

6 MANUFACTURING INDUSTRIES

CONCEPT

1. Manufacturing is production of goods in large quantities after processing raw materials to more valuable products.
2. **Classification of Industries** is done on the basis of their main role, capital investment, ownership, source of raw materials and the bulk and weight of raw material and finished goods.
3. **Large Scale Industries** employ a large number of labourers.
4. **Small Scale Industries** employ a small number of labourers.
5. **Heavy Industries** use heavy and bulky raw materials.
6. **Light Industries** use light raw materials.
7. Manufacturing is considered the backbone of development in general and economic development in particular.
8. The NMCC (National Manufacturing Competitiveness Council) was set up when it was felt that, with appropriate policy interventions by the government and renewed efforts by the industry to improve productivity, manufacturing can achieve its target over the next decade.
9. Industrial locations are influenced by availability of raw materials, labour, capital, power and market. It is rarely possible to find all these factors available at one place.
10. **Agro-based industries** : Industries based on agricultural raw materials. For example, cotton textiles, jute textiles, woollen textiles, silk textiles, synthetic textiles, sugar industry.
11. **Cotton textiles** : It occupies an unique position in Indian economy, contributes 14% of industrial production. Provides employment to 35 million persons directly. Earlier the cotton textile industries were located in Maharashtra and Gujarat. Today, they are spread over 80 towns and cities of India. Scarcity of good-quality cotton, obsolete machinery, erratic power supply, low productivity of labour and stiff competition are some of the problems faced by the cotton textiles industry.
12. **Jute textiles** : There are about 70 jute mills in India and most of the jute is produced in West Bengal. Mainly in the Hugli basin produced in Andhra Pradesh, Bihar, Uttar Pradesh, Madhya Pradesh, Orissa, Assam and Tripura.
13. **Sugar** : There are 460 sugar mills in the country. 50% of them are found in Uttar Pradesh and Maharashtra. Karnataka, Tamil Nadu, Andhra Pradesh and Gujarat are also important producers of sugar in the country.
14. **Mineral-based Industries** : Industries using minerals as their raw materials — iron and steel, cement, chemical industries, aluminium smelting, copper smelting, fertiliser industry, etc.

Iron and Steel Industry :

- (i) The iron works of Kulti, Burnpur started local production in 1870.
- (ii) The first modern steel plant was set up at Jamshedpur in 1907.

- (iii) Today there are 10 primary integrated iron and steel plants and around 200 mini steel plants in the country.
- (iv) Raw materials used in this industry are iron ore, coal, limestone and manganese ore.
- (v) The location of this industry is decided by the availability of raw materials. All the important iron and steel plants are located in the north-eastern and southern parts of the Indian Peninsula.
- (vi) Only Visakhapatnam has a coastal location.
- (vii) These plants are managed by the Steel Authority of India Ltd. (SAIL)
- (viii) India produces about 32.8 million tonne of steel and ranks ninth among the world crude steel producers.

Aluminium Smelting :

- (i) Aluminium is a good conductor of heat and electricity.
- (ii) It is used as a substitute of steel, copper, zinc and lead.
- (iii) In the production of one tonne of aluminium, 6 tonnes of bauxite and 18,600 kwh of electricity is required.
- (iv) The availability of electricity and bauxite decides the location of this industry.
- (v) The 8 aluminium plants in the country are located in Orissa, West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra and Tamil Nadu.
- (vi) India produces over 600 million tonnes of aluminium per annum.

Chemical Industry :

- (i) Heavy inorganic chemicals include sulphuric acid, nitric acid, alkalis, caustic soda and soda ash. They are widely spread around the country.

Sulphuric acid is used in the manufacture of fertilisers, synthetic fibres, plastics, paints and dyes.

Soda ash is used in the manufacture of glass, paper, soap and detergents.

