

Social Studies

(Geography)

Chapter 6: Manufacturing Industries



Manufacturing Industries

Production of goods in large quantities after processing from raw materials to more valuable products is called manufacturing. Industries contribute tremendously to the growth of the country. Industries are included in the secondary sector because they manufacture finished goods from raw materials.

Importance of Manufacturing

Manufacturing sector is considered as the backbone of development in general and economic development because:

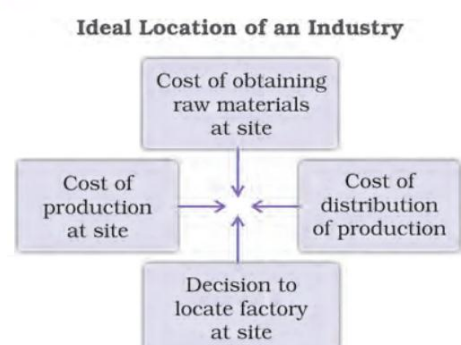
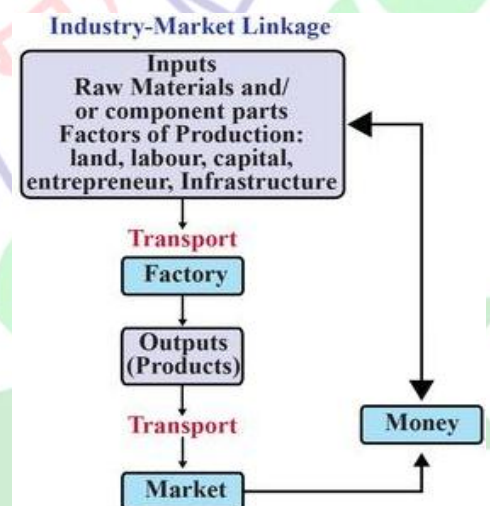
- It help in modernising agriculture, which forms the backbone of our economy. Also, reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors.
- It helps in eradication of unemployment and poverty from the country.
- Export of manufactured goods brings foreign exchange.
- It helps in transforming raw materials into a wide variety of furnished goods of higher value.

Contribution of Industry to National Economy

The total contribution of industry to the GDP is 27% out of which 10% comes from mining, quarrying, electricity and gas. The growth of the manufacturing sector had been 7% in the last decade. Since 2003, the growth rate has been 9 to 10% per annum.

Industrial Location

Industrial sites are inherently complex. They are affected by the availability of raw materials, labor, capital, power and market, etc. It is not often possible to find all of these available factors in the same location. As a result, manufacturing activity tends to be at the most appropriate location where all industrial location factors are available or can be arranged more cheaply. Cities provide markets and services such as banks, insurance, transportation, labour, consultants and financial advisory services, etc. to the industry. Many industries tend to join forces to take advantage of the advantages offered by urban centres called agglomeration economies. Progressively, a major industrial agglomeration is taking place. In the period prior to independence, most manufacturing units were located in places from the standpoint of foreign trade such as Mumbai, Kolkata, Chennai, etc. As a result, pockets of industrially developed urban centres, surrounded by an immense agricultural rural back country, have emerged.



Classification of Industries

Industries are classified into various categories on the basis of ownership of products, capital investments and nature of raw materials

Industries	Classification on the basis of	Examples
Agro-based	Raw materials (forest and agricultural raw materials are used)	Cotton textiles, jute textiles, tea
Mineral-based	Raw materials (minerals such as iron, bauxite are used)	Iron and steel companies, petrochemicals
Small-scale industries	Capital Investments	Cottage industries
Large-scale industries	Capital Investments	TISCO
Public Sector	Ownership (owned by the Government)	BHEL, SAIL
Private Sector	Ownership (owned privately by individuals)	Reliance, TISCO
Joint Sector	Ownership (owned by the Government and private individuals)	Oil India Ltd.
Cooperative Sector	Ownership (owned and operated by producers and suppliers)	Amul
Heavy Industries	Weight and bulkiness of raw materials	Automobile industries
Light Industries	Weight and bulkiness of raw materials	Electrical industries

Agro-based Industries

Cotton textiles, woollen textiles, jute and sugar industries are known as agro-based industries as they use agricultural products as raw materials.

Textile Industries

It's the only industry in India that is autonomous and comprehensive in the value chain, i.e. from raw materials into higher value-added products. It contributes to industrial production, employment creation and foreign exchange income.

It contributes 14% to industrial production in India and the second largest provider of employment opportunities after agriculture. It contributes 4% towards the GDP of the country.

Cotton Textiles

- It is one of the traditional industries of India. About 80% of the industries are owned privately, while 20% are owned by the Government and cooperative societies.
- Most of the cotton industries earlier were centred in Maharashtra and Gujarat because

of the existence of humid climate and the availability of cotton, markets, transport facilities and cheap labour.

