
4. **Mechanical Measures:** this includes terracing, bundling, bench terracing, counter cropping, strip cropping etc. are used to reduce the soil erosion on the slopes of water sheds.
5. **Public participation:** the involvement of local people including farmers and tribal's is essential to the success of water shed management programme.

47. What is Rain water harvesting? Explain the purpose and methods of rain water harvesting. 2015, 2015(S), 2016, 2016(S), 2018(S), 2019(S)

Ans: The collection and storage of rain water used for human, animal and plant's needs. It involves collection and storage of rain water or in sub-surface aquifer, before it is lost as surface run off.

Following are the main objectives of rain water harvesting.

1. It checks the runoff water and avoids flooding.
2. It replenishes the ground water and enables the wells.
3. It helps to overcome the inadequacy of surface water to meet demand of water.
4. If the ground water happens to be brackish, it will reduce the salinity.
5. It also reduces ground water contamination and improves water quality.
6. It helps to increase agricultural production and improves ecology of an area.

Methods of Rain Water Harvesting: there are two methods for rain water harvesting. They are:

1. In-Situ Rain Water Method.
2. Ex-Situ Rain Water Method.

1. **In-Situ Method:** the method percolating the rain at the point of its fall itself is called in-situ rain water harvesting method. This can be done in many ways.

a) **Infiltration Pits:** the method rain water can be collected and stored in pits, dug in farm lands and used for irrigation. It can also help to raise the ground water.

b) **Counter Bunds and Trenches:** the construction of bunds, trenches or check dams on small rivulets is a simple and cheap method of rain water harvesting.
c) **Roof top Rain Water Harvesting:** the rain water that falls on the roofs of building or in courtyards is collected and stored in underground sumps, or wells or in drums and used for domestic purpose such as cleaning, washing etc.

2. **Ex-Situ Rain Water Harvesting Method:** This method of rain water harvesting involves storing of running water. It is collected in check dams, huge percolation tanks etc. it is an expensive method.

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UNIT- 8
AGRICULTURE

I. Answer the following questions in a Word or Sentence each:

1. What is agriculture?

Ans: Agriculture is an art of tilling and cultivating soil for the purpose of rising crops.

2. What is subsistence farming?

Ans: The production of crops for the purpose of domestic consumption and for commercial use is called "subsistence farming"

3. Define Migratory farming?

Ans: It is practiced by tribal people. Under these system formers clears the patches of forests to grow the crops, later people migrated to another part of forests to their activities like cultivation of crops, hunting and fishing.

4. What is Green Revolution? 2015(S)

Ans: Increase in food production through the introduction of high yield crop varieties and application of modern agricultural techniques is called 'Green Revolution'.

5. Which Crop is suitable to dry farming?

Ans: Jowar, Bajra, Ragi, Oilseeds crops are suitable to dry farming.

6. What is tissue culture?

Ans: The growing of a cell or tissue or an organ in an artificial, aseptic and nutritive medium is called "Tissue culture".

7. Define Organic Farming. 2019, 2019(S)

Ans: Organic farming is the form of Agriculture that uses green manure, compost and biological pest control, chemical fertilizers and pesticides etc are not used farming.

8. Which state is the Largest producer of vegetable?

Ans: West Bengal(15%) is the largest producer of Vegetable.

9. Which is the King of Spices?

Ans: Black Pepper is the king of Spices.

10. Which state is the largest producer of rice? 2016(S)

Ans: West Bengal.

11. What do you mean by Catch Crops?

Ans: In areas supported by the Irrigation vegetables can grow 3 to 4 crops in a year. This source of income is called "Catch Crops".

12. Which state is the Largest producer of Sugarcane? 2017

Ans: Utter Pradesh.

13. What do you mean by Food Crops?

Ans: The crops which are grown to provide the basic and essential food for people are known as 'Food Crops'.

14. Which state is popular for the production of Basmati rice in India? 2015, 2018(S), 2022

Ans: Punjab state is popular for the production of Basmati rice in India.

15. Define the plantation crops.

Ans: The crops which are grown on plantations covering large estates are known as 'Plantation crops'.

16. What is rationing system?

Ans: It is one of popular method of sugarcane cultivation. In which growing of second crop from the roots of the first crop can be called as Rationing.

17. What is commercial crop?

Ans: The crops which are grown for sale either in raw material or in semi processed form are known as 'commercial crops' or 'cash crops'.

18. Mention two important beverage crops of India. 2016, 2017(S), 2022

Ans: Coffee and Tea are the important crops of India.

19. Which state is the Largest producer of Coffee in India? 2015(S), 2018

Ans: Karnataka.

20. What are the types of Tea?

Ans:
1. Black or fermented tea,
2. Green tea or unfermented tea and
3. Oolong tea.

II. Answer the following questions in two to three Sentences each:

21. Mention the different names of migration farming in India.

Ans: Different names of migration farming in India are Jhumming in Assam, Koman in Odisha, Ponam in Kerala and Podu in Andhra Pradesh.

22. What is mixed farming? When it has been introduced in India

Ans: Farming that includes the raising of crops and keeping of livestock is called "Mixing Farming".

23. What are Aus, Aman and Boro? 2022

Ans:
1. **Aus or autumn rice:** is sown in May-June and harvested in September-October.
2. **Aman or winter rice:** is sown in June-July and harvested in November – December.
3. **Boro or Summer rice:** is sown in November-December and harvested in march April

24. Explain the lowland rice?

Ans: Lowland rice is grown in the lowlands or marshy areas. It is more important. It is grown by transplanting use of irrigation and in densely populated lowland.

25. Why Wheat is grown as Rabi crop?

Ans: Wheat is grown in Rabi because:
1. **Wheat is basically Rabi crop.**
2. **It requires moderate temperature and Rain fall.**
3. **It thrives well in the areas receiving annual rainfall of about 50 to 75cm**.

26. Name the varieties of wheat in India. 2015, 2017(S)

Ans: Varieties of Wheat in India are:
1. **Bread Wheat.**
2. **Macaroni Wheat.**
3. **Emmer Wheat.**
4. **Indian Dwarf Wheat.**

27. What are the uses of Sugarcane?

Ans: Uses of Sugarcane are:
1. Sugar Cane is the main source of Sugar, Gur and Khandsari
2. It provides raw materials for making Alcohol.
3. The sugar is used for making Sweets, Beverages, Syrups, Medicine etc.
4. Crushed materials of sugarcane and its leaves used as fuel. Also preparation of fertilizers.
5. A part of Sugarcane used for fodder for animals.

28. Black soil is quite suitable for cotton cultivation, why? 2017, 2019(S)

Ans: Black soil is suitable for cotton cultivation because:
1. This soil is capable of retaining moisture to the crops.
2. It keeps the Moisture for the long time.

29. Why tea is considered a labour-intensive crop?

Ans: It requires abundant cheap and skilled labour for Pruning, Plucking, processing and packing purpose. Therefore, it is called labour intensive crop

30. Explain the coffee Robusta.

Ans: It is the poor in quality and but high yield variety. It can resist the pest and diseases. About 68.9% of Indian Coffee production and 5.1% of the area was Coffee Robusta.

III. Answer the following questions in 30 to 35 Sentences each:

31. Explain the importance of Agriculture in India. 2015(S)

Ans: Agriculture is the most important primary activity and the oldest occupation of human beings in India. The importance of agriculture and its influence can be seen from the following facts.

1. **Main Source of Livelihood:** About 70% of the people directly and indirectly depend on agriculture for their livelihood.
2. **Food Supply:** Agriculture provides food grains, fruits, vegetables, spices etc to the people and fodder for domestic animals.
3. **Provides Employment Facilities:** Agriculture is the largest sector providing highest employment.
4. **Source of National Income:** It contributes to the National income of the country.
5. **Source of Raw Materials:** It also provides raw materials for many industries. Such industries are called as Argo-based Industries. Eg: cotton textile, sugar, Jute textile, etc.
6. **Source of Revenue:** Agriculture provides a large amount of revenue to the state and central Governments. But Indian agriculture is largely depending on monsoon rains. So, it has been remarked that 'Indian budget is a gamble with the monsoons.
7. **Support to Tertiary Sector:** Agriculture is mainly contributing to the progress of transport and communication, banking, insurance, etc.
8. **Help to Internal Trade:** Agricultural product varies from one region to another in India. Agricultural products are transported from the area of surplus production to the area of scarcity, through internal trade. eg- Cotton, Jute, Tea, Coffee etc.
9. **Support to Export:** Many agricultural products produced in the country, are exported. ie, tea, coffee, jute, tobacco, sugar, spices, etc.
10. **Political and Social Importance:** The political and social situation in the country is determined by the agricultural population as well as production to a maximum extent.

32. What is Intensive Farming? Explain its main characteristics. 2016(S), 2022

Ans: It is found in the area of dense population and land holdings are small. In this type of farming land in intensively used and 2-3 harvests are obtained in a year. It is known as "Intensive Farming."

Main characteristics of Intensive Farming are :

1. It is a labour and capital intensive farming.
2. It require large amount of labour and capital on small land holding to get maximum production of crops.
3. The available small land is used for cultivation with irrigation facility thought the year.
4. In this system farmers try to raise two or more crops, with careful tilling of the soil.
5. It is characterised by high yields per unit area and farmers try to get the maximum production from small land holdings.
6. It is common in the fertile and irrigated parts of the country.
7. In this type agriculture operations are carried on by manual and draught animals.
8. Rice is the main crop of intensive farming in India.

33. Explain the chief advantages of Plant Tissue Culture.

Ans: The growing of a cell or tissue or an organ in an artificial, aseptic and nutritive medium is called "Tissue culture".

1. Rapid multiplication means thousands of plants can be produced within a year starting from a single explant.
2. Freedom from pests and pathogens. It refers to the production of disease- free plants and production of disease and pest-resistant plants.
3. Economy of space and resources, that thousands of plants can be raised in a few square metres of laboratory space.
4. Round the year multiplication as per demand.

5. Easy transport due to miniaturization.
6. Selective multiplication of desired plants.

34. What is Green revolution? Write a note on demerits of Green Revolution. 2018, 2019(S), 2022

Ans: Increase in food production through the introduction of high yield crop varieties and application of modern agricultural techniques is called 'Green Revolution'.

Merits of Green Revolution:

1. Increase in agricultural production and yield per hectare.
2. Prosperity to farmers: this includes their economic situation improving, even small and marginal farmers. It is due to increase of farm production and more earnings.
3. Better land use by employing two or three copings.
4. Better scientific methods applied as per requirement of farms.
5. New seeds have been developed with better yield and disease fighting capability.
6. Reduction of imports of food grains.
7. Improves country's economic development.
8. Indirectly it has helped the growth of agro-based industries.
9. Effects on rural employment, it increases in trade and change the attitude of the farmers.

Demerits of Green Revolution:

1. Rapid multiplication means thousands of plants can be produced within a year starting from a single plant.
2. Freedom from pets and pathogens. It refers to the production of disease free plants and production of disease and pets free plants.
3. Economy space and resources, that thousands of plants can be raised in a few square meters of laboratory space.
4. Round the year multiplication as per demand.
5. Easy transport due to miniaturization.
6. Selective multiplication of desired plants.

35. What is Horticulture? Explain its development in India. 2018(S)

Ans: The word 'Horticulture' is the compound word of two Latin words "Hortus" means GARDEN and "Colere" means CULTIVATE. "the art of systematic growing of fruits, vegetables, flowers, spices, plantation crops, medicinal and aromatic plants in small plots is called Horticulture". Even till today, the income from the Horticulture crops has been more profitable than the income from the agriculture crops. therefore in recent years special emphasis is given for growing Horticulture crops in India

Development in India: in India geographical as well as socio-economic factors are ideal for the development of Horticulture. It has good potential for growing a wide verity of Horticultural crops. The government of India identified Horticultural crops as a means of diversification for making agriculture more profitable.

There has been an improvement in the adaptation of technology for increase in the production of horticulture crops. Today in India has emerged as an important producer of horticultural crops. India is second largest producer of fruits and vegetables in the world next to China. India producer of 257.3 million tonnes of horticulture products from 23.2 million hectares. This is due to more demand and importance that is poured on the horticultural produce. This rapid development of horticultural sector is called "Golden revolution".

36. Give an account on Floriculture in India.

Ans: "Cultivation of different types of flowers for commercial purpose is known as floriculture". Though flower cultivation has been practiced in India since time immemorial, floriculture has blossom into a profitable business only in the recent years. India's agro climate conditions are very suitable for the cultivation of high quality flowers. The rapidly growing world market for flowers is holding out adequate inducement for India to expand its production and export of flowers.

Floriculture has a significant role to play in India for the following reasons:

1. It has a capability to elevate the income of the farmers.
2. It engages even the women in this farming and eradicates unemployment to rural people.
3. It supports to the export of the country.

Considering the potentiality of this sector produces an income and employment opportunities, floriculture has been taken up by the Government of India.

India has been known for growing traditional flowers such as Jasmine, Marigold, Chrysanthemum, tuberose, Crossandra and Aster. These important flower cultivation is occupied about two third of the total floriculture area.

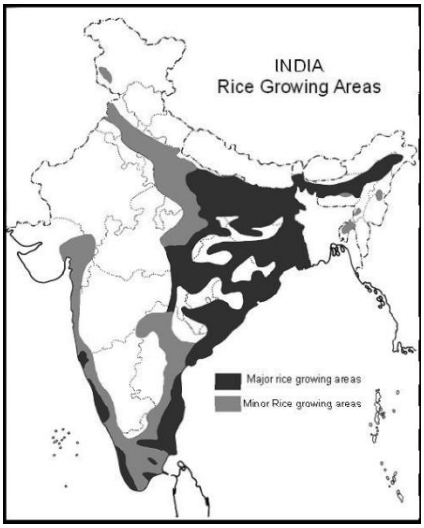
Commercial cultivation of cut flowers like Rose, Orchid, Gladiolus, Carnation, Gerbera, lilium and anthurium has become popular in recent years.