- (ii) Heavy organic chemicals include petrochemicals which are used in the manufacture of synthetic fibres, synthetic rubber, plastics, dyestuffs, drugs and pharmaceuticals. These chemical plants are located near oil refineries and petrochemical plants.
- (iii) The chemical industries contribute 14% of the production of entire manufacturing sector.

Fertiliser Industry :

- (i) The first plant was set up at Ranipet in Tamil Nadu.
- (ii) With the setting up of a plant at Sindri by the Fertiliser Corporation of India (FCI) in 1951, the production of fertilisers increased.
- (iii) With the onset of the Green Revolution, this industry was set up in Gujarat, Tamil Nadu, Uttar Pradesh, Punjab and Kerala.
- (iv) Other important producers are Andhra Pradesh, Orissa, Rajasthan, Bihar, Maharashtra, Assam, West Bengal, Goa, Delhi, Madhya Pradesh and Karnataka.

- (v) There are 57 fertiliser units manufacturing nitrogenous fertilisers, 29 for urea and 9 for ammonium sulphate as a by-product, 68 other small units produce single super phosphate.

Cement Industry :

- (i) Cement is used for the construction of buildings, houses, factories, roads and dams.
- (ii) The raw materials used are limestone, silica, alumina and gypsum, coal and electric power are also used.
- (iii) The first cement plant was set up at Chennai in 1904. At present, there are 119 large and over 300 mini cement plants in India.
- (iv) Indian cement is in great demand in South and East Asia, Middle East and Africa because of its superior quality.

15. Automobiles : Commercial vehicles like trucks, passenger buses, cars, motor cycles, scooters, etc., are manufactured in large numbers. India is the second largest producer of three wheelers. The industries producing bicycles, scooters and bicycles are distributed around Delhi, Gurgaon, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur and Bengaluru.

16. Electronic Industry : Bengaluru has emerged as the electronic capital of India. Other major electronic goods producing centres are Hyderabad, Delhi, Mumbai, Chennai, Kolkata, Kanpur, Pune, Lucknow and Coimbatore. Many Software Technology Parks have also developed.

17. Industries create four types of pollution, namely air, water, land and noise.

18. Air pollution is caused due to the presence of carbon monoxide and sulphur dioxide. Dust, fume, mist spray and smoke contain both types of particles.

19. Water pollution : Coal, dyes, soaps, pesticides, fertilisers, plastics and rubber are some common pollutants. The principal industries which create water pollution are paper pulp, textiles, chemical, petroleum, refinery, tannery and electroplating.

20. Thermal pollution of water occurs when hot-water from factories and thermal plants is drained into rivers and ponds before cooling.

21. Noise pollution means unwanted, extra, noise created due to industrial machineries etc.

22. Measures to Control Environmental Degradation :

- (1) Proper fuel selection and utilisation.
- (2) Use of oil instead of coal in the industries.
- (3) Treatment of liquids in three phases :
 - (i) Primary treatment by mechanical process.
 - (ii) Secondary treatment by biological process.
 - (iii) Tertiary treatment by biological, chemical and physical processes.
- (4) Pollution of land and soil can be controlled by three activities :
 - (i) Collection of wastes from different places.
 - (ii) Dumping and disposing the wastes by land-filling.
 - (iii) Recycling of wastes for further use.

I. SUMMATIVE ASSESSMENT

A. NCERT TEXTBOOK QUESTIONS

Q.1. Choose the right answer from the four alternatives given below :

(i) Which one of the following industries uses limestone as a raw material?

- (a) Aluminium (b) Cement (c) Sugar (d) Jute

Ans. (b)

(ii) Which one of the following agencies markets steel for the public sector plants?

- (a) HAIL (b) SAIL (c) TATA Steel (d) MNCC

Ans. (b)

(iii) Which one of the following industries uses bauxite as a raw material?

- (a) Aluminium (b) Cement (c) Jute (d) Steel

Ans. (a)

(iv) Which one of the following industries manufactures telephones, computer, etc?