- Weaving is done by handloom, power looms and in mills. Khadi industries also provide employment opportunities to a large section of society.
- USA, UK, Russia, France, Singapore, Sri Lanka and many African countries import cotton textiles from India. We also export yarn to Japan.
- Some drawbacks of the cotton industries are that spinning and weaving units of the country cannot use high-quality yarn produced in the country. Production takes place in small factories which cater to only local markets. This is the reason that while we export cotton yarn, fabrics have to be imported. Low productivity of labour, irregular supply of electricity and tough competition from the synthetic fibre industry have hit the cotton textile industries hard.

Jute Textiles

- India is the largest producer of raw jute and the second largest exporter of jute products in the world after Bangladesh.
- Most jute mills are located in West Bengal along the Hugli River. This is because this area has many jute-growing fields, cheap water transport, cheap labour and a good network of railways and roadways. Kolkata provides financial assistance to the jute industries.
- The jute industry in India is currently facing many problems. There is stiff competition from Bangladesh, Brazil, Egypt and Thailand. Synthetic fibres have also hit the industry hard. To improve the condition of jute industries, the Government formulated the National Jute Policy. Main countries which import jute products are USA, Canada, Australia and the United Arab Emirates.

Sugar Industry

- India is the second largest producer of sugar in the world and the largest producer of *gur* and *khandsari*.
- Sugar mills are located close to the sugar fields. This is because sugar is bulky to transport and can quickly lose sucrose content.
- Most of the sugarcane mills are located in Uttar Pradesh, Bihar, Karnataka, Tamil Nadu, Andhra Pradesh and Gujarat. Old and inefficient methods of production and delay in transport of raw materials are two main causes which are hitting the sugarcane industries hard.

Mineral-based Industries

Industries which are using minerals as raw materials are known as mineral-based industries. Some important mineral-based industries are

Iron and Steel Industry

- India is the fourth largest producer of steel in the world and the largest producer of sponge iron.
- It is known as a basic industry as steel is needed for machinery of all industries whether

heavy, medium or light. Steel is also required for manufacturing a variety of engineering, construction and defence goods. Day-to-day consumer goods such as containers and safety pins are made of steel. It is also a heavy industry as all its raw materials and finished goods are heavy and bulky.

- Many iron and steel industries are located in the Chotanagpur Plateau as many iron ore fields are located in the surrounding regions. Availability of cheap labour and growth potential have led to the concentration of industries in the region.
- Despite India being a major producer of iron and steel, it is not able to perform to its potential. This is due to many reasons such as high costs and limited availability of coking coal, irregular supply of electricity and poor infrastructure facilities. However, liberalisation and foreign direct investments have given the industry a much-needed boost.

Aluminium Smelting

- It is the second most important metallurgic industry in India. Because aluminium is light in weight, a good conductor of electricity, resistant to corrosion and easily malleable, it is used in the manufacturing of aircraft. It is also used in making utensils and wires.
- Bauxite is the main raw material in the industry. Aluminium smelting plants are mostly located in places where there is a regular supply of electricity and steady assurance of raw materials.
- Aluminium smelting plants are mainly located in Odisha, West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra and Tamil Nadu.

Chemical Industries

- It is one of the fastest growing industries in India. It contributes about 3% to India's GDP. It is the third largest in Asia and twelfth largest in the world.
- Chemical industries in India produce both organic and inorganic chemicals. Inorganic chemicals are used as raw materials for manufacturing many finished goods. These include synthetic fibres, plastics,
- paints and adhesives. Sulphuric acid is used for manufacturing fertilisers, while soda ash is used for making glass, soaps and detergents.
- Organic chemicals include petrochemicals which are used for making synthetic fibres, plastics and dyes.

Fertiliser Industry

- The fertiliser industries mainly produce fertilisers which contain nitrogen, potash and ammonium phosphate. India is the third largest producer of nitrogenous fertilisers.
- The fertiliser industry expanded after the Green Revolution. Some main plants are located in Gujarat, Tamil Nadu, Uttar Pradesh, Punjab, Odisha and Rajasthan.

Cement Industry

- The cement industry is an important industry as it is important for the construction of

houses, buildings, offices, bridges and dams.

- The industry uses bulky raw materials such as silica, limestone, alumina and gypsum. Coal, regular electric supply and good infrastructure facilities are other important requirements of the industry.
- The first cement plant was established in Chennai in 1904. Since then, it is continuously expanding because of many reasons. Decontrol of prices; promulgation of many reform movements related to the industry; the requirement of cement in building of roads, houses, railways and bridges; and the availability of international markets are some factors which have led to the development of cement industries in India.
- Indian cement is exported to the Middle East, East Asia, South Asia and Africa.

Automobile Industry

- Many vehicles such as cars, trucks, motor cycles and three wheelers are manufactured in India. The demand for cars has drastically increased in the country.
- Foreign direct investments have brought new technology into the country.
- Automobile industries are located in Gurgaon, Delhi, Pune, Chennai, Mumbai, Indore, Jamshedpur and Bengaluru.

