Class 10th
Revision Notes
Geography 2019-20

Geography **Chapter-1**
Resources and Development

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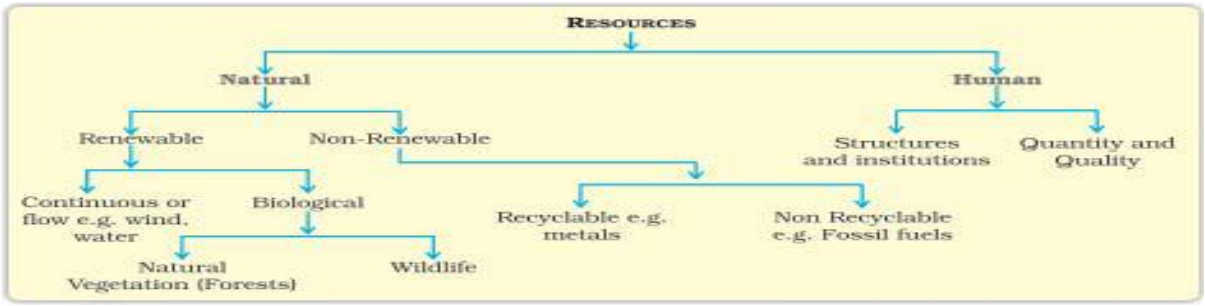
1. **Resource:** Everything available in our environment which can be used to satisfy our needs, provided, it is technologically accessible, economically feasible and culturally acceptable can be termed as 'Resource'.

2. **TYPES OF RESOURCES :** These resources can be classified in the following ways –



(a) On the basis of origin – biotic and abiotic
(b) On the basis of exhaustibility – renewable and non-renewable
(c) On the basis of ownership – individual, community, national and international
(d) On the basis of status of development – potential, developed stock and reserves.

- Biotic Resources obtained from biosphere and have life such as human beings, flora and fauna, fisheries, livestock etc.
- All those things which are composed of non-living things are called abiotic resources. For example, rocks and metals.
- Renewable Resources can be renewed or reproduced by physical, chemical or mechanical processes For example, solar and wind energy, water, forests and wildlife, etc.
- Non-Renewable Resources occur over a very long geological time. Minerals and fossil fuels are examples of such resources. These resources take millions of years in their formation.
- Individual Resources are owned privately by individuals. Example: Many farmers own land which is allotted to them by government against the payment of revenue.
- Community Owned Resources are resources which are accessible to all the members of the community. Example: Village commons (grazing grounds, burial grounds, village ponds, etc.) public parks, picnic spots,playgrounds in urban areas etc.
- National Resources Technically, all the resources belong to the nation. The country has legal powers to acquire even private property for public good.
- International Resources are international institutions which regulate some resources. The oceanic resources beyond 200 km of the Exclusive Economic Zone belong to open ocean and no individual country can utilise these without the concurrence of international institutions.
- Potential Resources: Resources which are found in a region, but have not been utilised. For example, the western parts of India particularly Rajasthan and Gujarat have enormous potential for the development of wind and solar energy, but so far these have not been developed properly.

- Developed Resources Resources which are surveyed and their quality and quantity have been determined for utilisation.

3. **DEVELOPMENT OF RESOURCES**

Resources are vital for human survival as well as for maintaining the quality of life. It was believed that resources are free gifts of nature. Human beings used them indiscriminately and this has led to the following major problems:

- Depletion of resources for satisfying the greed of few individuals.
- Accumulation of resources in few hands, which, in turn, divided the society into two segments i.e. haves and have nots or rich and poor.
- Indiscriminate exploitation of resources has led to global ecological crises such as, global warming, ozone layer depletion, environmental pollution and land degradation.

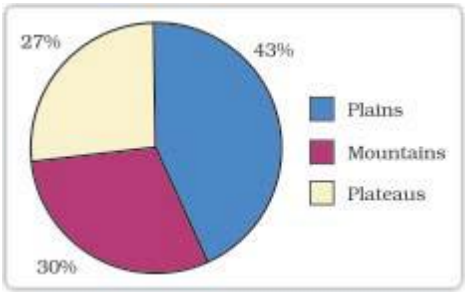
4. **Resource Planning in India :** It involves :

- identification and inventory of resources across the regions of the country. This involves surveying, mapping and qualitative and quantitative estimation and measurement of the resources.
- Evolving a planning structure endowed with appropriate technology, skill and institutional set up for implementing resource development plans.
- Matching the resource development plans with overall national development plans.

5. **Conservation of Resources:**

- Resource conservation at various levels is important.
- Gandhiji was very apt in voicing his concern about resource conservation in these words: “There is enough for everybody’s need and not for any body’s greed.”