37. Give an account of the production and distribution of Rice in India. 2015, 2017(S), 2018(S), 2020

Ans: Rice is the most important food crop of India. Nearly three-fourth of the people in the country subsist on it. Both in term of area and production rice ranks first among the crops cultivated in India.

Rice cultivation is widely distributed in India. Rice is grown almost all states of India some of them are leading in the production of rice i.e. West Bengal, Utter Pradesh, Andhra Pradesh, and Punjab. These states together contribute about 41.76% of area and 50.14% of the country's rice production.

1. **West Bengal:** west Bengal is the largest producer of rice in India. About three fourth of the total states cropped area is under the rice cultivation. It producing 14.2% of rice under total production of rice in India.



2. **Utter Pradesh:** this is second largest producer of Rice in India. It produces 13.44% rice under total production of rice in India.
3. **Andhra Pradesh:** it is the third largest rice producer in India. It produces 12.35% rice under total production of rice in India.

Distribution of rice in India:

4. **Punjab:** it is the fourth largest rice producer in India. It produces 10.11% rice under total production of rice in India.
5. **Bihar:** it is the fifth leading rice producer in India. It produces 6.90% rice under total production of rice in India.
6. **TamilNadu:** it is the sixth leading rice producer in India. It produces 6.61% rice under total production of rice in India.
7. **Chhattisgarh:** it is the seventh important rice producer in India. It produces 5.78% rice under total production of rice in India.
8. **Karnataka:** it has rapid progress in rice cultivation during last few years. Its production is 3.87% under total production of rice in India.
9. **Others:** 21.12% is produced from Assam, Maharashtra are the other rice producers in India.

Production: It accounts for 35% of the total cropped area under food grains and 34% of the total cropped area. India is the second largest producer of rice in the world. India was produced 104.3million tonnes of rice in 2011-12 under 43.97million hectares.it accounts for 22% of the world's productions. Now India is self-sufficient in rice production.

38. Explain the conditions required for growth of whet and methods used for wheat cultivation in India.

Ans: Wheat ranks second in terms of area and production after rice in India. About 19.7% of the total cropped area of the country under wheat cultivation.

Conditions for Growth:

1. Wheat is basically temperate crop. It is one of the RABI crops in India.
2. It requires moderate temperature and rainfall. It requires temperature of 10^0C during vegetative period and 15^0Cat the of ripening.
3. Wheat thrives in well in areas receiving an annual rainfall of about 50 to 75cm.
4. Wheat can grow in variety of soils. But thrives best in black and heavy loams soil. It also grown in alluvial soil.
5. Light drizzles and cloudiness at the time of ripening help to the better yield.
6. Frost at flowing time and hail storm at the time of ripening is harmful to the crop.

Varieties of Wheat in India are:

1. **Bread Wheat.**
2. **Macaroni Wheat.**
3. **Emmer Wheat.**

4. **Indian Dwarf Wheat.**

Methods used for wheat cultivation in India:

1. **Broadcasting Method:** Scattering of seeds in the prepared hand is called broadcasting method.
2. **Drilling Method:** dropping of seeds into the soil is called drilling method.
3. **Dibbling method:** sowing of seeds by hand in ploughed furrows is known as dibbling method.

39. Give an account of the production and distribution of Sugarcane in India. 2016, 2019(S)

Ans: Sugarcane belongs to grass family and it was originally found in India. It grows to height of 3.5mtrs. Sugarcane has a hard and thick steam which contains sucrose.

Distribution: the distribution of Sugarcane cultivation in India is uneven. Sugarcane is grown almost in all the states of the country. But it is mainly concentrated in Utter Pradesh, Maharashtra, Tamil Nadu, Karnataka, Andhra Pradesh, Gujarat, Bihar, Haryana and Uttaranchal. These states accounts for about 95.13% of the total area and about 96.55% of the total Sugarcane production in the country.

1. **Utter Pradesh:** it occupies first place both in terms of production and area under sugarcane in the country. It shares about 36.02% under total production of India.
2. **Maharashtra:** it is in second place both in terms of production and area under sugarcane in the country. It share is about 22.89% under total production.
3. **Tamil Nadu:** is the third largest producer of sugarcane in India. It has highest yield per hectare (102.8tonnes) in India.
4. **Karnataka:** is the fourth largest sugarcane producing state in India. It shares about 10.85% under total production.
5. **Andhra Pradesh:** it is in fifth place of sugarcane production in India. It share is about 4.68% of total production.
6. **Others:** Gujarat, Bihar, Haryana etc.

Production: India is the second largest producer of sugarcane in the world. The total cultivated area under sugarcane was reported as 4.88 million hectares during 2010-1. This is increased to 5.09 million hectares in 2011-12.the production is also increased from 342.38 million tonnes in 2010-11 to 357.67 million tonnes in 2011-12.

40. Explain the geographical conditions required necessary for the cultivation of Cotton? Explain the verities of cotton. 2015(S), 2016(S), 2020

Ans: India is believed to be the native of cotton plant. It has been cultivated in the country from time immemorial. At present India is one of the leading producers of raw cotton in the world. India has the largest area under cotton cultivation in the world.

Required necessary geographical conditions for cotton cultivation:

1. Cotton is a tropical and sub-tropical crop. It requires high temperature. At the time of growing it requires 21^0C to 24^0C temperature. The growth of cotton is retreated when the temperature falls below 20^0C.
2. It requires moderate rainfall of 50cm to 100cm. however it can cultivate in areas of lesser rainfall with the help of irrigation, about 36% of the total area under cotton cultivation is irrigated in India.
3. Deep black soil is well suitable to cotton crop. This soil is commonly known as Black Cotton Soil. This soil is capable of retaining moisture. It also can be grown in other type of soils.
4. Cotton requires the use of manures and fertilizers, crop rotation helps to maintain fertility of the soil and improve the yield.
5. Cotton cultivation requires large amount of cheap labour for planting, thinning, seeding, picking of cotton and maintaining other activities in the field.
6. Frosting, moist, weather and heavy rainfall are harmful to the crop.
7. Cotton plant is susceptible to disease and pests. So, it requires the use of insecticides and pesticides.

8. The sunny weather is necessary at the time of harvesting the cotton.

On the basis of length of fibre cotton can be divided into three varieties.

1. **Long Staple Cotton:** it is the best quality. It has fibre over 3.8cm in length. Because of its length of fibre, fine and shining it is used for making fine quality of cloths.
2. **Medium Staple Cotton:** the length of cotton fibre is between 2.5cm to 3.8cm is known as medium staple cotton. It is used for making medium quality of cloths.
3. **Short Staple Cotton:** this is inferior variety of fibre length is less than 2.5cm. it is used for making inferior quality of cloth. Stuffing purpose, blending with synthetic fibre etc.

41. Explain the conditions for growth and give reasons for the concentration of coffee cultivation in South India. 2016

Ans: Coffee is the second most important beverage crop in India next only to Tea. The coffee plant was first introduced in India by a Muslim Fakir, BabaBudan Sahib, who brought some seeds from Mecca during the 17^{th} century. And planted the seedlings in the Chandragiri hills now call Bababudan hills in Chikkamagaluru district of Karnataka.

Conditions for growth of Coffee:

1. Coffee is tropical crop, it requires hot and humid climate.
2. It requires high temperature ranging from 15^0C to 30^0C.
3. Rainfall varying from 150 to 200cms is necessary and it should be well distributed thought the year.
4. These plants require shade, because direct sunrays and strong winds are harmful to the coffee plants.
5. Coffee plants require deep fertile soil, humus and nitrogenous contained soils are suitable.
6. Coffee plants are not tolerate frost, above 30^0C of temperature and stagnant of water at their roots. These are harmful to the plant.
7. Hill slopes are suitable for the cultivation of coffee plants to avoid stagnant of water.
8. Dry weather is necessary at the time of ripening of the berries.
9. Use of manures and fertilizers are requires for coffee cultivation.
10. Uses of pesticides and insecticides are very essential, because coffee plant is susceptible to pests and diseases.
11. It requires abundant supply of cheap labour for various operations in process of coffee farming.

Reasons for the concentration of coffee cultivation in South India: Coffee is tropical evergreen plant. It can grow as a tree. But for the purpose of plucking its berries, it is pruned in normal height as a shrub.

The coffee plant was first introduced in India by a Muslim Fakir, BabaBudan Sahib, who brought some seeds from Mecca during the 17^{th} centure. And planted the seedlings in the Chandragiri hills now call Bababudan hills in Chikkamagaluru district of Karnataka. Coffee cultivation started on a large scale by the British rules in 19^{th} century, as a coffee estate in this hills. Then it was spread to the neighbouring districts of Tamil Nadu, Kerala, and other parts of country.

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UNIT - 9
MINERIAL AND POWER RESOURCES

I. Answer the following questions in a Word or Sentence each:

1. Define minerals.

Ans: Minerals are natural substances of organic or inorganic with definite Chemical and Physical properties.

2. What is Ore?

Ans: A naturally occurring solid material from which a matel or valuable mineral can be extracted.

3. What is mining?

Ans: The economic activity through which man is engaged in the production of minerals is called "mining".

4. Which is the best type of iron ore?

Ans: Magnetite is the best type of Iron Ore.

5. Name the metal which is made of Bauxite ore? 2015(S), 2020

Ans: Aluminium is made of Bauxite ore.

6. Which is called as "wonder metal of 20th Century"?

Ans: Aluminium is used for various purposes ranging from spoons to satellites. So it is called "wonder metal of 20th Century"

7. When and where the first gold production was started in India?

Ans: First gold production was started in India is KGF (Kolara Gold Field) during the 1871.

8. Which state is the largest producer of gold in India?

Ans: Karnataka.

9. Which is the largest gold producing state in India?

Ans: Karnataka is the largest gold producing state in India.

10. Name the atomic minerals of India?

Ans: Atomic Minerals of India are:

1. Uranium.
2. Thorium
3. Plutonium.

11. Which mineral is called as Black Diamond? 2015, 2017, 2017(S), 2018(S), 2022

Ans: "Coal" is called as Black Diamond.

12. Which type of coal is the best quality?

Ans: "Anthracite" type of coal is the best quality.

13. Why Jharia is famous for? 2016

Ans: Jharia is one of the oldest and richest coal fields of India. And has been recognized as the "store house of the best MetallurgicalCoal"

14. In which state Talcher coal mine is located?

Ans: Talcher is the important coal field of Odisha.

15. What are the sources of energy?

Ans: On the basis of source and utilization energy resources classified into two types. They are:

1. Conventional Power resources – Coal, crude oil.
2. Non-Conventional Power resources – Solar energy, atomic energy, wind energy

16. Which mineral is known as 'liquid gold'? 2016(S), 2018

Ans: Petroleum.

17. What is solar energy?

Ans: Energy generated by sun rays through the Photovoltaic technology is called solar energy.

18. What is Biogas?

Ans: Generation of energy using cow dung is called Biogas. Exp: Methane, Carbon Dioxide etc.

19. What is Geothermal Energy?

Ans: Geothermal Energy is obtained from the heat generated deep inside the earth.

II. Answer the following questions in two to three Sentences each:

20. Distinguish between Ore and Mineral.

Ans:

Minerals: are natural substances of organic or inorganic with definite Chemical and Physical properties.	**Ore:** A naturally occurring solid material from which a metal or valuable mineral can be extracted.

21. What are the main types of minerals?

Ans: On the basis of chemical and physical properties Minerals are divided as follows:

1. **Metallic Minerals:**
   a. Ferrous.
   b. Non-Ferrous.
2. **Non-Metallic Minerals:**
   a. Mineral fuels.
   b. Non-Fuel Minerals

22. What are the uses of minerals?

Ans: **The main uses of minerals are:**

- Minerals support metallic industries such as iron, steel and aluminium etc.
- Many non-metallic minerals are essential for manufacturing of cement and chemical fertilizers.

23. Name the Types of iron ores. 2015, 2017, 2018(S), 2019, 2022

Ans:
1. **Magnetite.**
2. **Haematite.**
3. **Limonite.**
4. **Siderite.**

24. Mention the types of Coal. 2015(S), 2018, 2020

Ans: **The types of Coal are:**

1. Anthracite.
2. Lignite.
3. Bituminous.
4. Peat.

25. Name the two important Gold producing regions of India. 2019

Ans: Important Gold producing regions of India are:

1. **Hutti gold field** in Raichur District and Bellary gold field in in Karnataka.
2. **Ramagiri in Ananthapur** district and Jonnagiri in Kurnool in Andra Pradesh.

26. In which states of India the Gondwana Coal fields are located?

Ans: The Gondwana coal field are located in Jharkhand, Odisha, WestBengal, Chattisgarh, Maharastra, and Andra Pradesh.

27. Mention the factors necessary for Hydro Electricity. 2016(S), 2018

Ans:
1. The regular and uniform supply of water is essential. So, rivers which are used to provide water should be perennial.
2. The water should fall from a sufficient height. It may be in the form of natural water falls.
3. Dam Construction and reservoirs are necessary to storage of water.
4. A readily available market should be there, because hydro electricity cannot be stored for a long time.
5. It requires huge capital investment to purchase machines, to construct the dam, transmission lines etc., so, it is capital intensive.
6. It also requires technological assistance, suitable site and Government help.

28. Mention the factors necessary for Thermal Electricity.

Ans: For the successful development of Thermal Electricity certain conditions are necessary. They are:

1. There must be coal, petroleum or natural gas in abundance.
2. Large space required for the construction of thermal plant.
3. Abundant supply of water.

29. Biogas energy is suitable for rural India. How? 2022

Ans:

1. India has agrarian country and has estimated that 1 to 1.5 million tonnes of waste dung is available per annum.
2. Every family has some domestic animals and cow dung can be used to get biogas.
3. It can be used for cooking as well as lighting of the house.
4. To develop biogas Indian Government providing financial assistance in the form of subsidy, low interest, from the Indian Renewable Energy Development Agency.