- (a) Steel (b) Electronics
(c) Aluminium (d) Information Technology

Ans. (b)

Q.2. Answer the following questions briefly.

(i) Why is iron and steel industry termed as basic industry?

Ans. Basic or key industries supply their products as raw materials to other industries to manufacture their goods.

Iron and steel industry is termed as a basic industry because

- (a) it produces iron and steel which in turn is used for manufacturing machines, tools and equipments. Machineries and tools are basic for any manufacturing process. Thus, iron and steel industry plays a key role in the development of any manufacturing industry and agriculture.
- (b) iron and steel industry provides raw materials for heavy engineering, automobiles, ship building, manufacturing of railway engines, locomotives, etc. The development of these industries is dependent on the supply of iron and steel.

Many of the items used by us in our daily life, from a tiny nail to big railway locomotives, are made of iron.

(ii) Describe four physical and four human factors that affect the location of an industry.

Ans. Industrial locations are complex in nature. They are influenced by a number of factors that determine their location in region.

The physical factors that influence that location of industries are as follows :

- (a) **Availability of raw materials** — Raw materials for industries range from agricultural products to minerals. Raw material required for the industry must be available cheaply and at close range or at well-linked places. In case of industries using bulky raw materials like iron, bauxite, etc., the ideal location is near the sources of raw materials.

- (b) **Power resources** — Power, energy or fuel is essential for the working of any industry, for running machineries and as fuel for the furnaces and smelters. So, power resources like coal and electricity must be available in abundance in the vicinity of the site chosen for the industry.
- (c) **Water** — Water is needed in abundance by almost all industries, e.g. cotton and jute textiles for processing, cleaning and cooling of machineries. So many industries are located near rivers and other water bodies.
- (d) **Favourable climate** — Climate affects production process, for example, humid climate is suitable for spinning of cotton yarns. The industry must be located in an area where the climate does not damage the raw materials or finished products.

Human factors influencing the location of industries are :

- (a) **Labour** — Cheap and efficient labour must be available in the region surrounding the industry for proper functioning of the industry.
- (b) **Capital** — Industries require finances in large amounts. For setting up an industry in a chosen site, large amount of cash guarantees and banking facilities are required.
- (c) **Market** — The goods produced must have a market for their sale. The market influences the demand as well as type of goods produced in a region.
- (d) **Transport facilities** — Well-linked road, railways or waterways must be available for transfer of raw materials and manufactured products to and from the industrial area.

(iii) How do industries pollute the environment?

OR

How does industrial pollution affect the environment.

Ans. Pollution is a negative effect of industrialisation. It results in degradation of the environment and affects human health, animals, plants and the atmosphere as a whole. It contributes to major environmental problems like land degradation, water scarcity, health hazards and, on a larger scale, global warming and climate change.

Industries are responsible for four types of pollution, namely, air, water, land and noise. Air pollution is caused by presence of high proportion of undesirable gases, such as sulphur dioxide and carbon monoxide, dust, sprays, mist and smoke in the atmosphere due to emission from industrial units. Smoke emitted by chemical and paper factories, brick kilns, refineries and smelting plants and burning of fossil fuels in big and small factories that ignore pollution norms cause enormous pollution.

Toxic gas leaks from factories are extremely hazardous.

Water pollution is caused by organic and inorganic industrial wastes and effluents discharged into rivers and other water bodies.

The main culprits in this regard are paper, chemical textiles and dyeing, petroleum refineries, tanneries and electroplating industries. They let out dyes, detergents, acids, salts and heavy metals like lead and mercury, pesticides, fertilisers, synthetic chemicals with carbon, plastics and rubber, etc., into water bodies. They turn big and small rivers into toxic streams.

Dumping of wastes specially glass, harmful chemicals, industrial effluents, packaging, salts and garbage renders the soil useless due to land pollution. Rainwater percolates to into the soil carrying these pollutants and contaminates ground water.