6. **LAND UTILISATION**



Land resources are used for the following purposes:

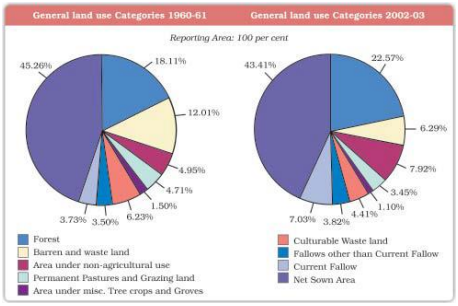
- Forests
- Land not available for cultivation
  (a) Barren and waste land
  (b) Land put to non-agricultural uses, e.g. buildings, roads, factories, etc.
- Other uncultivated land (excluding fallow land)
  (a) Permanent pastures and grazing land,
  (b) Land under miscellaneous tree crops groves (not included in net sown area),
  (c) Cultruable waste land (left uncultivated for more than 5 agricultural years).
- Fallow lands

(a) Current fallow-(left without cultivation for one or less than one agricultural year),
(b) Other than current fallow-(left uncultivated for the past 1 to 5 agricultural years).

- Net sown area

Area sown more than once in an agricultural year plus net sown area is known as gross cropped area.

7. **Land use Pattern in India :**



- Total geographical area of India is 3.28 million sq. km.
- Land use data however is available only for 93% of the total area because the land use reporting far most of the North-East States except Assam has not been done fully.
- Some area of Jammu and Kashmir occupied by Pakistan and China have also not been surveyed.
- The land under permanent pasture has also decreased.
- Fallow land - left without cultivation far one or less than one agricultural year.
- Net sown area total -total area sown in an agricultural year.
- More net sown area in Punjab and Haryana.
- Less net sown area in Arunachal Pradesh, Mizoram, Manipur and Andaman
- Nicobar Islands.
- National Forest Policy in India in 1952.
- Waste land includes rocky, Arid and desert area and land put to other non agricultural uses includes settlements, roads, railways, industry etc.
- Continuous use of land over a long period of time without taking appropriate measures to conserve and manage it.

8. **LAND DEGRADATION AND CONSERVATION MEASURES**

- At present, there are about 130 million hectares of degraded land in India.
- Some human activities such as deforestation, over grazing, mining and quarrying too have contributed significantly in land degradation.
- In states like Jharkhand, Chhattisgarh, Madhya Pradesh and Orissa deforestation due to mining have caused severe land degradation.
- In states like Gujarat, Rajasthan, Madhya Pradesh and Maharashtra overgrazing is one of the main reasons for land degradation.
- In the states of Punjab, Haryana, western Uttar Pradesh, over irrigation is responsible for land degradation.

Geography **Chapter-2**
Agriculture

Agriculture is a primary activity which produces most of the food that we consume besides food grain it also produces raw material for various industries.
Some agriculture product like tea, coffee, spice, etc...

Types of farming:

Cultivation method has changed significantly depending upon the characteristics of physical environmental, technological know – how and socio – culture practices. Farming various from subsistence to commercial type. At present in different parts of India.

Primitive Subsistence Farming:

This type of farming is still practiced in few pockets of India
1. The help of primitive tools like hoe dao and digging sticks, and family /community labour.
2. This type of farming depends upon monsoon, natural fertility of the soil and suitability of other environmental conditions to the crops grown.
3. It is 'salsh and burn' agriculture.
4. The soil fertility decreases.
5. The farmers shift and clear a fresh patch of land for cultivation.

Intensive Subsistence Farming:

1. This type of farming is practiced is areas of high population pressure on land .
2. It is labour intensive farming.
3. The biological inputs and irrigation are used for obtaining higher production.
4. There is enormous pressure on agriculture land.

Commercial Farming:

1. This type of farming is the use of higher doses of modern inputs.
2. The degree of commercialization of agriculture various from one region to another.
3. A single crop s grown on a large area.
4. The help of migrant labourers.
5. The produces is used as raw material in respective industries.

Cropping Pattern:

1. These are also reflected in agricultural practices and cropping pattern in the country.
2. India has three cropping seasons – rabi, kharif and zaid.
3. Rajasthan has also been an important factor in the growth of the above-mentioned rabi crops.
4. The crops produced during 'zaid' are watermelon, muskmelon, cucumber, vegetables and fodder crops.

Major crops:

Major crops grown in India are rice, wheat, millets, pulses, tea, coffee, sugarcane, oil seeds. Cotton and jute, etc.,

Non – Food Crops:

Rubber:

1. It is an equatorial crop, but under special conditions.
2. It requires moist nd humid climate with rainfall of more than 200cm. and temperature above 25°C

Fibre Crops:

1. Cotton, jute, hemp and natural silk are the four major fibre crops grown in India.
2. Rearing of silkworms for the production of silk fibre is known as sericulture.