30. What are the forms of utilization of solar energy? 2015

Ans: The forms of utilization of solar energy are:

1. Thermal Solar Power.
2. Solar Photovoltaic.
3. Photo Synthesis.

31. Mention the states where the wind farms are located?

Ans: The wind forms are located in Tamil Nadu, Gujarat, Rajasthan, Karnataka, Maharashtra, Madhya Pradesh, Andhra Pradesh, Kerala and Odisha.

32. What is the need for no-conventional sources of energy in India?

Ans: These power resources are found in abundance, pollution free, eco-friendly and non-harm to the eco-system. They can be very conveniently supplied to Urban as well as rural areas.

III. Answer the following questions in 30 to 35 Sentences each:

33. Explain the distribution and production of iron ore in India. 2015, 2016, 2017, 2019, 2022

Ans: India is endowed with fairly abundant reserves of iron ore. The estimated iron ore reserve is about 25 billion tonnes in the year 2012-13 large- part of it is good in quality. Though iron ore deposits are found in several parts of the country, the major part of the reserves are highly concentrated in few states.

Distribution:

1. **Odisha:** it is a largest producer and accounts for 40.1% of the total iron ore in India. Iron ore from Odisha is supplied to Jemshedpur, Durgapur, Rour Kela and Bokaro steel Plants.
2. **Chattisgharh:** it produce over 8.3% of the total production of iron ore in India. The iron produced by the state is supplied to the Hindustan Steel plant at Bhilai.
3. **Jharkhand:** this state ranks third in the production of iron ore in India. It contributes nearly 11.4% of the total production of the country. The production of iron or from the state is supplied tit h IISCO and Bokaro iron steel plants.
4. **Karnataka:** it produces only 7% of the iron ore production in India. But it has vast deposits of Hematite as well as Magnetite iron ore. Most of the iron ore produced from the state is supplied to the iron and steel plant of VISL and Jindal. Karnataka exports iron ore to japan and other countries.
5. **Others:** in addition to the above the small quantity of iron is also produced in some other states. Goa, Maharashtra, Andhra Pradesh, Rajasthan, West Bengal etc.

Production: India is the fourth largest producer of Iron ore in the world. The total production of iron ore is 167 million tonnes in 2011-12 and 143million tonnes in 2012-13.

34. Give an account of the uses, distribution and production of Manganese ore in India.

Ans: Manganese is the most important Ferro-alloy metal. It is a black, hard and iron like metal which occur as natural oxide.

Uses:

1. Manganese is used to make steel hard and resistant to rusting.
2. It is also used in manufacturing of paint, Varnish, batteries, dyes, fertilizers, electrical, glass, calico printing, medicine etc.
3. Manufacturing of black enamel in chemical industries, bleaching power, etc. It is also known as **"Jack of all Traders".**

Distribution of Manganese: India occupies the second place in respect of manganese ore reserves in the world after Zimbabwe. It is estimated that the total recoverable reserves of Manganese ore in India are about 406 Million tonnes. But in the production India ranks 5th after only Brazil, Gabon, South Africa and Australia.

1. **Odisha:** Has about 40.4% of India's reserves of manganese ore. It is the largest producer and contributes over 24% of the manganese ore in India.
2. **Maharashtra:** it contribute about27.7% of India's manganese ore.
3. **Madhya Pradesh:** it contribute about27.6% of India's manganese ore.
4. **Karnataka:** it contributes about 5.8% of India's manganese ore.
5. **Andhra Pradesh:** it contributes about 13.8% of India's manganese ore production of the country.
6. **Others:** Rajasthan, Gujarat, Jharkhand, West Bengal, Bihar, etc are the states which manganese ore distributed.

Production: India is the 5th largest producer of manganese ore in the world. Its total production was 23.22 lakh tonnes in 2010-11. 23.49lakh tonnes in 2011-12. The production of manganese is increasing from one year to another.

35. Describe the distribution, production and trade of Bauxite in India

Ans: Bauxite is an important ore which is used for making aluminium. It is an oxide of aluminium; it is not a specific mineral but a rock consisting mainly of hydrated aluminium oxide. It is also called as the wonder metal of the 20th century.

Distribution: Bauxite ore is mainly found in tertiary deposits and is associated with laterite rocks occurring extensively either on the plateau or hill range of peninsular India and also in the costal tracts of the country.

It is estimated that total reserve of Bauxite in the country is about 2500million tonnes. This reserve is the fifth largest in the world and accounts for about 8% of the world's Bauxite ore reserves.

1. **Odisha:** Has about 55.29% of India's reserves of Bauxite ore. It is the largest producer and contributes over 39.2% of the Bauxite ore in India.
2. **Chathisghar:** it produces more than 18.4% of the total production of Bauxite in the country.
3. **Maharashtra:** it accounts for 15.1% of the total production of Bauxite in the country.
4. **Jharkhand:** it contributes for 14.3% of the total production of Bauxite in the country.
5. **Gujarat:** it contributes for 6.6% of the total production of Bauxite in the country.

6. **Madhya Pradesh:** it produces 4.8% of Bauxite in the country.
7. **Others:** Andhra Pradesh, Tamil Nadu, Kerala, Karnataka, Goa, Uttar Pradesh are the minor producers of Bauxite ore in India.

Production: in 2011-12 the production of bauxite ore in India was about 12,877 thousand tonnes. But it is increased by 13% as compared the previous year. So now India is the 6th largest producer of Bauxite in the world.

36. Explain the distribution and production of Gold in India.

Ans: Gold is a precious and valuable metallic mineral, because it is famous for its attractive glitter, high malleability and ductility.

Distribution: the gold deposits occur mainly in the states of Karnataka, Tamil Nadu, Kerala, Bihar, Chathisghar, Jharkhand, Rajasthan, and Madhya Pradesh.

1. **Karnataka:** it is the largest producer of gold in India. The state has an estimated reserves of gold are 17.5million tonnes. It accounts for 17% of the India's deposits.
2. **Andhra Pradesh:** is the second important producer of gold in India. It has 7.06million tonnes of gold deposits and 37,000kg of gold metal have been assessed in the state.
3. **Jharkhand:** is another producer of gold in India. Its production was about 14kg. in 2010-11.
4. **Others:** Small quantities of gold reserves are distributed along the river which is flowing in Himachal Pradesh. Jammu and Kashmir, Tamil Nadu, Assam, Rajasthan, Kerala.

Production: India's share in the worlds gold production is insignificant (0.78%). Production of gold has a consistent declined from 1951to 1991. The gold production was 1588kg in 2012-13 against 2710kg in 1996-97. About 99% of the total production of gold in the country is from Karnataka.

37. Explain the Uses and types of Coal in India.

Ans: Coal is an inflammable organic substance. It is composed mainly of carbon and found in the sedimentary rocks. Coal is originated from organic matter.

Importance:

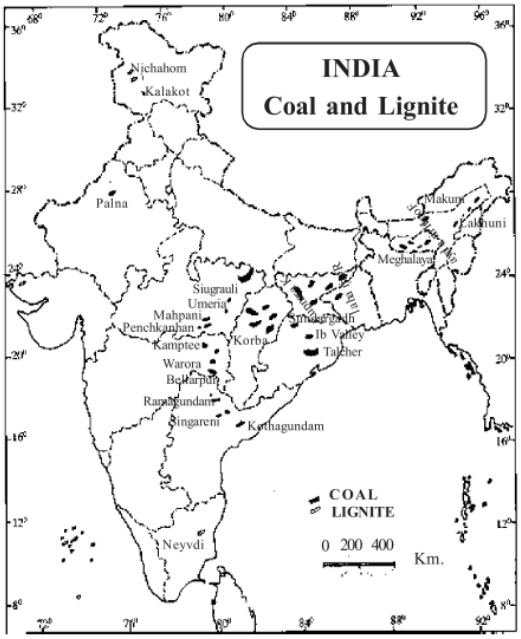
1. Coal constitutes about 70% the total commercial power consumed in India.
2. The power sector and industries account for 94% of total consumption.
3. Manufacturing of iron and steel, verity of chemical are leargly depend on the availability of coal.
4. Coal is source of energy and raw material for many chemical industries.
5. It provides many products like Tar, Naphthalene, Ammonia gas, Coal Gas, Benzol, etc.
6. These are used in the manufacturing of synthetic fibre, rubber, plastic, explosives, dyes and insecticides.

Types of Coal: coal may be classified into four types on the basis of its Carbon content, colour and heating intensity etc., they areas fallows:

1. **Anthracite:** this is the best variety of coal. It contains 80-90% of carbon. It is very hard, compact and black in colour. It produces more heat than any other form of coal. It ignites slowly and burns with a nice short blue flame without producing any smoke.
2. **Bituminous:** a type of coal after heating which release bituminous is called bituminous. It contains 50-80% of carbon and found in abundance. It can burn readily and produce sufficient heat. It relatively hard and black in colour.
3. **Lignite: it** is low grade variety of coal. Because it contains a lot of vegetable matter and wood structure. It contains only 40-55% of carbon. Its colour is dark to black brown. It gives more ash and moisture it also produces less heat.
4. **Peat:** this is the first stage of transformation of vegetable matters into coal. It contains less than 40% of carbon. It gives less heat, but releases more smoke and a lot of ash after burning.

38. Discuss the distribution and production of coal in India. 2019, 2019(S), 2022.

Ans: The coal bearing strata of India are geologically classified into two main categories.



1. **Gondwana coal field:** It accounts for about 98 per cent of the total reserves and 99 percent of the total production of coal in India. This type of coal is mainly bituminous variety. Its reserves are largely found in the valley of Damodar, the Son, the Mahanadi, the Godavari and the Wardha rivers. It includes the states of Jharkhand, Odisha, West Bengal, Chhattisgarh, Maharashtra and Andhra Pradesh.
2. **Tertiary coal field :** Important areas of tertiary coal include parts of Assam, Meghalaya, Arunachal Pradesh Nagaland, Jammu and Kashmir, Uttar Pradesh, Rajastan, Kerala and Tamil Nadu. It contributes very small amount of reserves, and production of coal i.e., 2 per cent of the total reserves and l per cent of the total production of coal in India.

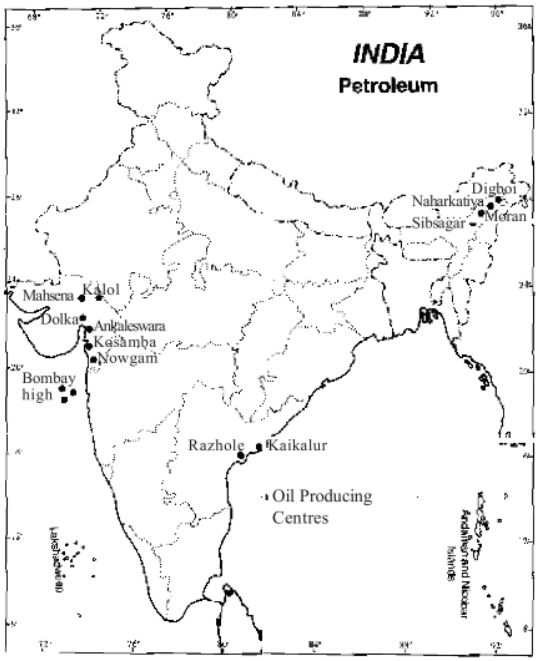
Distribution: A large amount of coal reserves are located in the state of Jharkhand, Chhattisgarh, Maharastra, Odisha, Madhya Pradesh, Andhra Pradesh and West Bengal. These states together accounts for 96 per cent of the total reserves of coal in the country.

1. **Chhattisgarh :** It holds the third position in respect of coal reserves but it is having first place in the production of coal in India. Next to Jharkhand this state has 22.3lper cent of coal reserves and produces 31.3 per cent coal of India. Major coal fields of the state are located in the northern part of the state Surguja, Bilasapur, and Korba.
2. **Jharakhand :** Jharkhand is the second largest producer of coal in India. The state has 25.4 per cent of the India's coal reserves and produce more than 20.3 per cent of coal in India. (2011-2012). Jharia is one of the oldest and richest coal fields of India. Its area is about 453 sq. krns and has been recognized as the "store house of the best metallurgical coal" in the country.
3. Odisha: possessing 24.34 per cent of the total reserves of India. But it is the third largest producer of coal and contributing 19.5 per cent of the total coal production of the country. Here Talcher is an important coal producing area which is located in Dhenkanal and Sambalapur districts. This field covers an area of 518sq. kms.
4. **Madhya Pradesh :** It has about 8.31 per cent of the coal reserves but contributes about 13.2 per cent of the total coal production of India. The Singrauli coal field in Shahdol and Sidhi is the largest in the state. It extends over an area of 300 Sq kms.
5. **Andhra Pradesh:** With only 7.55 per cent of the reserve and produces about 9.7 per cent of India's coal.
6. **Maharashtra:** The coal deposits of the state occur in Wardha valley, Ballarpur, Warora in Chandrapur district, Wun field in Yavatmal district and Kamptee in Nagpur district are the chief coal fields of Maharashtra.
7. **West Bengal:** West Bengal has 1O.43per cent of the coal reserves and 4.48per cent of the total production of the country. Raniganj is the largest coal field of West Bengal which covers an area about 1500 sq. kms.

Production: The Geological Survey of India has estimated the total reserve of all grade coal in India is 293.50 billion tonnes. India is producing 560.90 million tonnes of coal in 2012-2013. So India ranks third among the coal producing countries of the world next to China and USA. It contributes 10.2 per cent of the total world's production of coal.

39. Describe the occurrence, production and distribution of crude oil in India. 2017, 2017(S)

Ans: The term petroleum has been derived from two Latin words. Petra means rock and oleum means oil. Thus, petroleum is obtained from rocks layer, particularly sedimentary rocks of the earth. Therefore, it called rock oil.



Development: in India petroleum was discovered in1860. The first petroleum well was started at Makum of Assam on march 26 1867. Another important achievement was the discovery of oil in the Digboi area in 1889. Until 1953 the Digboi is the solo producer of mineral oil in the country. India constituted a separate directorate of Oil and Natural Gas commission (ONGC) on August 1956. Oil India Limited (OIL) on February 1959.