Electronics Industry and Information Technology

- In India, there is a great demand for electronic products such as televisions, phones, pagers, radars and computers. The electronics industry is critical for the defence of the country.
- India has become a major hub of the information industry. Important technology parks are present in Bengaluru, Pune and Hyderabad.
- About 30% of this industry's workforce consists of women. The IT industry has been a major earner of foreign exchange for the country.

Industrial Pollution

Four types of pollution are caused by industries. These are

Type of Pollution	Sources	Impact
Air Pollution	Release of gases such as sulphur dioxide and carbon monoxide by industries and vehicles.	Hazardous to human health, animals and plants. Can cause irritation and respiratory problems
Water Pollution	Release of chemical discharges into rivers or lakes mainly by paper, chemical and heavy industries and refineries.	Dangerous for human, aquatic organisms and plants.

Land Pollution	Dumping of industrial wastes causes the degradation of soil. Rainwater seeps into the soil carrying these pollutants underground.	Loss of soil fertility which further reduces agricultural production and deterioration of the quality of underground water.
Thermal and Noise Pollution	Thermal plants cause thermal pollution when they discharge hot water into water bodies. Noise pollution is caused by construction activities, heavy industries and generators.	Thermal pollution affects marine and plant life. Noise pollution can cause hearing impairment, increase in heart rate and blood pressure.

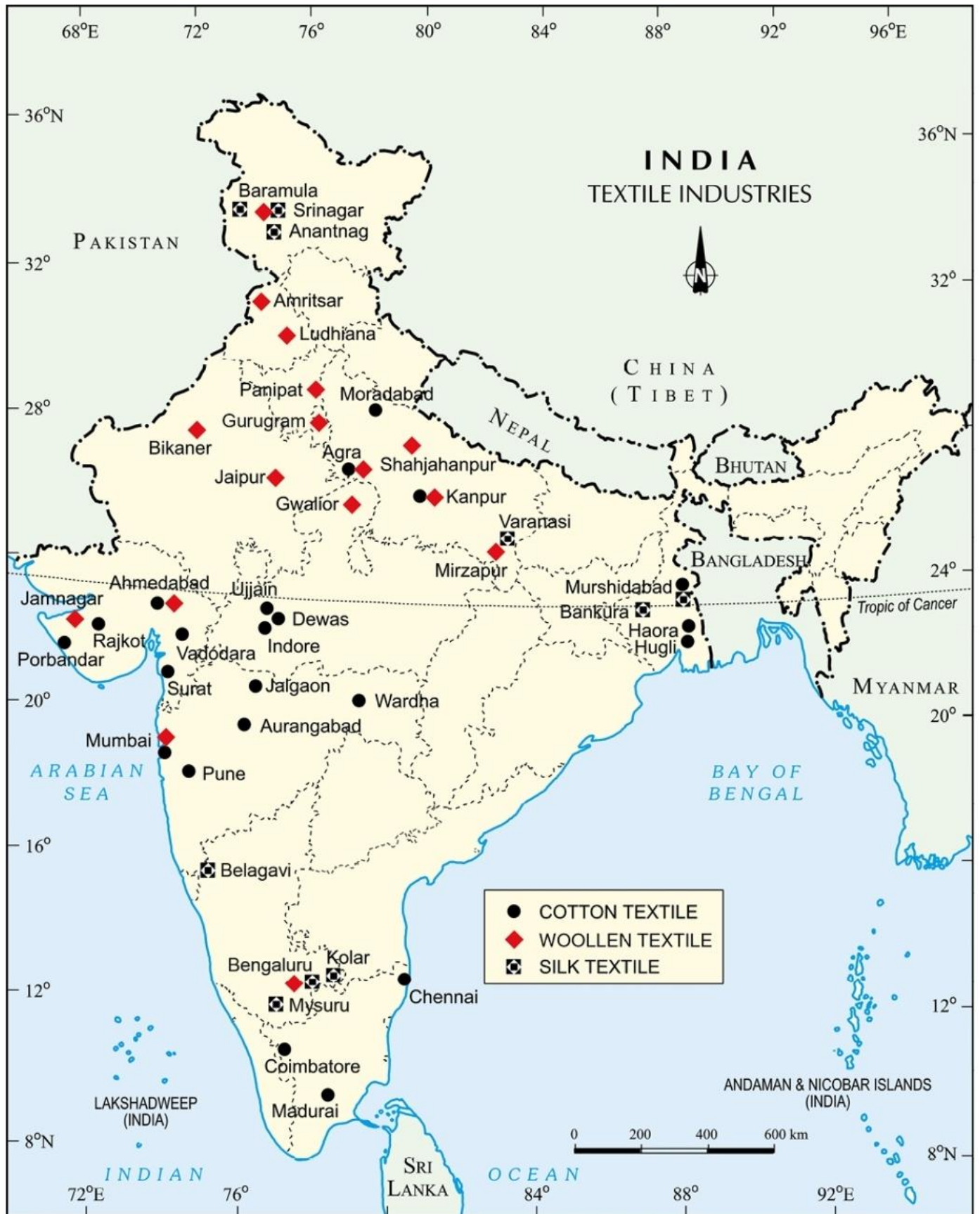
Steps to Control Environment Degradation