Cotton:

1. India is belived to be the original home of the cotton plant.
2. In 2008 India wass second largest producer of cotton after china.

Jute:

1. It is known as the golden fibre.
2. It is losing market to synthetic fibres and packing materials, particularly the nylon.

Technological and Institutional Reforms:

1. The pace of agricultural development.
2. Agriculture which provides a livelihood for more than 60 per cent.
3. The government of India embarked upon introducing agricultural in the 1960s and 1970s
4. The government also announces minimum support prices remunerative and procurement prices for important crops.
5. Consolidation of holdings, cooperation and abolition of zamindari, etc. were given priority to bring about institutional reforms in the country after independence.
6. The green revolution based on the use of package technology and the white revolution (operation flood) were some of the strategies initiated to improve a lot of Indian agriculture.
7. Land reform was the main focus of our first five-year plan.
8. Development in few selected areas. In the 1980s and 1990s, a comprehensive land development programme was initiated, which includes both institutional and technological reforms.
9. Provision for crop insurance against drought, flood, cyclone, fire and disease.
10. Establishment of Grameen Banks, cooperative societies and banks for providing loan facilities to the farmers at lower rates of interest.
11. Kissan credit cards and personal accident insurance schemes introduced.
12. Special weather bulletins and agricultural programmes for farmers were introduced on radio and T.V.
13. The government also announces minimum support price.
14. Remunerative and procurement prices for important crops to check the exploitation of farmers by speculators and middleman.

Contribution of agriculture to the national economy, employment and output:

1. Gross Domestic Product has registered a declining trend from 1951 onwards.
2. The population continues to be as high as 63 per cent in 2001.
3. The government of India made concerted efforts to modernize agriculture in India.
4. India made concerted efforts to modernize agriculture Establishment of Indian Council of Agriculture.
5. The growth rate in agriculture is decelerating which is an alarming situation.
6. Agriculture backbone of Indian Economy.

7. Share in the gross domestic product.
8. Providing employment.
9. Livelihood to the population.
10. The government of India made concerted efforts to modernize agriculture.
11. Establishment of Indian Council of Agricultural Research, agricultural universities.
12. Veterinary services and animal breeding centers.
13. Horticulture development.
14. Research and development in the field of meteorology and weather forecast.

Food Security:

1. The number of people who do not have food security is disproportionately large in some region of our country particularly in economically less developed states with the higher incidence of poverty.
2. The focus of the policy is on fixing the support price for procurement of wheat and rice to maintain their stocks. Food Corporation of India.
3. The FCI procures food grains from the farmers at the government announced minimum support price.
4. The competition for land between non – agriculture uses such as housing etc.,
5. The farmers are badly affected by the uncertainties of production and market.
6. The higher the supply the lower is the demand.

Impact of Globalisation on Agriculture:

1. Globalisation is not a new phenomenon.It was there at the time of colonisation.
2. Till today it is one of the important items of export from India.
3. Cotton textile industry in Manchester and Liverpool flourished due to the availability of good quality cotton from India.
4. The Champaran movement which started in 1917 in Bihar.
5. Under globalisation, particularly after 1990, the farmer in India have been exposed to new challenges.

Geography **Chapter-3**

Minerals Energy Resources

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1. Various metals are extracted from these minerals after proper refinement.
2. Minerals are an indispensable part of our lives.
3. The railway lines and the tarmac(paving) from building or a big ship all are tarmacs of the roads.
4. Even the food that we eat contains minerals.
5. Minerals are found in varied forms in nature ranging from the hardest diamond to the softest talc.
6. Rock are combinations of homogeneous substances called minerals.
7. Over 2000 minerals have been identified only a few are abundantly found in most of the rocks.
8. Geologists use these properties to classify the minerals.

Mode of Occurrence Of Minerals:

Minerals are usually found in "ores". The term ore is used to describe an accumulation of any minerals mixed with other elements.

This also determines the cost of understanding the main types of formations in which the main types of formations in which occur.

i. In igneous and metamorphic rocks minerals may occur in the cracks crevices faults or join the smaller occurrences are called Veins and the larger are called Lodes.
ii. In sedimentary rocks a number of minerals occur in beds or layers They have been formed as a result of deposition accumulation and concentration in horizontal strata.
iii. Another mode of formation involves the decomposition of surface rocks and the removal of soluble constituents leaving a residual mass of weathered material containing ores.
iv. Certain minerals may occur as alluvial deposits in sands of valley floors and the base of hills.
v. The ocean waters contain vast quantities of minerals to be of economic signification Common salt, Magnesium and water. The ocean beds, too are rich manganese nodules.