Distribution: India not significant with regard to petroleum reserves. It is estimated that the total recoverable crude oil reserves are 759.6million tonnes. Of which Bombay High, Gujarat, are Having 337.72Million tonnes and rest of it are in Assam, Andhra Pradesh, Tamil Nadu. India contributes 0.5% of the total crude oil production of the world.

1. **Bombay High**: it is the largest oil producing area contributing 42.7% of total crude oil output of the country. It is located on the continental shelf off the coast of Maharashtra about 176km of North-west Mumbai. An estimated reserve of about 491 million tonnes of oil and it is taken from the depth of over 1400meters with the help of special platform "Sagar Samrat".
2. **Assam:** the state possess about 172.5million tonnes(22.7%) of petroleum reserves. It contributes about 13.2% of the oil production in the country.
3. Gujarat: it has 17.82% of the total oil reserves and it contributes 15.2% of the oil production in the country.
4. **The Eastern cost oil fields:** the basin and deltas of Godavari, the Krishna of Andhra Pradesh and the Cauvery river of Tamil Nadu holds great potential of oil and natural gas production.
5. **Others:** oil has also been discovered in Bilaspur in Uttar Pradesh, Jwalamuki area of Punjab and desert area of Rajasthan.

Production: the total production of petroleum in India was 380.9Lakh tonnes in 2011-12. India is not a significant producer of petroleum in the world. Recently domestic crude oil production has increased. This is because of the constant efforts made by the ONGC and Oil India Ltd.

40. Give an account of Thermal and Nuclear Energy of India.

Ans:

1. **Thermal Power:** the electricity generated by using fossil fuels like coal, petroleum and natural gas is called "Thermal electricity". It can be produced even from Nuclear Fusion and wood.
   It has certain advantages as against hydro-electricity. The initial capital involved in the construction of thermal plants is low and time requirement is short.
   At present thermal electricity contributes 71.3% of the total installed capacity and 79.6% of the total generation of electricity in India. The thermal power generation increased to 590billion Kwh 2007-08from 2.6billion Kwh in 1950-51.

Distribution: of thermal power has a special significance in area where geographical conditions are not favourable for hydro-electricity in the country. At present there are about 318thermal power stations in India. Most of them are away from hydel power stations.

2. **Nuclear Power:** the energy generated from the fission of the atomic minerals such as Uranium, Thorium and Plutonium is called "Nuclear Energy". It has played an important role in the power development in India. Because the demand of energy has been increase of population in the country.

The first newclear power plant was started in 1969 at Tarapur near Mumbai with USA assistance. Noe there are 7 Nuclear power stations in India.

Location	Year	Capacity
Tarapur Nuclear Plant in Maharashtra.	**1969**	**1400M.W**
Ranaprathapa Sagara Nuclear Plant in Rajasthan.	**1973**	**1180M.W**
Kalpakkam Nuclear Plant in Tamil Nadu.	**1984**	**440M.W**
Narora Nuclear Plant in Uttar Pradesh.	**1991**	**440M.W**
Kakrapara Nuclear Plant in Gujarat.	**1993**	**440M.W**
Kaiga Nuclear Plant in Karnataka.	**2000**	**660M.W**
Kudukulam Nuclear Plant in Tamil Nadu.	**2013**	**1000M.W**

41. Describe the non-conventional energy resources in India. 2015, 2015(S)

Ans:

1. **Solar energy:** India is a tropical country and is well endowed with plenty of solar energy. Most parts of the country have bright sun shine throughout the year except monsoon period. Usually India has nearly 300 to 330 clear sunny days the average amount of solar energy received in the earth atmosphere is about 1353 Kw per sq meter. The solar energy received by the total land mass of India is large about 2.2 trillion Kw per day. In India Rajasthan which almost has clear sky throughout the year. Therefore, it is an ideal region for the development of solar energy. Karnataka, Andra Pradesh, Maharashtra, Madhya Pradesh, Chattisgarh, Delhi, Haryana, Tamil Nadu, Jharkhand, Bihar are the other producing states of solar energy.
2. **Wind Power:** In India the development of wind energy was started recently since 1990. Now India has fifth largest installed wind power capacity in the world. India has vast high wind zone with energy potential estimated at around 45000 M.W. It is mainly spread across Tamil Nadu, Gujart, Maharshtra, Karnataka, Rajasthan, Madhya Pradesh, Andhra Pradesh, Kerala and Odisha. Initially the wind farms were installed along the coastal areas. Subsequently, other states have taken the initiations to harness wind power with aid from the central government. There are 500 wind power stations spread over 28 states of the country.
3. **Bio-gas:** Bio-gas is based upon the use dung to produce gas which is used as domestic fuel especially in the rural areas. Bio-gas technology has a bright future in India. It has been estimated that 1 to 1.5 million tonnes of waste dung is available per annum in the country which can be used for biogas production. The bio-gas plants are distributed throughout the country. Rajasthan and Uttar Pradesh states ranks first and second respectively. To develop bio-gas, India Government providing financial assistance in the form of subsidy, low rate of interest from the Indian Renewable Energy Development Agency (IREDA).
4. **Geothermal Power:** Geothermal energy is obtained from the heat generating deep inside the earth. It is also produced from the hot springs and geysers. Various methods have been developed to harness geothermal power. The Geological Survey of India has identified more than 350 hot spring spots. The important Geothermal Centres are located in Jammu and Kashmir, Himachal Pradesh, Uttaranchal, Jharkhand and Chhattisgarh. A new geothermal plant has been commissioned at Manikaran in Kullu district of Himachal Pradesh. A potential of 4.5 M.W. geothermal powers has been estimated in Puga Valley of Ladakh in Jammu and Kashmir and 300 KW plant at Tattapani in Chhattisgarh.
5. **Tidal Power:** The rise and fall of sea water can generate energy is known as tidal energy. India is having a lengthy coast line which provides an excellent opportunity to generate tidal energy. The identified total potential in the country is ranges from 8000-9000 M.W The Gulf of Kambhat on the west coast in Gujarat and Sundarbans in the West Bengal on the east coast as well as Lakshadweep and Andaman Nicobar Islands also has been identified for the establishment of tidal power stations.

42. Explain the conservation and management of Mineral and Power resources. 2022

Ans: **"Conservation"** refers to the protection and preservation of natural resources and the natural environment for the future. This also includes the careful management of natural resource such as minerals, power resources, soil, forests etc., to prevent their destruction or over exploitation.

Need for Conservation: minerals are exhaustible resources. They occur in nature in limited quantities. They cannot be replaced. They have taken million years to be formed. The mineral

resources are getting depleted, some of them have been degraded and made useless. More over the present day energy which runs our industries mostly comes from minerals. Hence it's necessary that we have to conserve and manage our minerals and power resources.

Measures: Rational use of mineral resources involves:

1. Controlling their regular exploitation.
2. Utilization minerals carefully.
3. Using cheap substitute of minerals or energy resources as raw materials.

The following measures may be adopted to conserve minerals and power resources.

1. Exploitation of new minerals.
2. Maximum extraction of mined minerals.
3. Conservation of minerals during mining.
4. Multipurpose use of minerals.
5. Safe warehouses.
6. Exploration of alternative for minerals.
7. Re-use of minerals.
8. Use of power resources as raw materials.
9. Prohibition of pollution.
10. Developing alternative fuel sources of energy.

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UNIT - 10
INDUSTRIES

I. Answer the following questions in a Word or Sentence each:

1. What is manufacturing industries?

Ans: The process involved in conversion of raw material into finished goods is known as Industry.

2. Which industry is called as mother of all industry or basic industry?

Ans: Iron and Steel industry is called as mother of all industry or basic industry.

3. Which city is called Jawa of India? 2018, 2020

Ans: The Gorakhpur district of Uttar Pradesh is known as Jawa of India.

4. Name the Important agro-bas[ed industries. 2016

Ans: The important agro-based industries of India are

- Cotton textile industry
- Sugar industry
- Jute industry

5. What are industrial regions? 2015

Ans: "A region which has a large concentration of one or more different types of industries is known as an Industrial Region".

6. Define knowledge based industries. 2016(S)

Ans: Utilization of skilled man power through the set of programmes is known as knowledge based industries.

7. Which city of India is known as Silicon Valley? 2015, 2018(S), 2019, 2019(S), 2022

Ans: Bangalore City is known as Silicon Valley.

8. Name the first Naphtha-based chemical industry in India.

Ans: The National Organic Chemical Industrial Limited (NOCIL) was the first Naphtha based industry at Mumbai.

9. Mention the biggest industrial region of India.

Ans: Mumbai-Pune industrial region is the biggest industrial region of India.

10. Expand VISL.

Ans: Vishveswariah Iron and Steel Co. Ltd

11. What is computer software?

Ans: It defined as a collection of programmers and instructions given to the computer.

II. Answer the following questions in two to three Sentences each:

12. What is the difference between pure and impure raw materials? Give examples.

Ans:

Pure Raw material	Impure raw material
Some of the raw materials do not lose their weight in the processing of manufacturing. exp: cotton.	The raw materials which loose much of their weight when they are processed in the industry. exp: sugarcane.

13. Why Mumbai is known as "Manchester of India. 2016, 2018, 2022

Ans: Mumbai is leading producer of cotton textile in India. So it is known as Manchester of India.

14. Mention the importance of aluminium.

Ans: Importance of aluminium are:

1. Aluminium is widely used metal.
2. It ranges from small spoons to large aircrafts.
3. It has special value in the manufacturing of transport equipment.
4. It also used in paints.

15. State the future of computer software in India.

Ans: Indian software industry is one of the important source of foreign exchange earnings and also a major field of employment opportunities. The projected demand for trained IT professionals is estimated to over 40,000/year. There is clear imbalance between the demand and supply if IT professionals with the result that this sector offers many opportunities for the people.

16. Why cotton textiles industry is known as marketing-oriented industry. Why?

Ans: Cotton is a pure raw material and also easy transportation of raw cotton; the industries are established near the market areas they are known as market orientated industry.

17. Mention the uses of by-products of sugar.

Ans: By-products of sugar such as Bagasse and Molasses are also very useful. They are the major raw materials of paper and alcoholic industries. They are also supports Pharmaceutical, cardboard manufacturing, bakery and confectionery.

18. Name any three steel plants being under the private sector.

Ans: Steel plants under private sector are:

1. Jindal Vijayanagara Steel Ltd (JVSL)
2. Essar Steel Ltd (ESL)
3. Ispat Industries Ltd(IIL)
4. Neelachal Ispat Nigam Ltd(NINL) **(Write any three)**

19. Why auto-mobile industry is tends to be located near iron and steel industry?

Ans: Auto-mobile industry tends to be located near Iron and Steel producing centres because steel is the basic raw material used in this industry.

20. Why iron and steel industry are called raw material oriented?

Ans: To minimize the transportation cost of the Iron ore, the industries are established nearest to the availability of raw materials because iron is impure raw material. Iron industry itself it is called as raw material oriented industry.

21. Name the raw materials needed for cement manufacture?

Ans: Lime stone, Sea shells, slag, slug, silica, alumina, clay and gypsum.

22. Were we found software parks in Karnataka?

Ans: Bengaluru, Mysore, Mangaluru and hubballi.

23. Why Iron and steel industry is described as 'a raw material-oriented industry'.

Ans: The iron and steel industry is requires bulky and weight losing raw material. The important raw materials required are Iron ore, Coal, lime stone, manganese and dolomite. Both Iron ore and coal are the two major raw materials influence on the location of this industry. So, the Iron and steel industries are located near the source of coal or Iron ore.

III. Answer the following questions in 30 to 35 Sentences each:

24. Discuss the factors which influence on the location of the industries. 2015(S), 2017, 2017(S), 2019, 2019(S)

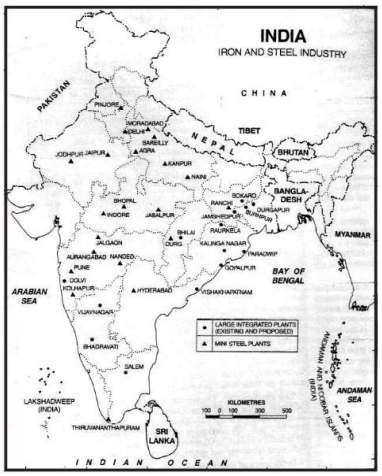
Ans: Growths of industries are the result of a complex combination of many factors. These are known as factors of localization of industries some of the important factors are;

1. **Raw materials:** the locational factor varies from one industry to another the factors influencing Location of Industry, close proximity to raw material availability or regular supply of cheap raw material are of most significance. Also the transport cost of raw material and product cost also determine the location of the industry.
2. **Water supply:** some industries like timber, chemical, iron and steel industries are need large quantities of water either in the processing of raw materials or for cooling purposes. Such industries are usually localized near river or lake.
3. **Power resources:** power is essential for running the machinery of industries and influences much on the industrial location. There are many sources of power.
4. **Climate:** the localization of certain industries are influenced by climate for exp coal, petroleum, hydroelectricity.

5. **Labour:** cheap and efficient labour is required to work in the industries.
6. **Market:** nearness to market is essential for quick marketing of manufactured goods.
7. **Transportation:** an efficient and cheap transport and communications network is necessary to carry raw materials to the factories and to carry finished goods to the market as well.

25. Give an account of iron and steel industry in India. 2015, 2022

Ans:



The iron and steel industry is described as basic industry. The production and consumption of iron and steel is an index of the level of the economic development of a country. Development of iron and steel industry opened the door to industrial development in India. Almost all sectors of the Indian industry depend heavily on the iron and steel industry for their basic infrastructure.

Distribution: there are nine major iron and steel industries in India. They are located either at the source of coal od at the iron ore mining centres.