- Minimising use water for processing by reusing and recycling it in two or more successive stages.
- Harvesting of rainwater to meet water requirements.
- Treating hot water before releasing it into water bodies
- Overdrawing of ground water reserves by industry where there is a threat to ground water resources also needs to be regulated legally.
- Particulate matter in the air can be reduced by fitting smoke stacks to factories with electrostatic precipitators, fabric filters, scrubbers and inertial separators. Smoke can be reduced by using oil or gas instead of coal in factories.
- Machinery and generators should be fitted with silencers to reduce noise pollution.

Efforts Made by NTPC towards Cleaning the Environment

National Thermal Power Corporation is a major power-providing corporation in India. The corporation has taken many steps to preserve the natural environment and resources in India.

- NTPC has been using the latest techniques and has upgraded its existing equipment. This has helped in reducing wastage of resources.
- It has been able to minimise the generation of waste materials by maximising the use of ash.
- It has been making efforts to reduce environmental pollution by liquid waste management and ash water recycling systems.
- NTPC also supervises and reviews ecological parameters of the surrounding areas where its power stations are located.
- It has laid down green belts to maintain ecological balance in regions surrounding its power stations.



India: Distribution of cotton, woollen and silk industries

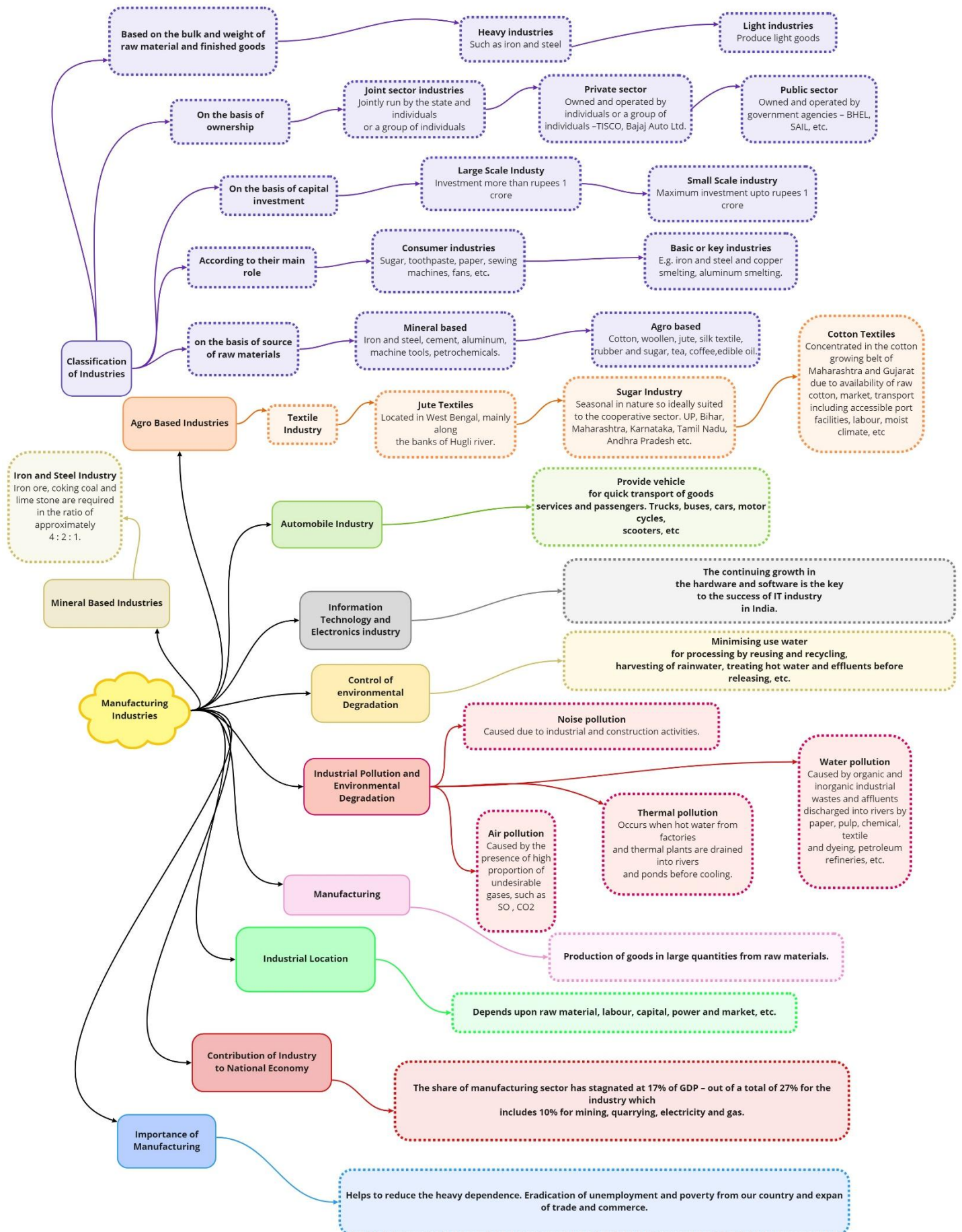


India: Iron and Steel Plants



India: Some Software Technology Parks

Class : 10th Geography
Chapter-6 : Manufacturing Industries



Important Questions

Multiple Choice questions-

Question 1. India occupies the first place in the production of:

- (a) Sugar
- (b) Jute
- (c) Gur and khandsari
- (d) All the above

Question 2. The number of sugar mills in the country are:

- (a) 400
- (b) 420
- (c) 440
- (d) 460

Question 3. Industries that use minerals and metals as raw materials are called:

- (a) Agro based industries
- (b) Metal based industries
- (c) Mineral based industries
- (d) None of the above

Question 4. Which of the following is basic industry:

- (a) Sugar
- (b) Cotton
- (c) Jute
- (d) Iron and steel

Question 5. Iron ore, coking coal and limestone are required to make steel in the ratio of approximately:

- (a) 1 : 2 : 4
- (b) 2 : 1 : 4
- (c) 4 : 2 : 1
- (d) 4:1:2

Question 6. India ranks among the world crude steel producers.

- (a) First
- (b) Second
- (c) Ninth

(d) Tenth

Question 7. In spite of large quantity of production of steel, per capita consumption per annum is only:

- (a) 20 kg
- (b) 32 kg
- (c) 40 kg
- (d) 52 kg

Question 8. In the 1950s China and India produced almost the same quantity of:

- (a) Iron
- (b) Manganese
- (c) Copper
- (d) Steel

Question 9. The number of aluminium smelting plants in India are:

- (a) 8
- (b) 10
- (c) 12
- (d) 14

Question 10. In 2004, India produced over 600 million tonnes of:

- (a) Steel
- (b) Aluminium
- (c) Copper
- (d) All the above

Question 11. The chemical industry in India contributes approximately:

- (a) 3 percent of the GDP
- (b) 4 percent of the GDP
- (c) 5 percent of the GDP
- (d) 6 percent of the GDP

Question 12. The fertilizer industry is centred around the production of:

- (a) organic fertilizers
- (b) inorganic fertilizers
- (c) nitrogenous fertilizers
- (d) phosphate fertilizers

Question 13. The industry which requires bulky and heavy raw materials like

limestone, silica, alumina and gypsum is:

- (a) Iron and steel industry
- (b) Aluminium industry
- (c) Cement industry
- (d) All the above

Question 14. The first cement plant was set up in Chennai in:

- (a) 1804
- (b) 1904
- (c) 1814
- (d) 1914

Question 15. At present the number of manufactures of passenger cars and multi-utility vehicles are:

- (a) 5
- (b) 10
- (c) 15
- (d) 20

Very Short Questions-

1. Name the any two public sector industries.
2. What are small scale industries?
3. Oil India Ltd is which type of Industry on the basis of ownership?
4. What are heavy industries?
5. What is Cryolite?
6. When and where, the first cement plant was set up?
7. Write down the basic inputs of Iron and steel industry.
8. What is NTPC?
9. Name any two pre independence industrial cities of India.
10. In which year national jute policy was formulated.

Short Questions-

1. Which factors are responsible for the decentralization of cotton textile mills in India?
2. Cotton textile industry has close links with agriculture. Explain.
3. What are the major problems of cotton textile industry?
4. What were the major objectives of National Jute Policy 2005? Why is the

internal demand for jute increasing?

5. India is an important iron and steel producing country in the world yet , we are not able to perform to our full potential. Give any four reasons.

6. Why is iron and steel industry called a basic industry?

7. What is importance of the manufacturing industries?

8. What is the importance of Jute Industry?

9. The sugar industry is now shifting from north to south. Mention main reasons.

10. How would you classify industries on the bases of their main role?

Long Questions-

1. Why are industries located in or near the cities? What were its results in preindependence period?

2. Analyze the advantages of the decentralization of industries in India.

3. How will you elaborate the importance of manufacturing? Explain.

4. Explain the different stages in the process of manufacturing of steel.

5. How is Integrated Steel Plants different from Mini steel plants? What problems does this industry face?

6. What ideas justify that agriculture and industry are not exclusive of each other?

7. Why are cotton and textile Industry spread all over the India? Explain five reasons with suitable examples.

8. What is the contribution of industry to national economy in India? Compare it with the East Asian Countries. What is the desired growth and present position of industry in GDP?