Ferrous Minerals:

Ferrous minerals account for about three-fourths of the total value of the production of metallic minerals.

Iron Ore:

1. Iron ore is the basic minerals and the backbone of industrial development
2. The finest iron ore with a very high content of iron up to 70 percent.
3. In the adjoining Singbhum districts of Jharkhand, haematite iron ore is mined in GUA and Noamundi.
4. Durg – Bastar – Chandrapur belt lies in Chhattisgarh and Maharashtra. Very high-grade hematites are found in the Bastar district of Chattisgarh.
5. The Kudermukh mines located on the western ghats of Karnataka deposits are known to be one of the largest in the world
6. Maharashtra – Goa belt includes the state of gos and Ratnagri istrict of Maharshtra.
7. Iron ore is exported through Marmago port.

Manganese:

Manganese is mainly used in the manufacturing of steel and ferro – manganese alloy. Nearly 10 kg of manganese is required to manufacture bleaching powder and paint.

Non – Ferrous Minerals:

India's reserves and production of non – ferrous minerals is not very satisfactory.

Copper:

India is critically deficient in the reserve and production of copper. Being malleable, ductile and a good conducter, copper is mainly used in electrical cables, electrons and chemical industries.

Bauxite:

1. Several ores contain aluminum it is formed bauxite a clay – like substance that alumina and later aluminum is obtained.
2. Bauxite deposits are formed by the decomposition of a wide variety of rocks rich in aluminum silicates.
3. India's bauxite deposit is mainly found in the Amarkanatk plateau.
4. Orissa is the largest bauxite producing state in India with 34.97 per cent of the country's total production in 2000 – 01.

Non – Metalic Minerals:

1. Mica is a mineral made up of a series of plates or leaves. It splits easily into thin sheets.
2. Mica can be clear, black, green, red yellow or brown.
3. Mica is one of the most indispensable minerals used in electric and electrons industries.
4. Mica deposits are found in the northern edge of the Chota Nagpur Plateau, Koderma Gaya – Hazaribagh belt of Jharkhand is the leading producer.
5. In Rajasthan, the major mica producing area is around Ajmer.

Rock Minerals:

Limestone is found in association with composed of calcium carbonates or calcium and magnesium carbonates.

Conservation Of Minerals:

1. The strong dependence of industry and agriculture upon mineral deposits and the substances manufactured from them.
2. The total volume of workable mineral deposits is an insignificant fraction.
3. The rates of replenishment are infinitely small in comparison.
4. A concerted effort to be made in order to use mineral resources in a planned and sustainable manner.

Energy Resources:

1. Energy is required for all activities, It is needed to cook to provide light and heat to propel.
2. Energy can be generated from fuel minerals like coal, petroleum from fuel mineral like coal, petroleum, natural gas, uranium and from electricity.
3. It consumes most valuable manure which could be used in agriculture.

Conservation Sources Of Energy:

Coal:

1. The most abundantly available fossil fuel. It provides a substantial part of the nation's energy needs.
2. Lignite is a low-grade brown coal which is soft with high moisture content.
3. Anthracite is the highest quality hard coal.
4. A little over 200 million years in age and in tertiary deposits which are only about 55 million years old.

Petroleum:

1. Petroleum or mineral oil is the next major energy source in India after coal.
2. Petroleum refineries act as a "nodal industry" for synthetic textile, fertile and numerous chemical industries.
3. The oil is prevented from rising or sinking by intervening non – porous layer.
4. About 63 per cent of India's petroleum production is from Mumbai High, 18 per cent from the map locates the 3 major off shore field of western India.

Natural Gas:

1. Natural gas is an important clean energy resource found in association with or without petroleum.
2. It is used as a source of energy as well as an industrial raw material in the petrochemical industry.
3. The fuel for the present century.
4. Andaman and Nicobar are land are also important areas having large reserves of natural gas.
5. The 1700 km long Hazira – Vijaipur Jagdishpur cross country gas pipeline links Mumbai High and Bassien with the fertilizer power and industrial complexes in western and northern India.
6. The power and fertilizer industries are the key users of natural gas.

Electricity:

1. Electricity has such a wide range of application in today's world that its per capita consumption is considered as an index of development.
2. Electricity is generated mainly in two ways by running water.
3. Burning of fuels such a coal petroleum gas to drive turbines to produce thermal power.
4. Hydro electricity is generated by fast flowing water.
5. Thermal electricity is generated by using coal, petroleum and natural gas
6. There are over 310 thermal power plants in India.