1. **Tata Iron and Steel Industry-Jamshedpur (TISCO**): it was established in 1907. It is the largest industry in private sector.
2. **Vishveswariah Iron and steel co Ltd (VISL):** it was established in 1923 at Bhadravathi in Shimoga district of Karnataka.
3. **Indian Iron and Steel Company Ltd (IISCO):** it was started in 1919 at Burnapur in West Bengal. It is the second largest steel plant after TISCO.
4. **Hindusthan Steel Company Ltd, Rourkel (HSCO):** it was competed with the German colabaration. The steel plant was comminssioned in 1955.
5. **Bhilai Steel Plant:** it started in 1957. it was the largest steel production plant in the public sector. It is located at Bhilai near Raipur in Chhatisgarh.
6. **Durgapur steel plant:** it was established with collaboration with British and commissioned in 1956.
7. Salem Steel Plant: its location is Salem at Tamil Nadu. And production was started in 1982. It is technically supported by France and it mainly produce Stainless steel.
8. **Vishakhapatnam Steel Plant:** it is the only steel plant in the country located near coast. Established by National Ispat Nigam Ltd. Is located at Vishakhapatnam in Andhra Pradesh. In 1990.
9. **Essar Steel Ltd:** its in Hazira in Gujarat.
10. **Ispat Industry Ltd:** it is the third largest integrated steel plant in private sectorin India. It located at Dolvi in Maharashtra.
11. **Neelachal Ispat Nigam Ltd (NINL):** it is a new steel plant located at Duburi, Odisha.

Mini steel Plants: these plants are meant for producing mild steel as well as alloy steel. Presently 199 licenced electric ore furnace units with an installed capacity of 7.8million tonnes have been commissioned and have started commercial production.

26. Discuss distribution of Cement industries in India. 2017

Ans: In India the cement industry is highly concentrated in some of the states which have large reserves of lime stone and also have wide market for cement.

1. **Andhra Pradesh:** It is the third leading cement producing state of the country and accounts for 16.5% of total production of cement. The important places of cement industry are Vijaya—Wada, Chandrapura, Krishna, Cement nagar, Tandur, Tada-patri, Ananthpur, Sullurpet, Nalagonda, Ramagundam, Ramapuram, and Adilabad etc.
2. **Rajasthan:** The state has 10 cement plants and accounts for 18.9% of total cement output and thus it ranks first among the states of the country both in terms of capacityas well as production. The important places of cement industry are Lakheri, Kota, Chittorgarh, Banas, Udaypur, Shambupura, Pali, Sawaimadhopur.
3. **Madhya Pradesh:** It is fourth largest cement producing state of India. It has about 9 cement factories with a production of about 10.8 percent of the total output. It is the second largest lime stone producing state of the country. The industries are located at Satna, Katni, Bela, Rewa, Itarsi, Vikramnagar.

4. **Tamil Nadu:** It ranks second among the southern states in terms of cement plants. The history of modern cement production begins from Tamil Nadu. It has about 11.7% of installed capacity and contributes about 10.2 percent of total cement output. The factories are located at Madhukari, Dalmiapuram, Talukapatti, Ariyalur, Karur, Trichi, Rajanagar, Arakonam etc.
5. **Gujarat:** It is one of the pioneer states of India known for cement production and accounts for 8.0 per cent of cement production in the country. It has 10 large cement factories. They are located at Sikka, Ahmedabad, Ambujanagar, Dwarakanagar, Porbandar, Ankaleshwar, Mithapur, Vadnagar, etc.
6. **Chhattisgarh:** The state has 9 major cement plants and contributed about 5.4% of total cement output. The industries are located at Raipur, Tilda, Jharkhand has 4 cement plants and contribute Mandhar, Bilaspur and Sonadhi.
7. **Karnataka:** It has about 7 large cement plants and contributes about 5.3% of the total cement output of the country. The state has wide market for cement. The factories are located mainly around Kalburgy Shahabad, Wadi, Sedam, Malkhed, Kurkunta, Bagalakote, Bhadravathi, Ammasandra etc.
8. **Others:** Maharashtra has 7 large cement plants which contribute about 5.7% of total cement output. Himachal Pradesh has reserves of lime stone and has established 4 cement plants. Uttar Pradesh has 8 industries and about 2.5 percent of the total output. The other important cement producing states are Odisha, Bihar, Haryana, Punjab, and Assam.

27. Discuss the significance and distribution of software industries in India.

Ans: Information Technology is the fastest growing industry in India. It is also called Knowledge based industry. It is because rather than any raw materials it requires technical skilled man power means people with good knowledge.

Development of information technology has great impact on the economy as well as life style of the people involved in this sector. The contribution of software industry is almost 2% of the GDP of the country.

Development: it begun in 1994-95 and with a gradual evolution in the beginning has grown rapidly after 2000. The total turnover was 4190cr in 1995-96 has increased to 63371cr in 2001-05. So information technology has become one of the most important industries of India.

Distribution: software industries are widely distributed in country. However southern states namely Karnataka, Maharashatra, Tamil Nadu, and Andhra Pradesh have virtual control over the industry.

The major software and hardware producing companies include M/S Altos, HCL, Infosys, Wipro, Digital equipment, Zenith, Tata Honeywell, Unicrop, Eseda, BEL, PSI, etc.,

Among the states of India Karnataka, particularly Bengaluru is the most important destination of Indian Software industry. So it is called as Silicon valley of India. In addition that there are also developing many other cities like Mysore, Mangalore, Udupi, Hubli.

28. Describe the production and distribution of Petro-chemical industries in India.

Ans: Petro-chemicals are those chemical and compounds which are derived from petroleum resources. These chemicals are used for manufacturing a large verity of articles such as synthetic fibre, synthetic rubber, ferrous and nonferrous metals, plastics, dye stuffs, drugs and pharmaceuticals.

Mumbai is the hub of petrochemical industries. Other units are located in Uttar Pradesh, Gujarat, Maharashtra, West Bengal, and Andhra Pradesh.

Three organizations are working in the Petro-chemical sector under the administrative control of the department of chemicals and Petro-chemicals.

- **Indian Petrochemical Corporation Limited(IPCL)**
- **Petrofils Cooperative Limited(PCL)**
- **Central Institute of Plastics Engineering and Technology(CIPET)**

Synthetic Fibres: industries manufacturing nylon and polyester yarns are located at Kota, Pimpri, Mumbai, Modinagar, Pune. Polymers: it made from Ethylene and Propylene.

Production: the national Organic chemical industrial limited was the first naphtha based industry at Mumbai. The present installed capacity of these unites is of the order of 6-Mt. the industry has as annual growth rate of 15% and employs three million people directly.

29. Write the importance of knowledge-based industry and explain briefly in India.

Ans: Information Technology is the fastest growing industry in India. It is also called Knowledge based industry. It is because rather than any raw materials it requires technical skilled man power means people with good knowledge.

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30. Discuss the advantage of Mumbai-Pune industrial region.

Ans: Mumbai-Pune industrial region is located is the biggest industrial agglomeration in India. It includes Mumbai metropolis and its many suburbs namly Kurla, Ghatakopar, Vile parle, Jogeswari, Andheri, Thane, Bhandup, Kalyan and Pune etc.

The important reasons for the development of this industrial region are:

1. Early initiative of the British and local Parsi and Baniya merchants
2. Mumbai port facility
3. A good network of transport by road and rail and good communication.
4. Availability of raw cotton.
5. Development of hydro-electric power in the Western Ghats.
6. Supply of cheap labour from Konkan area.
7. Availability of banking and financial facilities.

A variety of industries are concentrated in this region. However, cotton textile industry is well developed here.

31. Sugar industry of India is moving southwards. Give reasons.

Ans: Sugar can be produced from sugarcane, sugar-beet or any other crops having sugar content. But in India sugarcane is the main source of sugar. In the early phase of development, the sugar factories were largely concentrated in the northern plains, particularly in Uttar Pradesh and Bihar. The Gorakhpur district of Uttar Pradesh is Known as Java of India.

In recent years there is remarkable change in the development of sugar industry. **The sugar industry has developed more in the southern states, namely Tamil Nadu, Maharashtra, Karnataka and Andhra Pradesh. It is described as the geographical redistribution of sugar industry.**

The geographical shift is due to:

1. The southern states located in the tropical regions are suitable for sugar cane cultivation.
2. The yield of sugarcane in these states is much higher than the northern states.
3. Extension of irrigation in the southern states has brought large tracts under sugarcane cultivation. It has favoured the establishment of many sugar industry.
4. Being located in tropical region, sugarcane ripening period and crushing period.
5. Supply of Hydro-electricity, transport and market facilities.

32. What are the effects of globalization?

Ans: Globalization implies integration of the economy of the country with the rest of the world economy and opening up the economy for foreign direct investment by liberalizing the rules and regulation and by creating favourable socio-economic and political climate for global business.

Advantages:

1. Free flow of capital and increase in the total employment.
2. Free flow of technology.
3. Increasing in industrialization. Setting up of new industries.

4. Spread of production facilities throughout the globe.
5. Balanced development of world economy.
6. Increase in production and consumption.
7. Commodities at lower price with high quality.
8. Increase in jobs and income.
9. Higher standard of living
10. Balanced human development.

Disadvantages:

1. Loss to domestic industries.
2. Exploiting of human resources.
3. Decline in income and profit
4. Unemployment, due to the coming of technology.
5. Transfer of natural resources. i.e raw materials, minerals.
6. Commercial and political colonize.
7. Widening gap between rich and poor, dominance of foreign institutions.

33. Give an account of automobile industry in India.

Ans: The term "automobile" is applied to any self-propelled vehicle powered by internal combustion engine and designed to transport passenger and goods over roads and highways. Automobile manufacturing is a heavy industry; include motor cycle, motor-cars, buses, trucks and tractors. Assembly of a large number of individual parts is a characteristic feature of this industry.

Development: automobile industry did not exist in India in the real sense. Before independence. At present automobile industry in India has one of the largest markets in the world. India's passenger car and commercial vehicle manufacturing industry is the 6^{th} largest in the world. At present, India has above 40million passenger vehicles. More than 3.7million automotive vehicles are produced annually, making the country the 2^{nd} fastest growing automobile market in the world.

Distribution: Mumbai, Chennai, Jamshedpur, Jabalpur, and Kolkata are the chief centres' of automobile industry.

The popular commercial vehicles producers are:

1. Tata Engineering and Locomotive Co Ltd.
2. Premier automobiles and Mahendra and Mahendra at Mumbai.
3. Ashoka Leyland Ltd and Standard Motor Products of India Ltd at Chennai.
4. Hindustan Motors Ltd at Kolkata, Toyata at Bengaluru.
5. Bajaj Tempo Ltd is Located in Pune etc.

34. Explain the industrial regions of India. 2016, 2016(S), 2018, 2018(S), 2020, 2022

Ans:

1. **The Hooghly-Kolkata Region:** The Hooghly Industrial Region or the North-Eastern Industrial Region is the oldest industrial region of India. It is located in the state of West Bengal. It extends along the river Hooghly to a distance of about 75 km from Naihati in the north to Budge and Ulbaria in the south. It is the most important industrial region in Eastern India, with Kolkata as the main center.
2. **The Mumbai-Pune Region:** It is located in Maharashtra. It is the biggest industrial agglomeration in India. It includes Mumbai metropolis and its many suburbs namely Kurla, Ghatkopar, Vile Parle, Jogeswari, Andheri, Thane, Bhandup, Kalyan and Pune and its many suburbs like Kirkee, Pimpri and Hadopsar.
3. **The Ahmedabad-Vadodara Region :** It is located in Gujarat and includes the areas around the Gulf of Khambat. The important industrial centers of this region are Ahmedabad, Vadodara, Koyali, Baruch and Surat. Ahmedabad is its main center of cotton textiles after Mumbai.
4. **The Madurai - Coimbatore - Bengaluru Region:** This region lies in Tamil Nadu and Karnataka state. It extends from Bengaluru in the north to Madurai in the south. The important centers are Hyderabad, Bengaluru,Mysore, Mandya, Chennai, Coimbatore, Madurai, Sivakasi, Tiruchirapalli, and Pudukottai.
5. **The Chotanagpur Plateau Region:** This industrial region cover parts of Jharkhand and the adjoining area of west Bengal and a part of Odisha. Jamshedpur is the most important industrial center. The other important centers are Bokaro, Durgapur, Kulti, Hirapur, Asansol, Raniganj, Jharia, Sindri, Dhanbad, I-lazaribagh, Chittaranjan and Ranchi. This region has become a hub of

heavy industries such as iron and Steel, tin plating, railway coaches and locomotives, etc. Hence it has earned the name of 'Ruhr valley of India' the other important industries of this region are agriculture equipment, paper, electrical wires, chemical industry, cement, glass and ceramic.

6. **The Delhi-Meerut:** This region covers Uttar Pradesh, parts of Haryana and Delhi. It includes Saharanpur, Faridabad, Ambala, Delhi, Modinagar, Mathura, Panipat etc. Delhi is the most important center.
7. **Vishakhapatnam-Guntur Region:** It covers mostly the Godavari - Krishna delta region of Andrapradesh It comprise of Vishakhapatnam, Guntur, Vijayawada, Rajahmundry, Kurnool and Prakasham districts. The port facilities of Vishakhapatnam and Machilipatanam. Agricultural development, supply of coal, a good network of transport, cheap labour and wide market facilities have contributed for the development of this industrial region.
8. **Kollmam-Thiruvananthapuram Region:** This has recently emerged as a major industrial region. It includes Kannur, Kozhikode, Kochi, Kottayam, Ernakulum, Alleppy, Alwaye, Kollam and Thiruvananthapuram. Since it is away from the mineral belt the industries of this region are mainly based on agriculture, fishery and light engineering.

35. Mention the importance of cement industry development in India.

Ans: The cement industry is one of the basic industries. Cement is the name given to the mixture of lime stone, clay, silica and gypsum. This is essential for all types of construction activities. It is second most important requirement after the iron and steel.

1. Cement is essential for the development of all type of infrastructure facilities such as roads, bridges, dams, buildings, cnnals etc.
2. The production and consumption of cement is an indicator of the progress of a nation.
3. It is the fundamental requirement for the development of major economic sector such as agriculture, industries, transportation, trade etc.
4. India is not only one of the major cement producing countries of the world, at the same time it is one of the largest cement consumer as well as exporter.