Noise pollution is by industrial and construction activities, machineries and factory equipments, generators, saws and pneumatic and electric drills.

(iv) Briefly describe any four measures of controlling industrial pollution.

OR

Discuss the steps to be taken to minimise environmental degradation by industries.

Ans. Careful planning of industries, better design equipment and better operation of the equipments can prevent pollution to a great extent. Some measures to control industrial pollution are

- (a) Restricting use of fossil fuels can reduce smoke. Air pollution can be reduced by reduction of particulate matter, aerosol emission in the air by fitting smoke stacks to factories with electrostatic precipitators, fabric filters, scrubbers and inertial separators.
- (b) Water pollution can be controlled by (i) minimising use of freshwater by reusing and recycling (ii) Treatment of hot water effluents before releasing them in rivers and other water bodies. These include mechanical, biological, chemical and physical processes.
- (c) Land pollution can be controlled by collection of wastes, dumping and disposing the wastes in filling areas and recycling the wastes.
- (d) Machinery and equipments and generators can be fitted with silencers or redesigned to make them energy efficient and to reduce noise.

OTHER IMPORTANT QUESTIONS (AS PER CCE PATTERN)

B. MULTIPLE CHOICE QUESTIONS (1 MARK)

Q.1. The economic strength of a country is measured by the development of which of the following?

- (a) Agriculture
- (b) Infrastructural facilities
- (c) Manufacturing industries
- (d) Export trade

Ans. (c)

Q.2. How can industrialisation assist in bringing in foreign exchange?

- (a) Modernisation of agriculture
- (b) Removing dependence on agriculture by providing alternative employment
- (c) Export of manufactured goods
- (d) Import of manufactured goods

Ans. (c)

Q.3. Which of the following developments usually follows industrial activity?

- (a) Agriculture
- (b) Urbanisation
- (c) Electrification
- (d) Mining

Ans. (b)

Q.4. In which of the following groups of cities were most of the manufacturing

units located in the pre-independence period?

- (a) Delhi, Kanpur, Moradabad
- (b) Bangalore - Hyderabad
- (c) Mumbai, Kolkata, Chennai
- (d) Chandigarh, Ludhiana, Amritsar.

Ans. (c)

Q.5. Many industries tend to come together to make use of the advantages offered by the urban centres known as agglomeration economies. Which of the following are the main advantages provided by cities to industries?

- (a) Market and services
- (b) Agricultural products and minerals
- (c) Power supply
- (d) Suitable climate and services

Ans. (a)

Q.6. Which of the following is not a factor of production?

- (a) Land
- (b) Raw materials
- (c) Capital
- (d) Enterprise

Ans. (b)

Q.7. Which of the following industries is in private sector?

- (a) Dabur (b) BHEL
(c) SAIL (d) HINDALCO

Ans. (a)

Q.8. Oil India Limited (OIL) belongs to which of the following types of industries?

- (a) Public sector
(b) Private sector
(c) Joint sector
(d) Cooperative sector

Ans. (c)

Q.9. Which of the following industries belongs to the category of heavy industries?

- (a) Watches (b) Shipbuilding
(c) Electric bulbs (d) Knitting needles

Ans. (b)

Q.10. Which of the following techniques of cotton textile production came into use after the 18th century?

- (a) Powerlooms
(b) Hand-spinning
(c) Handloom weaving
(d) Zari embroidery

Ans. (a)

Q.11. When and where was the first successful textile mill established in India?

- (a) In Ahmedabad in 1858
(b) In Chennai in 1954
(c) In Kolkata in 1816
(d) In Mumbai in 1854

Ans. (d)

Q.12. Sixty percent of sugar mills are concentrated in which of the following states?

- (a) Punjab and Haryana
(b) Maharashtra and Gujarat
(c) Uttar Pradesh and Bihar
(d) West Bengal and Orissa

Ans. (c)

Q.13. On the basis of character of raw material and finished product, iron and steel industry belongs to which category?