Non – Conventional Sources of Energy:

1. The growing consumption of energy has resulted in the country becoming increasingly dependent on fossil fuel such as coal oil and gas.
2. There is a pressing need to use renewable energy sources like solar energy, wind, tide, biomass and energy from waste material.
3. These are called non – conventional energy sources.
4. These are called non – conventional energy sources.

Nuclear or Atomic Energy:

1. It is obtained by altering the structure of atoms.

2. The form of heat and this is used to generated electric power.
3. The Aravalli ranges of Rajasthan are used for generating atomic or nuclear power.
4. The Monazite sands of Kerala is also rich in Thorium.

Solar Energy:

1. India is a tropical country. It has enormous possibilities of tapping energy.
2. Photovoltaic technology converts sunlight directly into electricity.
3. In turn will contribute to environmental conservation and adequate supply of manure in agriculture

Wind Power:

1. India now ranks as a "wind super power" the world.
2. The largest wind farm cluster is located in Tamil Nadu from Nagercoil to Madurai.
3. Nagercoil and Jaisalmer are well known for the effective use of wind energy in the country.

Biogas:

1. Shrubs, farm waste, animal and human waste are used to produce biogas for domestic consumption I rural areas.
2. The plant using cattle dung are know a 'Gobar gas plant' in rural India.
3. It improves the loss of trees and manure due to the burning of fuel wood and cow dung cakes.

Tidal Energy:

1. Oceanic tides can be used to generate electricity. Floodgate dams are built across intellect.
2. The sea via a pipe that carries it through a power generating turbine.
3. A 900 MW tidal energy power plant is setup here by the National Hydropower Corporation.

Geo Thermal Energy:

1. Geothermal energy refers to the heat and electricity produced by heat from the interior of the earth.
2. It is so hot that when it rises to the earth's surface it turns into steam.
3. This stem is used to drive turbines and generate electricity.

Conservation of Energy Resources:

1. Energy is a basic requirement for economic development.
2. The economic development plans implemented since Independence necessarily required increasing amounts of energy to remain operational.
3. Promotion of energy conservation and increased use of renewable energy sources are the twin planks of sustainable energy.
4. India is presently one of the least energy efficient countries I the world
5. Energy saved is energy produced.

Geography **Chapter-4**

Manufacturing Industries

I. Importance of Manufacturing :

A. Manufacturing sector is considered the backbone of development in general and economic development because-

- Manufacturing industries help in modernizing agriculture.
- They reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.
- Helps in eradication of unemployment and poverty.
- Helps in bringing down regional disparities by establishing industries in tribal and backward areas.
- Exports of manufactured goods expand trade and commerce and bring much-needed foreign exchange.
- India should convert its raw materials into a wide variety of furnished goods in order to prosper.

B. Agriculture and Industry go hand-in-hand. For example, in agro-industries, agriculture helps industries by providing raw materials and industries provide products such as irrigation pumps, fertilizers, pesticides, etc.

C. We can compete with international markets, if our manufactured products are at par in quality with international products.

II. Contribution of Industry to National Economy:

The desired growth rate for industry is 12 percent in the coming decade. The National Manufacturing Competitiveness Council (NMCC) has been set up with this objective. Government Policy interventions and renewed efforts by the industry for productivity will help manufacturing achieve its desired growth rate.

III. Industrial Location:

Industries are not found everywhere. They are located at certain places only where they get favourable conditions to thrive. Industrial Location is governed mainly by the following factors:

- Raw Materials
- Source of Energy
- Source of Water
- Availability of Capital and Finance
- Demand in Market
- Skilled Labourers and Workers
- Banking and Insurance
- Transport and Communication

Many industries come together at urban centres to make use of the advantages. These are known as **"agglomeration economies".**

IV. Types or Classification of Manufacturing Industries:

A] On the basis of Raw Materials:

1. Agro Based: Those industries where raw materials come from agriculture, e.g. Cotton, Woolen, Jute, Silk Textiles, Sugar, Tea, Edible Oil

2. Mineral Based: Those industries where minerals are used as raw materials, e.g. Iron & Steel, Cement, Aluminum, Machine Tools etc.

B] On the basis of their Main Role:

1. Basic Industries: Those industries which provide raw material to other industries are called basic industries. These industries help the development of other industries, e.g. Iron and Steel, Copper and Aluminum Smelting

2. Consumer Industries: Those industries which produce goods for consumers are called consumer industries. Finished goods of these industries are directly sold in the market for consumers, e.g. Sugar, Toothpaste, Soap, Bread, Paper etc.

C] On the basis of Capital Investment:

1. Small Scale Industries: Those industries where investment of capital is less than Rupees one crore are called as small scale industries, e.g. Mat, Furniture, Toys, Bread, Tools etc.