Development: the first cement plant was established by South Indian Industries at Ranipet near Chennai. During 1914-16 two more cement plants were established at Katni in Madhya Pradesh and and Lakheri of Rajasthan.in 1973, 10 out of 11 existing companies merged together and established Associated Cement Company Ltd in 1947.at present there are 153 large cement plants with a total production of 219.51million tonnes. Besides the country have more than 99 mini cement plants with an installed capacity of 11.10million tonnes. Recently India is the second largest cement producing country in the world.

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UNIT- 11
TRANSPORT, COMMUNICATION AND TRADE

I. Answer the following questions in a Word or Sentence each:

1. What is transportation?

Ans: System of carrying persons and goods from one place to another is known as Transportation.

2. What do you mean by communication? 2015, 2019

Ans: It refers to exchange of ideas, messages, information etc,.

3. Which road is at highest altitude? 2022

Ans: Manali-Leh road in western Himalaya it is in altitude of 4,270mters.

4. What is trade? 2020

Ans: The process of buying and selling of goods and services is called Trade.

5. What is Radio?

Ans: It is the electronic means of communication which sends the information of national and international news, sports, and other kinds of information etc.

6. What is television?

Ans: An electronic device that receives Television signals and displays them on a screen.

7. Define port.

Ans: A port is defined as a place of navigable water where ships can shelter for load and unload.

8. On which river bank Kolkata Port is located? 2015, 2016, 2022

Ans: Kolkata Port is located on Hoogly river from 148km from sea.

9. Name the satellite launched in November 2013.

Ans: Mangalayana was launched on 5th November 2013.

10. Which is the headquarters of Central Railway?

Ans: Mumbai is the headquarters of Central Railway.

11. Which is the important port of Kerala? 2017

Ans: Cochin Port.

12. Expand GPS.

Ans: Global Positioning System

13. Expand GIS.

Ans: Geographic Information System.

II. Answer the following questions in two to three Sentences each:

14. Mention the types of roads in India. 2015, 2016, 2017, 2018, 2020, 2022

Ans:

1. National highway.
2. State highway.
3. District roads.
4. Rural roads.

15. Mention the three important railway gauges? 2015, 2017, 2018(S)

Ans: Indian railway operates on three gauges.

1. Broad gauge.
2. Meter gauge.
3. Narrow gauge.

16. Mention Railway Zones with their headquarters. (ANY TWO)

Ans:

Zone Railway	-	Headquarters
Central railway	-	Mumbai
western railway	-	Mumbai
Southern railway	-	Chenni
South Western Railway	-	Hubli

17. Mention the advantages of Radio. 2020

Ans: **Main advantages of Radio are :**

1. Radio reaches both literate and illiterate as well as to the people of all ages
2. The massages advertisement can be repeated again and again repeatedly.
3. It provides educated values.
4. 4. It creates awakening among the people about the world.

18. Mention the main advantages of Television.

Ans: **Main advantages of Television are :**

1. It is the most effective medium to deliver information to large number of population very quickly.
2. News in different part of the world can be seen within minute.
3. It is source of entertainment.
4. It exhibits the persons giving the message.

19. State the two types of water ways. 2020

Ans: **Types of water ways are:**

1. Inland Water Transport.
2. Ocean Water Transport.

20. Differentiate between internal and international Airports of India.

Ans:

Internal Airport	International Airport
The airways which carries passengers, cargo and mail to different regions of the country and neighbouring countries.	The airways which carries the foreign traffic of passengers, cargo and mail between the countries.

21. Differentiate between imports and exports of India.

Ans:

Imports	Exports
Import trade of India refers to buying goods from foreign countries and bringing them to home country.	Export trade of India refers to the sale of goods and services by Indian ot other countries of the world. EXP: Plantation crop, textiles, electronic goods, information technology etc.

22. State the significance of air transport.

Ans:

1. It is very efficient means for seedy transport of people, mail, goods.
2. It is very essential in times of peace as well as during emergencies.
3. In a few areas which are almost inaccessible by land and waterways air transport provides the only feasible means of transport.
4. It also useful in the time of natural calamities/disasters.

III. Answer the following questions in 30 to 35 Sentences each:

23. Give a note on types of roads in India. 2015(S), 2018(S), 2019

Ans:

1. **National High Ways:** They connect the capitals of the states, industrial centres and major ports. They are well planned wide roads with two-lane, four-lane and six-lane roads. Both construction and maintained by the Central Government and National Highways Authority of lndia(NHAI). The total length of the National Highway is about 71,772km in 2011.They constitute only 2%of the total road length but they carry over 45% of the road traffic. Now the number of National Highways in the country is 235.
2. **State Highways:** The State Highways connect important cities and state with its capital with the national highways and with other cities and towns of regional importance. The state government is responsible for the construction and maintenance of the state highways. Now there is about

l,54,522km length of the state highways in the country,which account for 3.6 percent of the total road length of the country .

3. **District Roads :** These roads connect the production and marketing centres with the highways, rai1ways, towns and larger villages with the district headquarters. The ZillaParishad takes the responsibility of development and maintenance of these roads. Now there is about 4.7 lakh km length of ZillaParishad roads in the country.
4. **Village roads:** Roads which links the taluk headquarters with village and district highways are called village roads. They may be pucca roads or kuchcha roads. They are constructed and maintained by taluk panchayat and village panchayat. There are 6.3 lakh villages of various sizes in the country and only 46% (2.5 lakh) of them are connected by all-weather roads. At present there are about 26.5 lakh km of rural roads in the country.
5. **Border roads:** Border roads are constructed in the border areas of the country. In India, the Border Road Organisation (BRO) was set up in 1960 and as a road length of 38,783 km. These border roads are found along our borders with Pakistan, Nepal, Bhutan and Bangladesh.
6. **International High Ways:** Some of the National Highways of the country have been linked with the important roads of the neighbouring countries. They are known as International Highways. There are two categories of International Highways, the first are arterial routes which link capitals of the countries i.e., Lahore-Amritsar-New Delhi-Agra-Kolkata-Gilgit-Imphal road. The second type are routes connecting main cities, ports etc. with the arterial network, e.g. Agra-Gwalior—Hyderabad—Bengaluru—Dhanushkodi.

24. Explain the National Highways of India.

Ans: The national highways are regarded as the main arteries which run through the length and breadth of the country. They connect the capitals of states, industrial centres and major cities and Ports. They are well planned wide roads with two-lane, four lane, and six lane roads. Both construction and maintained by Central government and National Highways Authority of India (NHAI). The total Length of the national highway is about 71,722km in 2011. They constitute only 2% of the total road length but carry over 45% of the road traffic.

Now the number of National Highways in the country is 235. Under the National Highway Authority of India about 14,297KM length of National Highway is proposed to be upgrade to four or six lanes in two phases.

It consists of following components:

1. The Golden Quadrilateral.
2. The North-South and East-west corridor.
3. Port Connectivity and other projects.

1. The Golden Quadrilateral super high ways: linking between Delhi-Kolkata-Chennai-Mumbai and by six lane super highways. It has total length of 5846km.
2. East-west corridor: this project extended from the North-South corridors linking between Srinagar (JK) and Kanyakumari (TN) and East-west corridors connecting between Silcher(Assam) and Porbandar (Gujarat). The project has a total length of about 7300km.
3. Port Connectivity and other projects: is also including in the programme of NHAI. This project, connect Golden Quadrilateral roads with 13 major ports(380km)and other projects(962km) is in progress.

   The National Highways in NH-7 from Varanasi to Kanyakumari 2344km.

25. Explain the development of railways in India. 2016

Ans: Railway is the most important means of land transport in India. Railway System is the largest in Asia and fifth largest in the world. Also largest public enterprise in India.

The first railway line in India was from Bombay to Thane a distance of 34km, opened on 16th April 1853. It was followed by a railway line in 1856, from Madras to Arkonam 70km and A railway line in 1874 from Kolkata to Raniganj 180km. then gradually railway line ware constructed to link different parts of the country. At the time of Independence, the length of the railway line was 54,969km.

During the post-Independence period especially because of the Five Year plans the Indian Railway has recorded spectacular progress. There were 43 steam 4963 diesel and 3586 electric locomotives,

55,065 coaches, 2, 11,763 wagons. The trains moved everyday through more than 7,030 stations. On average they carried 17million passengers and 2.8million lakh tons of freight every day.
At present all the rail operation in India are managed by Ministry of Indian Railways. The countries railways are bout 64,460km of length. It has transported 7651 million passengers and 921milion tonnes of freight annually. The network operates 29 States and 3 Union territories.

26. Explain the Pipeline transport with advantages and disadvantages. 2022

Ans: Pipe line is a mode of transport; it is used for transporting materials in liquid form. But it is most convenient , efficient and cheap mode of transport for transporting goods like crude oil, and refined products, gas, water and milk.

There are certain advantages of pipelines over other modes of transport:

1. Pipelines can be laid through difficult terrain and also through water.
2. The initial cost of laying the pipelines in high but the subsequent cost of maintenance and operation is low.
3. Pipelines ensure a steady supply and minimize trans-shipment losses and delays.
4. Pipeline operation involves very low consumption of energy and keeps the environment free from pollution.
5. Pipeline regions unite industrial regions.

There are some limitations of pipeline transport:

27. Explain any two major ports of west cost of India. 2015, 2017

Ans:
1. **Kandla:** it is a tidal port located at eastern end of Gulf of Kachchh (Gujarath). It has been developed after independence to relieve congestion on Mumbai port and compensate the loss of Karachi port to Pakisthan after partition.
2. **Mumbai:** it is the biggest most spacious, natural, well shelter and capital of the Maharastra State. The bay in this coast has 10-12 meter deep water which has given rise to natural harbour well protected against the south-west monsoon. The length of this port is 20kms and width is 6-10kms. There are 54 berths in its wet dock.
3. **Jawaharlal Neharu (navaSheva) Port:** it has been built at NhavaSheva Island cross Elephant caves, about 10kms from Mumbai. It is the largest artificial and most modernized and well equipped port of India.
4. **Murmagoa:** it is natural port located at the entrance of Zuari estuary in Goa. It has a protected harbour, rich and vast hinterland.
5. **New Mangaluru:** it is the most important port of Karnataka. It serves Karnataka and Kerala states. This port is situated about 9km north of the old existing mini port. It is a modern all-weather port.
6. **Kochi:** it is a natural harbour located on the western coast of India (Kerala). It is located close to Suez-Colombo Sea route and has sheltered back water bay.

28. Explain the air transport of India. 2019(S)

Ans: Air transport is the transportation of goods and passengers by means of aeroplane and helicopters. It is very efficient means for speedy transport of people, mail and goods.
The first air traveling facility was started in India between Bangalore and Hyderabad by "Deccan Airways" in the year 1946. Indian Airways was nationalized in the year 1953.
Civil Aviation: air transport used for commercial purpose is called 'civil aviation' there are two states owned corporations operating air transport in India namely:

1. The Indian Airlines Corporation: established in 1985. It operates from 55 domestic stations, and provides air service to remote areas. At present it has more than 70 aircrafts.
2. Air India International: it carries foreign traffic of passengers and cargo. It was established in 1953 and it provides services to 97 destinations outside the country. It operates 59 stations of which 16 domestic and 25 internationals. Air India owns a fleet of 22 aircraft.

Some important airports of India are:

1)	Mumbai	-	Sahara International Airport
2)	Delhi	-	Indira Gandhi International Airport
3)	Kolkata	-	Subash Chandra Bose International Airport
4)	Chennai	-	Anna International Airport
5)	Bangalore	-	Kempegowda International Airport
6)	Hyderabad	-	Rajiv Gandhi International Airport

29. Discus the advantages and disadvantages of television. 2016

Ans: **Advantages of television:**

1. It is the most effective medium to deliver information to large number of people very quickly.
2. News in different part of the world can be seen within minutes.
3. Television educates millions of people through advertisement.
4. It is a source of entertainment.
5. It makes a personal appeal and transmits the message directly in to the home.
6. It exhibits the persons giving the message.

Disadvantages television:

1. It is a sort of time-consuming, people waste time in watching, which distracts them from their work, study, relationships and so on.
2. Television is a health hazard to people, especially to children.
3. Television also broadcasts some inappropriate programmes.
4. It is very costly, so, it can be used only to a limited extent.
5. It requires lot of concentration, attention of the people.
6. People get board of repeated messages.
7. When it is under the control of the government, messages will be scrutinized and censored and hence there is no freedom for the messages.

30. What is satellite communication? Briefly explain its importance.

Ans: A satellite can be defined as a body that orbits the earth or other planate which has been sent from earth into space. The 20th century is also known as Space age. With the advancement in science and technology artificial satellite has marked a new era in the history of global telecommunication.

The Geostationary satellites are positioned at a height of about 36,000km in the sky, and they have the advantage of having position in the sky with reference to any point on the earth satellite providing a large number of telephones, circuits between various cities in India.

Radio and Television networking over entire Indian are done through satellite technology. The INSAT-2B was launched in july 1993 togather with INSAT-1 series. The last of INSAT 1D series. Very recently India has launched a Satellite 1RS P-2 in to the orbit successfully from the country's space port at Sri harikota in Andhra Pradesh. ISRO-Indian space research organization centre is located at Banagluru. And satellite controlling centre in Hassan Karnataka. National Remote Sensing Agency(NRSA) Hyderabad

Importance of satellites: satellites are important to us in many ways.

1) They provide us with radio and cable Television, internet.
2) They provide us with a global positioning system(GPS)
3) They allow us to make cellular phone calls from long distance.
4) They circle the earth and relay weather conditions and forecasts.
5) The government uses them to spy on other countries in order to protect us.
6) They are used for space research, which includes sotto satellites that observes the sun and provide us with early warnings of upcoming solar fleas.
7) Satellites monitor crops.