Assertion Reason Questions:

1. **Directions:** - In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both statements carefully and choose the correct answer from the below:

- Assertion and Reason both are true, and Reason is the correct explanation of assertion
- Assertion and Reason both are true, and Reason is the not correct explanation of assertion
- Assertion is true, but Reason is false
- Both Assertion and Reason are False

Assertion (A): Aluminium smelting is the second most important metallurgical industry in India.

Reason (R): It is light, resistant to corrosion, a good conductor of heat.

2. **Directions:** - In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both statements carefully and choose the correct answer from the below:

- Assertion and Reason both are true, and Reason is the correct explanation of assertion
- Assertion and Reason both are true, and Reason is the not correct explanation of assertion
- Assertion is true, but Reason is false
- Both Assertion and Reason are False

Assertion (A): Almost all machinery can be redesigned, and generators should be fitted with silencers.

Reason (R): Old machinery produced noise and consumes high energy

Case study Questions:

1. Read the text given below and answer the following questions.

Chotanagpur plateau region has the maximum concentration of iron and steel industries. It is largely, because of the relative advantages this region has for the development of this industry. These include, low cost of iron ore, high grade raw materials in proximity, cheap labour and vast growth potential in the home market. Though, India is an important iron and steel producing country in the world yet, we are not able to perform to our full potential largely due to: (a) High costs and limited availability of coking coal (b) Lower productivity of labour (c) Irregular supply of energy and (d) Poor infrastructure.

Answer the following MCQs by choosing the most appropriate option:

- In which region maximum iron and steel industries concentrated?
 - Chotanagpur plateau.
 - Punjab.
 - Haryana.
 - Uttarakhand.
- Why cheap labour is available in this region?
 - Large population and poverty in this area.
 - Big infrastructure.
 - Rich people.
 - Availability of natural resources.
- Why are we not able to perform our full potential largely?

- a. High costs and limited availability of coking coal.
 - b. Lower productivity of labour.
 - c. Irregular supply of energy and poor infrastructure.
 - d. All of these.
- iv. Why most of iron and steel industries are located in this region?
- a. Maximum resources.
 - b. Minimum wages.
 - c. More transportation.
 - d. Maximum concentration of iron and steel.
2. Read the text given below and answer the following questions.

Industrial locations are complex in nature. These are influenced by availability of raw material, labour, capital, power and market, etc. It is rarely possible to find all these factors available at one place. Consequently, manufacturing activity tends to locate at the most appropriate place where all the factors of industrial location are either available or can be arranged at lower cost. After an industrial activity starts, urbanisation follows. Sometimes, industries are located in or near the cities. Thus, industrialisation and urbanisation go hand in hand. Cities provide markets and also provide services such as banking, insurance, transport, consultants and financial advice, etc. to the industry. Many industries tend to come together to make use of the advantages offered by the urban centres known as agglomeration economies. Gradually, a large industrial agglomeration takes place. In the pre-Independence period, most manufacturing units were located in places from the point of view of overseas trade such as Mumbai, Kolkata, Chennai, etc. Consequently, there emerged certain pockets of industrially developed urban centres surrounded by a huge agricultural rural hinterland.

Answer the following MCQs by choosing the most appropriate option:

- i. What do you understand by agglomeration economies?
 - a. Many industries tend to come together to make use of the advantages offered by the urban centres known as agglomeration economies.
 - b. Making of a cooperative.
 - c. Small and cottage industries.
 - d. Setting up of industries by an individual.
- ii. Which facilities are provided by the cities?
 - a. Banking.
 - b. Insurance.

- c. Transport.
 - d. All of these.
- iii. Name the places where most of the manufacturing units were located from the point of view of overseas trade.
- a. Kanpur and Gorakhpur.
 - b. Mumbai, Kolkata and Chennai.
 - c. Trivandrum.
 - d. Kochi.
- iv. Which factors influence the setting up of industrial locations?
- a. Infrastructure.
 - b. Technological Park.
 - c. Shopping complexes and malls.
 - d. Availability of raw material, labour, capital, power and market, etc.

Map Question:

1. On an outline political map of India, show the major areas having concentration of iron and steel plants in India:
Durgapur, Bhilodi, Rourkela, Bokaro, Jamshedpur, Vijayanagar, Bhadravati, Vishakhapatnam, and Salem.

MCQ Answers-

1. Answer: (c) Gur and khandsari
2. Answer: (d) 460
3. Answer: (c) Mineral based industries
4. Answer: (d) Iron and steel
5. Answer: (c) 4 : 2 : 1
6. Answer: (c) Ninth
7. Answer: (b) 32 kg
8. Answer: (d) Steel
9. Answer: (a) 8
10. Answer: (b) Aluminium
11. Answer: (a) 3 percent of the GDP
12. Answer: (c) Nitrogenous fertilizers
13. Answer: (c) Cement industry

14. Answer: (b) 1904

15. Answer: (c) 15

Very Short Answers-

1. Ans.

- National Thermal Power Corporation (NTPC)
- Oil and Natural Gas Corporation (ONGC)
- Steel Authority of India Limited (SAIL)
- Bharat Heavy Electricals Limited (BHEL)

2. Ans. An industry where the investment on the assets of a unit is less than one crore is known as small scale industries.