2. Large Scale Industries: Those industries where investment of capital is more than Rupees one crore are called as large scale industries, e.g. Iron & Steel, Petrochemicals, Cotton Textiles etc.

D] On the basis of Ownership:

1. Public Sector: These industries are owned, operated and maintained by Govt. e.g. BHEL, SAIL, IISCO

2. Private Sector: These industries are owned, operated and maintained by individual or group of individuals, e.g. TISCO, Bajaj Auto Ltd., etc.

3. Joint Sector: These industries are jointly run by Govt. and group of individuals. It is mixture of public and private sector, e.g. Oil India Ltd. [OIL].

4. Cooperative Sector: These industries are owned, operated and maintained by supplier of raw materials and workers of the industries, e.g. Sugar industries in Maharashtra, Coir industries in Kerala.

E] On the basis of Finished Goods [Output]:

1. Heavy Industries: Those industries which use heavy and bulky raw materials and produce heavy goods in large quantity are called heavy industries, e.g. Iron and Steel, Copper Smelting.

2. Light Industries: Those industries which use light and small raw materials and produce light goods are called light industries, e.g. Electrical, Toys, Tools, Utensils etc.

V. Agro-Based Industries:

Cotton Textile Industry:

- It is an agro-based and the oldest industry in India.
- First cotton mill was established in 1854 in Mumbai.
- At present, it the largest industry in our country. There are about 1600 cotton textile mills in our country. Cotton textile mills are mainly concentrated in Maharashtra and Gujarat due to favourable conditions. Important centres are Mumbai, Pune, Ahmedabad, Surat, Rajkot etc. Other centres are Agra, Kanpur, Hugli, Chennai, Madurai etc.
- Cotton textile is produced by three methods in India: a) Handloom, b) Power-looms and c) Mills
- Cotton textile industry involves ginning, spinning, weaving, dyeing, designing, tailoring and packaging to produce readymade garments.

- India exports yarn and readymade garments to USA, Japan, UK, France, Nepal, Sri Lanka etc.
- Cotton textile industries are facing many problems such as: a) scarcity of good quality cotton, b) main cotton growing area went to Pakistan, c) old machinery, d) erratic power supply, e) low productivity of labour, f) tough competition from synthetic fibers.

Jute Textiles and its problems:

- India is the largest producer of raw jute and jute goods. There are about 70 jute mills in our country.
- First jute mill was setup in Rishra [Kolkata] in 1859.
- Most of the jute mills are located along Hugli River in West Bengal due to favourable conditions. Jute is used in making rope, bags, carpets etc. Bihar, UP, Assam and Tripura also have jute mills.
- Jute industries are facing problems like: a) main jute producing area went to Bangladesh, b) high production cost, c) declining demand of jute in international market, d) tough competition from synthetic fiber industry.

Jute industries are located mainly along Hooghly River because:

There are 69 jute mills located in a 2 km broad belt along Hooghly River.
This area provides many favourable conditions required for this industry.
a) Raw jute is available for West Bengal. West Bengal is the largest producer of jute.
b) Coal for energy is brought from nearby Raniganj Coalfields.
c) Hooghly River provides water for washing and cleaning jute.
d) Warm and humid climate is very favourable for cultivation of jute.
e) Kolkata is a metro city which provides capital and market.
f) Hooghly River also provides cheap water transport.

Sugar industry:

Earlier UP and Bihar were the main producers of sugarcane. Therefore, most of the sugar mills were located in these two states only. But now, sugar mills are shifting towards Maharashtra and Karnataka because:

a) Per hectare production of sugarcane is higher in southern India. Black soil is quite suitable for cultivation of sugarcane.
b) Sucrose content in the sugarcane is higher in Maharashtra and Karnataka. It means more sugar can be produced for less sugarcane.
c) Mills and machines are new in southern states. New and modern machines increase the productivity.
d) Crushing season for sugarcane is longer in southern states.
e) Cooperative sugar mills are running successfully in southern states.

VI Mineral Based Industries:

Iron & Steel Industry and its problems:

- This industry is called as basic industry because it provides raw material to many other industries such as machine tools, transport equipment, construction material etc.
- It is also called as heavy industry because raw materials [iron ore, coal, limestone] are bulky in nature.

- Iron ore mixed with limestone is smelted in the blast furnace using coking coal to produce pig iron. The ratio of iron ore, limestone and coking coal used in 4:2:1. Pig iron is mixed with manganese, chromium and nickel which make it more stronger steel.
- Most of the steel plants are located in Chotanagpur region due to its favourable conditions.
- Important integrated steel plants are Jamshedpur, Durgapur, Bokaro, Bhilai, Burnpur etc.
- India produces about 33 million tons of steel every year even though per capita consumption of steel is very low i.e. 32 kg. It is low because India has low economic and industrial development.
- Today steel industries in India are facing many problems: a) High cost of production, b) Limited availability of coking coal, c) Low productivity of labour, d) Irregular supply of energy, e) Raw materials are found in a certain pockets of India only, f) Poor infrastructure like transport and communication etc.