31. Explain imports and Exports of India. 2020

Ans: Export trade refers to the sale of goods and services by India. To other countries of the world. India's wide verities of goods and services like plantation crops, chemicals and related products, textiles, electronic goods, information technologies etc are sent to other countries of the world.

Growth of Export: allow us to India export has increased from rupees 606cr in 1951 to rupees 33,553cr by 1990-91. When India introduced liberalization polices in 1991 the exports of our country has steadily increased in the recent years. 2011-12 total export is 10, 24,707cr.

Composition of export: the export of Indian may be broadly classified into three types namely:

1) Primary Commodities.
2) Manufacturing goods.
3) Services.

1. Agricultural and allied products: during 2011-12 exports of commodities under the group registered a growth of 65.09% with the value of exports increasing from us dollar 8165.03million to 13300.63million to current year.

2. Mineral and Ore: it has estimated at US dollar 4007.29 million during 2011-12.
3. Gens and Jewellery: during 2011-12 is 27664.09million US dollars.
4. Electronic Goods: During 2011-12 exports of electronic goods is over 5024.92 million dollars.
5. Textiles: During 2011-12 exports of textiles goods is over 15101.96 million dollars.
6. Others are: Handicraft, Engineering Goods, Petroleum production, services.
2. Imports of India: imports refer to buying goods from foreign countries and bringing them to home country.
Growth of Imports: since 1950-51 our imports have increased by 390 times. The total value of imports increased from rupees 608cr in 1950-51 to rupees 3, 53,967cr by 2003-04. Imports further increased to rupees 8, 65,404cr by 2006-07 at an average rate of 24%.
The main items of imports of India:

1. Petroleum and petroleum products
2. Pearls and precious stones
3. Capital goods
4. Fertilizers

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UNIT - 12
GEOGRAPHICAL PERSPECTIVE ON SELECTED ENVIRONMENTAL ISSUES, PLANING AND SUSTAINABLE DEVELOPMENT

I. Answer the following questions in a Word or Sentence each:

1. What do you mean by environmental pollution? 2018, 2019(S)

Ans: Environmental pollution means the release of harmful substances and energy from human activities. It is the undesired, impaired state of environment for human life.

2. What is water pollution?

Ans: Degradation of the quality of water due to indiscriminate use of water is called water pollution.

3. At which stretch/course the Yamuna River is most polluted?

Ans: Delhi to Confluence with Chambal and Mathura and Agra. stretch/course the Yamuna River is most polluted.

4. What is Air Pollution?

Ans: Increased concentration of contaminants like dust, fumes, gas, fog, odour, smoke or vapour in the air is called air pollution.

5. What is Noise Pollution?

Ans: The state of high level of noise level which unbearable and uncomfortable to human beings is called noise pollution.

6. What is a solid waste?

Ans: Solid waste refers to any unwanted or discarded materials from residential, commercial, industrial and agricultural activities.

7. What are Slums?

Ans: A slum is an area of illegal constructions within the city characterized by substandard housing and dirt.

8. What do you mean by Planning?

Ans: Planning is process by which an individual or organization decides in advance on some future course of action.

9. What is sustainable Development? 2022

Ans: Sustainable Development is defined as development to achieve the needs of present generation without compromising future generation's needs.

II. Answer the following questions in two to three Sentences each:

10. What are pollutants?

Ans: Pollutants are substance or energy introduced into the environment that has undesired effects or adversely affects the usefulness of a resource.

11. What are the types of pollutions? 2015(S), 2017(S)

Ans: Important types of pollutions are:

- Air Pollution
- Water pollution
- Noise Pollution
- Land Pollution

12. What are the causes of water pollutions? 2015

Ans: Due to erosion, landslides, gases, soil minerals, human materials, waste created by animals, industrial waste water and domestic waste water etc.

13. What are the effects of water pollution on human health?

Ans: Water pollution is a source of various water borne diseases which causes Diarrhoea, Intestinal worms, Hepatitis etc.

14. Name three states of India where Ganga River is most polluted.

Ans: Ganga River is most polluted in

1. Down Stream of Kanpur.
2. Down Stream of Varanasi.
3. Farrakka Barrage.

15. What are the main causes of pollution of Ganga River?

Ans: Main causes of pollution of Ganga River are:

- Industrial pollution from town like Kanpur.
- Domestic wastes from urban centres.
- Dumping of carcasses in river.

16. Name three states of India where Yamuna River is most polluted.

Ans: In Delhi and Uttar Pradesh Yamuna River is most polluted.

17. What are the causes/sources of air pollution? 2015(S), 2019(S)

Ans:

1. Increased use of various fuels.
2. Increase in emission of toxic gases from industrial activities into atmosphere.
3. Mining activities release dust in the air.

18. What are the effects of air pollution? 2019

Ans: Air pollution affects various dieses related to respiratory, nervous and circulatory system, urban smog, acid rain and global warming.

19. What are the causes/sources of noise pollution? 2018(S)

Ans: There are various sources of noise pollution they are:

1. It is caused by noise from various factories, mechanised construction and demolition works, automobiles and aircrafts.
2. Noise from sirens, loudspeakers used in various festivals, programmes etc.
3. Traffic
4. In sea traffic-to the harbour due to loading and unloading.

20. What are the effects of noise pollution?

Ans: It is stress and high blood pressure nervous, uneasiness among the people living close to the source of noise pollution. It as adverse effect on animal life also. It retards the growth of animal and affects their working capacity. It also causes road accidents.

21. Mention two sources of solid waste? 2015, 2017, 2018, 2018(S)

Ans: solid waste is from tow source namely:

1. House hold or domestic establishment.
2. Industrial or commercial establishment.

22. Explain harmful effects of solid waste.

Ans: Effects of solid waste are:

1. It causes health hazard through creation of obnoxious smell and harbouring of flies and rodents, which act as carriers of diseases like Typhoid, Diphtheria, Diarrhoea, Malaria and Cholera etc.
2. These wastes cause frequent nuisance as and when these are carelessly handled, spread by wind and split erred through rain water.
3. Duping of industrial waste into rivers it lead to water pollution.

23. Define the concept of land degradation.

Ans: Deterioration of quality of agricultural land due to soil erosion, water logging, salinization and alkalisation which is called land degradation.

24. Name different types of degraded land in India.

Ans: Different types of degraded land in India is :

1. Total waste land

2. Barren and uncultivable waste land.
3. Natural Degraded uncultivable waste land.
4. Natural and man-made degraded uncultivable waste land.
5. Man-made degraded uncultivable waste land.
6. Total degraded uncultivable waste land.

25. What are the strategies for sustainable development?

Ans: This concept belongs to hoe we utilize our resources so that an inter-relationship can be established among present and future generation.

III. Answer the following questions in 30 to 35 Sentences each:

26. Explain about urban waste disposal in India. 2016, 2019(S)

Ans: **Urban Disposal:** Urban centres are known for large amount of waste generation. It is a serious problem in India. In metropolitan cities like Mumbai, Kolkata, Chennai, Bangalore erc., about 90 percent of the solid waste is collected and disposed. The waste may be treated as resource and utilized for generating energy and compost. Untreated waste ferment release toxic bio-gases to the atmosphere, including methane. These wastes should be treated as resources and utilized for generating energy and compost etc.

27. Discuss any six problems of people living in slums. 2016, 2017(S), 2018(S), 2022

Ans: **Problems of Slums in Cities:**

1. Slums are in environmentally unsuited and degraded areas. Houses in slums are decaying, poor hygienic conditions, poor ventilation, lack of basic amenities like drinking water, light and toilet facilities, etc.
2. They are overcrowded having narrow street pattern prone to serious hazards from fire.
3. They are illegal colonies settled on the vacant government lands.
4. People living in slums are poor. Therefore problems are common.
5. People living in slums works in high risk jobs and unorganised sectors, therefore they are paid less.
6. Consequently they are the undernourished, prone to different types of diseases and illness.
7. They cannot afford to give proper education to their children.
8. The poverty makes them vulnerable to drugs, alcoholism, crime, vandalism and ultimately they face social exclusion.

28. Mention the process that includes land degradation in India. 2015

Ans: Pressure on agricultural land increases not only due to the limited availability but also by deterioration of quality of agricultural land due to soil erosion, Water-logging, salinization and alkalisation which is called 'degradation'.

The degradation ultimately effect on agricultural productivity. In addition to degradation by natural process such as gullied or ravenous land, deserted or coastal sands, barren rocky areas land degradation is caused by man. These have caused water logged and marshy areas, land affected by salinity and alkalinity, degraded shifting cultivation area and under plantation crops, degraded forests, degraded pastures and mining and industrial waste lands.

Classification of Wasteland by Processes in India

Categories	% of Geographical Area
Total waste land	17.98
Barren and uncultivable wasteland	2.18
Natural Degraded CWL	2.4
Natural and Man-Made Degraded CWL	7.51
Man-Made Degraded CWL	5.88
Total Degraded CWL	15.8

* CWL: Cultivable Waste Land

29. Explain the causes and effects of water pollution? 2015(S), 2018

Ans: Degradation of the quality of water due to indiscriminate use of water is called Water pollution. Water pollution is caused by natural and human sources.

1. Natural sources of water pollution are due to erosion, landslides, gases, soil, minerals, human materials , waste created by animals and other living organisms and vegetation.
2. Human sources of water pollution are Industrial, agricultural and cultural activities.

Effects of Water Pollution:

Water pollutants adversely affect the health of humans, animals and aquatic life. Water pollution is a source of various water borne diseases which causes diarrhoea, intestinal worms, hepatitis etc., World health organization shows that about one fourth of the communicable diseases in India are of water borne.

30. Explain the causes and effects of deforestation?

Ans: Deforestation means irresponsible or large scale felling or cutting of trees by man for commercial and other purposes.

Causes of Deforestation:

l. The major causes are- Extension of agriculture;
2. Construction of roads, Railways and Industries;
3. Establishment of human settlements, Mining activities etc.

Consequences of deforestation:

1. The major consequences are- Soil degradation and soil erosion.
2. Deforestation also results in the destruction of natural habitats of wildlife and loss of Biodiversity, Climatic changes such as desertification; Global warming and etc.
3. Loss or damage to forest eco- system also causes reduction in soil moisture cycle.

31. What do you mean by term planning? Which are the two approaches to planning? Explain each of them. 2020

Ans: Planning is the process by which an individual or organization decides in advance on some future course of action.

Approaches to Planning: There are two approaches to planning, i.e.

1. **The sectoral planning:** means formulation and implementation of the sets of schemes or programmes aimed at Development of various sectors of the economy such as agriculture, irrigation, manufacturing, power, construction, transport, communication, social infrastructure and services.
2. **Regional / Target area planning:** means making schemes for the development of particular group or area such as backward regions. Some of the examples of programmes directed towards the development of target areas are Command Area Development Programme, Hill Area Development Programme, Drought Prone Area Development Programme, Desert Development Programme, and Hill Area Development Programme. The Small Farmers Development Agency and Marginal Farmers Development Agency which are the Examples of target group programme

32. What is target area planning? Why it is necessary in India? Give any four examples of target area planning.

Ans: Target area planning means making schemes for the development of particular group or area such as backward regions. This type of planning is necessary in India because regional imbalances in economic development are getting serious.

Some of the examples of programmes directed towards the development of target areas are Command Area Development Programme, Hill Area Development Programme Drought Prone Area Development Programme, Desert Development Programme, and Hill Area Development Programme. The Small Farmers Development Agency and Marginal Farmers Development Agency which are the Examples of target group programme.

1. **Hill Area Development Programme:** were initiated during fifth five year plan covering 15 districts Comprising all the hilly districts of Uttar Pradesh, Assam, Darjeeling district West Bengal and Nilgiri district of Tamilnadu.

2. **Drought Prone Area Program:** The basic objective of the programme is to minimise the adverse effects of drought on production of crops and livestock and productivity of land, Water and human resources.

33. Explain the concept of sustainable development.

Ans: "Sustainable development" is defined as development to achieve the needs of present generation without compromising future generation's needs. 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". Thus, sustainable development takes care of ecological, social and economic aspects of development during the present times and pleads for conservation of resources to enable the future generations to use these resources. It takes into account the development of whole human kind which has common future.

34. Discuss the challenges of Sustainable Development in India. 2022

Ans: The challenges of sustainable development and its consequences are clearly visible.

1. **Population:** In the beginning of the 21st century the population of the Earth reached 6 billion, and is expected to level out between 10 and 11 billion over the next 50 years. The basic challenges will be shortages of drinking water and arable land for food production.
2. **Poverty:** almost 25 per cent of the World's population lives on less than one meal a day. It needs to be addressed.
3. **Inequality:** In many regions of the world cultivating area is limited, and any extension has a destructive effect on the remaining ecosystems. In the future, the growth of food production should not come at the expense of nature. In future the current state of biodiversity loss should be conserved.
4. **Shortage of drinking water:** It is expected that, at the current rate of development, every second person will suffer from water shortage by the year 2025.
5. **Human health:** In many cases, deaths in developing countries are avoidable. Humanity should direct more attention and money in the coming years to the struggle against diseases. The imminent task is to reduce the death rate among children under five years of age by two-thirds, and the death rate of young mothers by 75 per cent by 2015.
6. **Consumption of Energy:** Consumption of all forms of energy is continually rising. The improvement of access to reliable, sustainable and environmentally friendly energy sources is required.
7. **Deforestation:** The world's forests diminish mainly due to expansion of agriculture. In the coming years, improving the recovery and management of the forests will be of utmost importance.
8. **Petrol consumption:** It is constantly rising. The Summit emphasised the need to realise the decisions of the 'Kyoto Protocol' for reaching an agreement on emissions norms for greenhouse gases in developed countries.

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PART — C
PRACTICAL GEOGRAPHY

UNIT - 13
REPRESENTATIONS OF GEOGRAPHICAL DATA

SINGLE LINE GRAPH

1. Construct a simple line graph by using the data given below.

Growth of population in India.

Year	Population (in millions)
1961	439.23
1971	548.16
1981	683.33
1991	843.93
2001	1020.1
2011	1210.1

2. Construct a simple line graph, by using the following data.

India: production of iron ore.