3. Ans. Joint sector Industry

4. Ans. Industries in where bulky and heavy weight of raw material is used and heavy finished goods are produced. Example: Iron and steel industry.

5. Ans. A molten metal acts as an electrolyte.

6. Ans. 1904, Chennai

7. Ans. Coking coal, limestone and manganese

8. Ans. National Thermal Power Corporation

9. Ans. Bombay and Kolkata

10. Ans. 2005

Short Answers-

1. Ans.

(i) Cotton textile have a very high demand throughout the country.

(ii) Major inputs like banking, electricity, transportation are available in almost every part of the country.

(iii) Textile industry is labour intensive industry and labour is easily available in India.

(iv) Textile industry requires less technological inputs and can be carried out using simple tools and machines.

2. Ans.

(i) The industry has close links with agriculture and provides a living to farmers, cotton bull pluckers and workers engaged in ginning, spinning, weaving, dyeing, designing, packaging, tailoring and sewing.

(ii) Agriculture provides raw material to the industry i.e. raw cotton.

3. Ans. :

- (i) Lack of good quality long staple cotton
- (ii) Erratic power supply
- (iii) Out dated machinery and technology
- (iv) Low output of workers
- (v) Stiff international competition.

4. Ans.

- (i) To increase the productivity
- (ii) To improve the quality
- (iii) Ensuring good prices to the jute farmers
- (iv) Enhancing the yield per hectare

The internal demand for jute has been on the increase because –

- (i) Government policy of mandatory use of jute packaging
- (ii) The growing global concern for environment friendly biodegradable materials.

5. Ans.

- (i) High Costs and Limited availability of coking coal.
- (ii) Lower productivity of labour
- (iii) Shortage of power
- (iv) Poor infrastructure.
- (v) Low Investment in Research and Development.

6. Ans. Iron and steel industry is called the basic industry because:

- (i) It is the industry which lays the foundation of rapid development of other industries such as heavy Engineering, defence equipment, automobiles, aeroplanes etc.
- (ii) It is also helpful in providing employment.
- (iii) It also helps in the development of agriculture.

7. Ans.

1. Employment generation: Manufacturing industry is the main source of employment for large number of skilled as well as unskilled workers.
2. Foreign exchange: Export of manufactured goods bring foreign exchange to India.
3. Reduction of pressure on land: Manufacturing industry produces products of daily needs and helps the common people to fulfill their basic needs. It reduces pressure on agricultural sector for employment.

4. Removal of economic problems: Industrial development is a precondition for the removal of economic problems like poverty, unemployment and economic inequality. It also helps in bringing down regional disparities by establishing industries in tribal and backward areas.

8. Ans. :

1. Employment- The jute industry supports 2.61 Lakh workers directly another 40 lakh small and marginal farmers who are engaged in cultivation of jute and Mesta.
2. Products: Jute industry provides products of daily use like jute bags, ropes, mats etc.
3. Foreign Exchange: Exports of raw jute and manufactured goods bring foreign exchange
4. Promotion of Small Scale Industry: Many products of the jute industry are manufactured by cottage and small scale industry. So it promotes decentralization of industry.

9. Ans. North India is regarded as the main centre of the sugar industry and Uttar Pradesh is the leading producer.

Over the time the sugar industry is shifting towards south India. The main reasons behind shifting of the sugar industry towards south India are:

- (i) The sugar contents in the cane is higher i.e. 10.5% in Maharashtra and other southern states.
- (ii) Climate is suitable for the cultivation of sugarcane.
- (iii) South has better export facilities as compared to North.
- (iv) Cooperative sugar mills are more successful in management in south India.
- (v) The Peninsular climate helps to extend the crushing season by two months in the south India than north India.

10. Ans. Industries can be classified under the following categories on the basis of their main role:

1. Basic and Key Industries: Basic and key industries which supply their products or raw materials to manufacture other products. Example: Iron and steel industry, copper smelting and aluminum smelting.
2. Consumer Industries: Consumer Industries that produce goods for direct use by consumers. Example: Sugar, Toothpaste, paper, sewing machines and fans etc.

Long Answers-

1. Ans.

1. As an industrial activity starts, urbanization follows.
2. Industries need different types of services such as banking, transport, insurance labour, hotels and educational institute.
3. Such types of services are available in cities only.
4. Cities are markets for many finished industrial products.
5. Many industries leads to come together to make use of the advantages offered by the urban centers known as agglomeration economies.