Aluminum Smelting:

- It is the second most popular metallurgical industry in India
- The raw material used is a bulky dark reddish rock known as bauxite.
- It is light, corrosion resistant and a good conductor of heat and is malleable.
- It becomes stronger when mixed with other metals.
- It is used to manufacture aircraft, utensils and wires.
- Major sources are located in Orissa, West Bengal, Kerala, UP, Chattisgarh, Maharashtra and Tamil Nadu.

Chemical Industry:

- Contributes approximately 3 percent of annual GDP.
- In terms of size, it is the third largest industry in Asia and the twelfth largest in the world.
- Organic and inorganic sectors of the industry are rapidly growing. Organic chemicals include petrochemicals. Inorganic chemicals include sulphuric acid, nitric acid, alkalis, soda ash, caustic soda, etc.

Fertiliser Industry:

- India is the third largest producer of nitrogenous fertilizers.
- Fertiliser industry is centred around the production of nitrogenous fertilisers, phosphatic fertilisers and ammonium phosphate and complex fertilisers. Complex fertilisers have a combination of nitrogen (N), phosphate (P) and potash (K). Potash is entirely imported because India does not have any reserves of commercially viable potash or potassium compounds.

VII.Cement Industry:

- Cement industry requires bulky raw materials like limestone, silica, alumina and gypsum.
- There are many cement plants in Gujarat because of proximity to ports.
- There are 128 large and 323 mini cement plants in India.
- Improvement in quality has found the Indian cement a readily available market in East Asia, Middle East, Africa and South Asia. This industry is doing well in terms of production as well as export.

VIII Automobile Industry:

- After liberalisation, many automobile manufacturers set their base in India.

- At present, there are 15 manufacturers of cars and multi-utility vehicles, 9 of commercial vehicles, 14 of two and three-wheelers.
- Delhi, Gurgaon, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur, Bangalore, Sanand, Pantnagar, etc. are the major centres of automobile industry. **IX Information Technology and Electronics Industry:**
- Bangalore is often termed as the electronic capital of India. Mumbai, Pune, Delhi, Hyderabad, Chennai, Kolkata, Lucknow and Coimbatore are the other important centres. There are 18 software technology parks in the country and they provide single window service and high data communication to software experts.
- This industry had generated a large number of employment. Upto 31 March 2005, over one million persons were employed in the IT industry. Because of fast growth of BPO (Business Process Outsourcing); this sector has been a major earner of foreign exchange.

X Industrial Pollution and Environmental Degradation:

a) Air pollution is caused by the emission of CO2, Carbon Monoxide, Sulphur Dioxide etc. Chimneys of the industries produce heat leading to Global Warming and Green House Effect. The use of CFC in various industrial products depletes ozone layer which filters ultraviolet rays of the sun.

b) Dumping of organic and inorganic industrial waste into water bodies pollutes the water. Industries which produce paper, pulp, chemical, leather, acids, dyes, fertilizers etc generate lots of toxic waste which kills the aquatic life.

c) High intensity sound generated by running machines, sirens, drilling, fans etc leads to noise pollution. It causes irritation, hearing impairment, heart attack etc. among the nearby residents.

d) Mining activity to get raw material for industries also degrades the environment. Land degradation, deforestation, soil erosion, water logging etc. are the results of mining activities.

XI Measurement [Methods] for Controlling Environmental Pollution and Degradation:

a) Industries should be located with careful planning and better design.

b) Quantity of smoke can be reduced by using oil instead of coal.

c) Non-conventional sources of energy should be used instead of fossil fuels.

d) Modern equipment should be used which controls, filters and separates harmful materials from the waste.

e) Waste water should be properly treated before discharging into rivers.

f) Land filling method should be adopted for dumping of waste.

g) Polluting industries should be located away from towns and cities.

Geography **Chapter-7**

Lifelines of National Economy

I. Roadways :

India has one of the largest road networks in the world. Its importance can be viewed.

(i) Construction cost of roads is much lower than that of railway lines

(ii) Roads can traverse comparatively more dissected and undulating topography.

(iii) Roads can negotiate higher gradients of slopes and as such can traverse mountains such as the Himalayas.

(iv) It is economical in transportation of few persons and relatively smaller amount of goods over short distances.

(v) It provides door to door services.