- (a) Heavy industry
(b) Medium industry
(c) Light industry
(d) Perishable goods industry

Ans. (a)

Q.14. Which of the following public sector steel plants of India is located near a port?

- (a) Durgapur (b) Vijaynagar
(c) Bhadravati (d) Vishakhapatnam

Ans. (d)

Q.15. Which of the following is the effect of liberalisation and foreign direct investment on iron and steel industry of India?

- (a) Lower productivity of labour
(b) High costs and limited availability of coking coal
(c) Irregular supply of energy
(d) Boost to the industry

Ans. (d)

Q.16. Which of the following is not an inorganic chemical?

- (a) Sulphuric acid
(b) Petrochemicals
(c) Nitric acid
(d) Alkalies

Ans. (b)

Q.17. Which of the following inorganic chemicals is used for the making of glass, soaps, detergents and paper?

- (a) Soda ash (b) Sulphuric acid
(c) Nitric acid (d) Alkalies

Ans. (a)

Q.18. Which of the following industries is the largest consumer of chemicals?

- (a) Fertilisers (b) Textiles
(c) Chemicals (d) Paper

Ans. (c)

Q.19. Which of the following led to expansion of the fertiliser industry?

- (a) Liberalisation and foreign direct investment
(b) MNCs (multinational corporations)
(c) The Green Revolution
(d) All the above

Ans. (c)

Q.20. When and where was the first cement plant set up in India?

- (a) Chennai in 1904
(b) Porbandar in 1924
(c) Dalmianagar in 1937
(d) Kottayam in 1967

Ans. (a)

Q.21. Which of the following cities is one of the centres around which automobile industry is located?

- (a) Gurgaon (b) Jaipur
(c) Itanagar (d) Ahmedabad

Ans. (a)

Q.22. Which of the following cities is the electronic capital of India?

- (a) Delhi (b) Mumbai
(c) Bengaluru (d) Hyderabad

Ans. (c)

Q.23. Which of the following is an electronics industry?

- (a) HMT, Bengaluru
(b) TISCO, Jamshedpur
(c) BHEL, Hyderabad
(d) BALCO, Korba

Ans. (c)

Q.24. Which of the following industries has been a major foreign exchange earner in the last few years?

- (a) Electronics Industry
(b) Information Technology Industry
(c) Engineering Industry
(d) Tourism Industry

Ans. (b)

Q.25. Which of the following is a negative effect of industrialisation?

- (a) Economic growth
(b) Pollution
(c) Foreign exchange earnings
(d) Rapid urbanisation

Ans. (b)

PREVIOUS YEARS' QUESTIONS

Q.1. The economic strength of the country is measured by which of the following developments ? [2011 (T-2)]

- (a) The development of the manufacturing industries.
(b) The development of the literacy ratio.
(c) The development of the health status.
(d) The development of the population growth.

Ans. (a)

Q.2. What is the correct meaning of agglomeration economies? [2011 (T-2)]

- (a) Many industries set up in rural centres

- (b) Industries are basically agro-based.
(c) Many industries tend to come together to make use of the advantages offered by the urban centres
(d) Industries set up produce raw material for secondary sector.

Ans. (c)

Q.3. Which one of the following is not true regarding the Iron and Steel industry in India? [2011 (T-2)]

- (a) India is the largest producer of sponge iron.

- (b) Most of the public sector undertakings market their steel through the Steel Authority of India.
- (c) Chhotanagpur Plateau region has the maximum concentration of iron and steel industries.
- (d) As a leading iron and steel producing country, India does not need to import steel from other countries.

Ans. (d)

Q.4. Which one of the following industries, due to its seasonal nature, is ideally suited to the cooperative sector ?