In the pre independence period, most manufacturing units were located in places from point o view of overseas trade such as Mumbai, Kolkata, Chennai, etc. Consequently, there emerged certain pockets of industrially developed urban centers surrounded by a huge agricultural rural hinterland.

2. Ans. Decentralization of industries reduces the regional disparities of development. Citizens of a nation living in different parts of a country should get the equal opportunities of development.

1. Decentralization of industries solves the problem of unemployment. People are able to get employment.
2. Decentralization of industries assures an uninterrupted flow of goods and services in the market.
3. Decentralization solves the problem of centralization of population. Due to industrialization some cities are densely populated, but due to decentralization of industries the problems of over crowded cities that are solved. It makes people to get work at their homelands.
4. Decentralization of industries is helpful for the fair use of resources of underdeveloped areas.

3. Ans.

1. Manufacturing industry not only help in modernizing agriculture , which forms the backbone of our economy, they also reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sector.
2. Industrial development is a precondition for eradication of unemployment and poverty from the country. This was the main philosophy behind public sector industries and joint sector ventures in India.
3. Export of manufactured goods expands trade and commerce, and brings in much needed foreign exchange.
4. Countries that transform their raw materials into a wide variety of furnished goods of higher value are prosperous.

4. Ans.

1. Iron Ore: Transport of raw material to plant.
2. Blast Furnace: Iron ore is melted. Lime stone is fluxing material which is added. Slag is removed. Coke is burnt to heat the ore.
3. Pig Iron: Molten materials poured into moulds called pigs.
4. Shaping Metal: Rolling, pressing, casting and forging.
5. Steel making: Pig iron is further purified by melting and oxidizing the impurities. Manganese, nickel, chromium are added.

5. Ans. Difference between Integrated Steel plants and Mini steel plants:

1. The Integrated Steel plants are larger in size as compared to the Mini steel plants.
2. The Integrated Steel plants handles everything in one single complex- from putting together raw material to steel making, rolling and shaping while the Mini steel plants use steel scrap, sponge iron and sometimes steel ingots supplied by Integrated steel plants.
3. Integrated steel plants manufacture all types of steel but mini steel plants only produce mild and alloy steel of given specification.

Problems faced by the steel Industry:

1. It has to face the tough competition of different steel producing countries especially China.
2. It faces high costs and limited supply of coking coal and irregular supply of electricity.
3. Poor infrastructure.
4. Lower productivity of labour.

6. Ans.

1. Agriculture and industry move hand and hand.
2. The agro industries in India have given a major boost to agriculture by raising its productivity.
3. They depend on the latter for raw materials and sell their products such as irrigation pumps, fertilizers, insecticides, pesticides, plastic and PVC pipes, machines and tools etc. to the farmers.
4. Thus development and competitiveness of manufacturing industry has not only assisted agriculture in increasing their production but also made the production processes very efficient.
5. Industrial labour and employers are dependent on agriculture for the food and other products.

7. Ans.

1. The textile industry is the oldest industry in India. It spread over both the rural and urban areas all over the country during colonial rule.
2. Now a day, in rural areas the hand loom industry is doing its work while in urban areas the textile mills and factories work day and night.
3. Wide market and the availability of raw material, transport, banking and electricity facilities in almost all parts of the country have led to decentralization of cotton mills in different parts of the country.
4. Weaving is highly decentralized to provide scope for incorporating traditional skills and designs of weaving in cotton, silk, zari, embroidery etc.
5. Textile Industry is a labour intensive industry so a large number of people are required in different stages of its working such as weeding, spinning, dyeing, weaving, designing, printing and packing. As labour is easily and cheaply available in all parts of the country so textile mills spread all over India.

8. Ans.

1. The contribution of industry to national economy has not been satisfactory for the last two decades. It has stagnated at 17 percent for mining quarrying, electricity and gas.
2. In comparison to India's 17 percent share in GDP, the East Asian countries have contributed 25 to 35 per cent to their GDP.
3. The desired growth over the next decade is 12 percent.
4. At present growth rate is about 9 to 10 percent and it is expected that we can achieve the growth rate of 12 per cent by some efforts like setting up of the National Manufacturing Competitiveness Council (NMCC).

Assertion Reason Answer:

1. (a) Assertion and Reason both are true, and Reason is the correct explanation of assertion
2. (a) Assertion and Reason both are true, and Reason is the correct explanation of assertion

Case Study Answer:

1.

(i)	(a)	Chotanagpur plateau.
(ii)	(a)	Large population and poverty in this area.
(iii)	(d)	All of these.
(iv)	(d)	Maximum concentration of iron and steel.

2.

(i)	(a)	Many industries tend to come together to make use of the advantages offered by the urban centres known as agglomeration economies.
(ii)	(d)	All of these.
(iii)	(b)	Kochi.
(iv)	(d)	Availability of raw material, labour, capital, power and market, etc.

Map Answer:

1.