(vi) It is used as feeder to other modes of transport such as they provide a link between railway stations, air and sea ports.

Golden Quadrilateral Super Highways :

- The Govt. has launched a major road development project linking Delhi-Kolkata-Chennai-Mumbai and Delhi by six-lane super highways.
- The North-South corridors linking Srinagar [Jammu & Kashmir] &Kanyakumari [T.N.] & East-West Corridor Connecting silcher (Assam) &Porbander (Gujarat).
- The major objective of these super highways is to reduce time and distance.

These highway projects are being implemented by the National Highway Authority of India (NHAI).

- **National Highways**: National Highways link extreme parts of the country and are laid and maintained by the Central Public Works Department (CPWD).
- **State Highways:** State Highways link a state capital with different district headquarters and are constructed and maintained by the State Public Works Department (PWD) in State and Union Territories.
- **District Roads**: These roads connect the district headquarters with other places of the district and are maintained by the Zila Parishad.
- **Other Roads**:Rural roads, which link rural areas and villages with towns. These roads received special impetus under the Pradhan Mantri Grameen Sadak Yojana.
- **Border Roads** :Border Roads Organisation a Government of India undertaking constructs and maintains roads in the bordering areas of the country.

II. Road Density

- The length of road per 100 sq. km of area is known as density of roads.
- Density of all roads varies from only 10 km in Jammu & Kashmir to 375 km in Kerala with the national average of 75 km (1996-97).

III. Railways :

- The distribution pattern of the railway network in the country has been largely influence by physiographic, economic and administrative factors.

- The Himalyan mountains regions are unfavorable for the construction of railway lines due to high relief, sparse population & each of economic opportunities.
- The northern plains having high population density, provide most favourable condition for their growth
- Rivers requiring construction of bridges across their wide beds posed some obstacles for the construction of railway lines.

IV.Pipelines :

- Pipelines transport network is a new arrival on the transportation map of India.
- Its initial cost is high but subsequent running costs are minimal.
- It is used for transporting crude oil, petroleum products & natural gas.
- It rules out trans-shipment losses and delays

Important Networks

1. Oil field in Assam to Kanpur (U.P.), via Guwahati, Barauni& Allahabad.
2. From Salaya in Gujarat to Jalandhar. In Punjab via Viramgam, Mathura, Delhi & Sonipat.
3. Gas pipelines from Hazira in Gujarat connects Jagdishpur in UP via Vijaypur in Madhya Pradesh.

V. Waterways

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

VI. Major Sea Ports

- With a long coastline of 7,516.6 km, India is dotted with 12 major and 181 medium and minor ports. Kandla in Kuchchh was the first port developed soon after Independence.
- Kandla is a tidal port. It caters to the convenient handling of exports and imports of highly productive granary and industrial belt Mumbai is the biggest port with a spacious natural and well-sheltered harbour.
- Marmagao port (Goa) is the premier iron ore exporting port of the country.New Mangalore port, located in Karnataka caters to the export of iron ore concentrates from Kudremukh mines. Kochi is the extreme south-western port, located at the entrance of a lagoon with a natural harbour.

VII. Air Ways:

- It can cover very difficult terrains like high mountains, dreary deserts, dense forests and also long oceanic stretches with great ease.
- The air transport was nationalised in 1953.
- Air India provides international air services.
- Pawanhans Helicopters Ltd. provides helicopter services to Oil and Natural Gas Commission in its off- shore operations, to inaccessible areas and difficult terrains like the north-eastern states and the interior parts of Jammu and Kashmir, Himachal Pradesh and Uttaranchal.

VIII. Communication:

- Personal communication and mass communication including television, radio, press, films, etc. are the major means of communication in the country.

- The Indian postal network is the largest in the world.Cards and envelopes are considered first–class mail.
- The second–class mail includes book packets, registered newspapers and periodicals.
- To facilitate quick delivery of mails in large towns and cities, six mail channels have been introduced recently.
- They are called Rajdhani Channel, Metro Channel, Green Channel, Business Channel, Bulk Mail Channel and Periodical Channel. India has one of the largest telecom networks in Asia.

IX. International Trade :

- The exchange of goods among people, states & countries is referred to as trade. Trade between two countries is called International Trade.
- Exports and imports are the components of trade. The balance of a trade of a country is the difference between its export and import.
- When the value of exports exceeds the value of imports, it is called favourable balance of trades.

X. Tourism as a Trade :

- Tourism has proved itself as one of the most important aspect of trade.
- Tourism in India has grown substantially.
- It helps as promotion of National Integration.
- Provide support to local handicrafts.
- Provides support to cultural pursuits.
- Development of international understanding about our culture and heritage.

Class 10th
Revision Notes
Geography 2019-20