Year	Production (in million tons)
1960-61	18.7
1970-71	54.3
1980-81	41.6
1990-91	34.9
2000-01	80.6
2010-11	136.4

3. Construct a simple line graph, by using the following data.

Production of gold in India.

Year	Production (in Kg)
1961	4868
1971	3656
1981	2495
1991	1508
2001	2105
2011	2615

4. Construct a simple line graph, by using the following data.

Density of population in India.

Year	Density
1961	142
1971	177
1981	216
1991	267
2001	325
2011	382

DOUBLE LINE GRAPH

5. Construct a double line graph, by using the following data.

India: Birth and Death rate (per thousand)

Year	Birth rate	Death rate
1961	41.1	18.9
1971	36.9	14.9
1981	33.9	12.5
1991	29.3	9.8
2001	26.1	8.7
2011	22.2	6.4

6. Construct a double line graph, by using the following data.

India- Literacy rate (in %)

Year	Male	Female
1961	40.40	15.24
1971	45.95	21.97
1981	56.27	29.75
1991	64.11	39.29
2001	75.85	54.16
2011	82.10	65.50

7. Draw a double line graph to represent the data given below.

Area and production of food grains in India.

Year	Area (Mn.Ha)	Production (Mil.Tons)
2004-05	120.1	198.4
2005-06	121.6	208.6
2006-07	123.7	217.3
2007-08	124.1	230.8
2008-09	122.8	234.5
2009-10	121.3	218.1
2010-11	126.7	244.5
2011-12	124.8	259.3
2012-13	120.8	257.1

8. Construct a double line graph to show the following data.

India: Jowar and Bajra Production.

Year	Jowar (Mn. Tons)	Bajra (Mn. Tons)
2004-05	7.24	7.93
2005-06	7.63	7.68
2006-07	7.15	8.42
2007-08	7.93	9.97
2008-09	7.25	8.89
2009-10	6.70	6.51
2010-11	7.00	10.37
2011-12	5.98	10.25
2012-13	5.28	8.74

SIMPLE/SINGLE VERTICAL BAR GRAPH

9. Construct a simple bar graph for the following data.

Karnataka- decadal sex ratio

Year	Women (/1000 males)
1961	959
1971	957
1981	963
1991	960
2001	965
2011	968

10. Represent the following data by constructing a simple vertical bar graph.

India- Decadal sugarcane production

Year	Production (in million tons)
1961	110.00
1971	126.36
1981	156.24
1991	241.04
2001	286.00
2011	310.00

11. Show the following data by constructing a simple vertical bar graph.

Length of national highways in India (in km)

Year	N. Highway
1961	21,712
1971	23,838
1981	31,671
1991	33,650
2001	57,737
2011	70,934

12. Use the following data to draw a single bar graph.

Male literacy rate in Karnataka (in %)

Year	Percentage
1961	36.2
1971	41.6
1981	48.8
1991	67.3
2001	76.1
2011	82.9

DOUBLE VERTICAL BAR GRAPH

13. Construct a double vertical bar graph, by using the following data.

India- urban and rural population (in %)-2011.

Year	Rural	Urban
1961	81.7	18.3
1971	79.8	20.2
1981	76.3	23.7
1991	74.3	25.7
2001	72.2	27.8
2011	67.4	23.6

14. Construct a double bar graph, by using the following data.

India- age structure (in %)

Year	Children	Adults
1961	41.00	53.30
1971	41.40	53.40
1981	39.70	54.10
1991	36.50	57.10
2001	37.30	55.10
2011	31.10	63.60

15. Construct a double bar graph, by using the following data.

India - Trend in iron and manganese ore production (in million ton)

Year	Iron ore	Manganese
1961	18.7	14.05
1971	34.3	18.41
1981	41.6	15.32
1991	54.9	13.88
2001	80.6	15.95
2011	136.4	23.22

16. Show the following data by a double bar graph.

Karnataka- selected district-wise density of population (per km2)

Districts	2001	2011
Ramanagar	288	303
Bengaluru	380	441
Chikkaballapura	273	298
Kolar	346	384
Yadagiri	183	224
Kalaburgi	198	233

PIE OR WHEEL DIAGRAM

17. Show the following data by a Pie diagram.

India- Types of railway gauges (in %).

Types	Percentage
Broad gauge	86
Meter gauge	10
Narrow gauge	4

18. Construct a pie diagram.

Area under selected crops in India. (in lakh hectare)

Crops	Area (in lakh hectare)
Food crops	35
Cereals	16
Oil seeds	12
Commercial	17

19. Construct a pie diagram by using the following data.

Types of national highways in India (in %)

Types	Percentage
Single lane road	21
Double lane road	54
Four/six/eight lane road	25

20. Draw a pie diagram by using the following data.

Area of irrigation by different sources (in million hectares)

Sources	Area (in million hectares)
Wells	36
Canals	16
Tanks	2
Others	6

(Only for Blind Student)

1. Explain the primary sources of data.

ANS: The data which are collected for the first time by a researcher or group of researchers, institutions, or organization are called Primary data or sources. These are original in character and first-hand information.

The primary data is collected through the following ways:

1. **Through Personal interview:** Personal interview are the most commonly used method of collecting data, because the interviewer has the opportunity of explaining the study and answering any question from the respondents.in this method, the researcher gets direct information from the respondents through dialogs and conversation.
2. **Personal Observations:** it refers to the collection of data or information by individual or groups of individuals, through direct observations in the field. Through field survey, information about natural phenomena like the relief feature, drainage pattern etc. will be collected.
3. **By Questionnaire:** the most common method used in surveys in the Questionnaire. In this method simple questions and their possible answers are written on a plain paper and the respondents have to tick – mark the possible answers from the given choice. At times a set of structured questions are written. Sufficient space is to be given in the questionnaire where the respondents write their opinion.
4. **Other methods:**
    1. **Telephone Interview:** in this method the researcher /interviewer can collect the information over the telephone. It is cheaper than personal interview and flexible than mailing questionnaire. It can be conducted in a shorter time with a small stuff. So it is faster than other method.
    2. **Measuring Properties:** in this method, the data about properties of soil and water collected directly from the field by measuring their characteristics using Soil and water quality kit.

2. Explain the secondary sources of data

ANS: The data those have been collected and analyzed already by some departments, organizations, NGO's etc., are called secondary data.

Secondary sources of data may be classified into two sources

1) Published Sources and 2) Unpublished Sources.

1. **Published Sources**

- **International Publications:** In these publications yearbooks, monographs and reports are published by different agencies of the United Nations such as World Health Organization (WHO) Food and Agricultural Organization (FAO), United Nations Development Programme (UNDP) and United Nations Educational Scientific and Cultural Organization (UNESCO).
- **Government Publications:** The most important sources of secondary data are the publications of the Government of India, State Governments and District Bulletins. Exp: National Sample Survey reports, Weather reports and Statistical Abstracts by State Governments, and Periodical reports published by different commissions.
- **Semi-Government Publications:** In this category the publications and reports of Corporations, Boards, Urban Development Authorities etc. are the sources of secondary data.
- **Private Publications:** The research reports, surveys, year—books and monographs are published by private organizations.
- **Newspapers and Periodicals:** The daily newspapers and periodicals or magazines are easily accessible to the sources of secondary data.

2. **Unpublished Sources:** Sometimes the papers or findings which prepared by researchers are kept unpublished in the institutions or universities.

- **Government Documents:** The reports, papers, findings, monographs and documents are prepared and maintained as unpublished records at different levels of Governance.
- **Semi-Government Records:** The Corporations, Boards, District Councils and Civil Departments prepare and maintain the periodical reports and the development plans.
- **Private Documents:** The companies, trade unions, different political and non-political organizations and resident welfare associations are having unpublished reports and records.

3. Distinguish between primary and secondary data.

ANS: Any facts and figures of an object or a place or something are called data.

Primary Data.	Secondary Data.
1. The data which are collected for the first time by a researcher or group of researchers, institutions, or organization are called Primary data. **2.** These are original in character and first-hand information. **3.** It can be collected through Personal interview. By Observation. By Questionnaire. By other method.	**1.** The data have been collected and analysed already by some departments, organization, NGO's etc., **2.** Secondary data cane classified into two types 1. Published source. International Publications, Government Publications, Semi – Government Publications, Private publications like newspaper and articles. 3. Unpublished Source.

4. Explain the components of GIS.

ANS: GIS is a computer based technology designed with software, hardware, data, procedure, network and people to capture, store, retrieve, manipulate, analyse, model and display of spatially referenced data on the earth's surface for solving complex planning and management problems.

Components of GIS:

1. **Data:** geographical data can be divided into three types.
   - **1)** Spatial Data: any data which is associated with a specific geographic laocaton.
   - **2)** Non-spatial Data: any data which is not associated with a specific geographic location.
   - **3)** Continuous Data: The data witches have no discrete boundaries and have fuzzy boundaries like soil, atmospheric temperature and land elevation.

2. **Software:** are the programs designed to run the computer. However, GIS software is designed to collect, store, process geographical data and construct maps. Exp ArcGIS Arc IGIS, Arc Map. ERADAS etc.
3. **Hardware:** it comprises storing and processing devices like Central process unit(CPU), Monitor, Key board, Mouse, Scanner, Printer, Hard Disk, DVD Drive etc,.
4. **People:** this component consists of the skilled people who involves in data capturing, processing and analysing.
5. **Analysis:** it involves the processing of GIS data with various analyses so as to get meaningful information.

5. Explain the functions of GIS.

ANS: GIS functions are a collection of set of process it include following process

1. **Capture Data:** graphic data can be collected from various sources like hard copy map through Tophosheet, Digital Data through satellite imageries, field work through GPS, Secondary data through Published tables etc Data can be collected individually by or group.
2. **Storing Data:** graphic data once captured it needs to transform analogy into digital format and to be stored in computer for further analysis. Data input in GIS involves encoding both the locational and attribute data.
3. **Query:** once we have functional graphic information we can ask simple questions.
4. **Analysis:** there are several analysis are there.
    - **A.** Proximity Analysis.
    - **B.** Overlay Analysis.
    - **C.** Network Analysis.
1. **Display:** once analysis is done maps, diagram, graphs and tables are to be designed and same has to be displayed over computer monitor.
2. **Out Put:** this is final stage of the GIS function where in the maps, data, tables etc. can be printed to have hard copy as output.

6. Explain the segments of GPS.

ANS: Global Position System (GPS) is a signalled based navigational system to determine the position of an area of the earth's surface. The satellite-based navigation system was developed by the Department of Defence, US. the co-ordinates of the points for the GPS determined through the geographic calculation of triangulation.

Segments of GPS: there are 3 important segments are there.

1. **Space Segment:** the satellites of GPS are launched and positioned at an altitude of approximately 20200km. the space segment consists of 24 functioning GPS satellites located in 6 orbital planes with 4 Satellite each orbital plane and all satellites are inclined about 63degree to the equator. At least 4 satellites are available at any unobstructed site on the earth any time of the day.
2. **The Control Segments:** it is important fo healthy monitoring, telemetry, tracking, command, and control clock error computation of satellite. There are 5 ground GPS stations spread over the earth's surface they are:
    A. Hawaii
    B. Colorado spring
    C. Ascension Islands
    D. Diego Gracia
    E. Kwajalein
3. **The User Segment:** it is a total user and supplier community, both civilian and military. It consists of all the earth GPS receivers.

7. Explain the application of GPS.

ANS: Global Position System (GPS) is a signalled based navigational system to determine the position of an area of the earth's surface.

GPS Application:

1. **Navigation:** by using GPS can save countless hours in the field. Any feature, even if it is under water, can be located up to one hundred meters simply by coordinates from a map, entering waypoints and going directly to the site.

2. **Remote Sensing and GIS:** GPS positioning can be integrated into remote sensing methods such as photogrammetry and aerial scanning, magnetometry and video technology.
3. **Surveying/Mapping:** the high precision of GPS carrier phase measurement, together with appropriate adjustment algorithms, provides an adequate tool for a variety of tasks for surveying and mapping.
4. **Geodesy:** geodetic mapping and other control surveys can be carried out effectively using high –grade GPS equipment. Especially when helicopters were used or when the line of sight is not possible, GPS can set new standards of accurate and productivity.
5. **Military:** the GPS was primarily developed for real time military positioning. Military applications include airborne, marine and land navigation.

8. Explain the elements of Remote Sensing.

ANS: Remote sensing is the science and art of obtain information about an object, area or phenomenon through the analysis of data acquired by a device that is not in contact with it.

Elements of Remote Sensing:

1. **Energy Source or Illumination:** the first requirement for remote sensing is to have an energy source which illuminates or provides electromagnetic energy to acquire information of the earth's surface.
2. **Radiation and the Atmosphere :** as the energy travels from its source to the target, it will come in contact with and interact with the atmosphere it passes through.
3. **Interaction with the target :** once the energy makes its way to the target through the atmosphere, it interacts with the target depending on the properties of both the target and the radiation.
4. **Recording of Energy by the Sensor :** after the energy has been scattered by or emitted from the target we require a sensor to collect and record the electromagnetic radiation.
5. **Transmission, Reception and Processing :** the energy recorded by the sensor has to be transmitted often in electronic form to a receiving and processing station where the data are processed into an image.
6. **Interpretation and Analysis :** the processed image is interpreted visually and or digitally or electronically, to extract information about the target which was illuminated.
7. **Application :** the final element of the remote sensing process is achieved when we apply the information to better understand it and solve a particular problem.

9. Write the Importance of Remote Sensing.

ANS:

1. Satellites are the main sources of data collection for detail study of phenomena related to earth surface.
2. Through satellite we can collect data related to agriculture, forest, urban land use/ land cover, water, natural calamities etc.
3. The satellite date is based for mapping, monitoring, studying, the various phenomena related of earth's surface.
4. Satellite data is batter because it gives wide area coverage, frequent revisits, high resolution, timely delivery, low labour force and storage in digital format to support GIS technology.

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