[2011 (T-2)]

- (a) Sugar
- (b) Jute textile
- (c) Automobile
- (d) Cotton textile

Ans. (a)

Q.5. Which one of the following air services provides services to Oil and Natural Gas Commission in its off-shore operations ?

[2011 (T-2)]

- (a) Indian Airlines
- (b) Air India
- (c) Pawanhans Helicopters LTD
- (d) Alliance

Ans. (c)

Q.6. Regular supply of electricity and an assured source of raw material at minimum cost are the two prime factors for the location of which one of the following industries :

[2011 (T-2)]

- (a) Iron and Steel
- (b) Automobile
- (c) Aluminium smelting
- (d) Electronics

Ans. (c)

Q.7. Where was the first Cement Plant set up in India ?

[2011 (T-2)]

- (a) Mumbai
- (b) Kolkata
- (c) Chennai
- (d) Delhi

Ans. (c)

Q.8. Manufacturing Industries are placed in :

[2011 (T-2)]

- (a) Primary sector
- (b) Secondary sector

- (c) Tertiary sector
- (d) Service sector

Ans. (b)

Q.9. The first successful textile mill was established in :

[2011 (T-2)]

- (a) Delhi
- (b) Vishakhapatnam
- (c) Chennai
- (d) Mumbai (Bombay)

Ans. (d)

Q.10. Textile industry is an example of:

[2011 (T-2)]

- (a) Agro based industry
- (b) Co-operative sector industry
- (c) Mineral based industry
- (d) Marine based industry

Ans. (a)

Q.11. Which one of the following is not true regarding the National Jute Policy of 2005 ?

[2011 (T-2)]

- (a) Creating awareness about the use of biodegradable materials
- (b) Ensuring good prices to the jute farmers
- (c) Increasing productivity
- (d) Improving quality of Jute

Ans. (a)

Q.12. Which one of the following factors has once again opened the opportunity for jute product?

[2011 (T-2)]

- (a) Increasing concern for the use of biodegradable materials
- (b) Increasing productivity
- (c) Enhancing the yield per hectare
- (d) Improving quality

Ans. (a)

Q.13. Which one of the following steel plants is located in Chhattisgarh ?

[2011 (T-2)]

- (a) Bokaro
- (b) Durgapur
- (c) Bhilai
- (d) Rourkela

Ans. (c)

Q.14. Most of the sugar industries are ideally suited to : [2011 (T-2)]

- (a) Private sector (b) Joint sector
(c) Cooperative sector (d) Public sector

Ans. (c)

Q.15. Which one of the following agencies, market steel for the public sector plants ? [2011 (T-2)]

- (a) HAIL (b) SAIL
(c) TATA STEEL (d) MNCC

Ans. (b)

Q.16. Which of the following group of factors is a prime group for the location of aluminium smelting plant? [2011 (T-2)]

- (a) Capital and Market
(b) Raw material and Electricity
(c) Labour and Raw material
(d) Capital and Transport

Ans. (b)

Q.17. Small scale and large scale industries are classified on which basis? [2011 (T-2)]

- (a) Capital investment
(b) Ownership
(c) Main role
(d) Source of raw materials

Ans. (a)

Q.18. Which one of the following factors is considered as the most prominent one in industrial location in a region ? [2011 (T-2)]

- (a) Availability of raw materials
(b) Market
(c) Cheap Labour
(d) None of these

Ans. (a)

Q.19. Which one of the following cities is known as electronic capital of India ? [2011 (T-2)]

- (a) Srinagar (b) Noida
(c) Bengaluru (d) Pune

Ans. (c)

Q.20. Which one of the following groups of states have the largest number of cotton textile centres ? [2011 (T-2)]

- (a) Gujarat and Maharashtra
(b) Karnataka and Tamil Nadu
(c) Maharashtra and Madhya Pradesh
(d) Uttar Pradesh and Gujarat

Ans. (a)

Q.21. Which one of the following countries has the largest installed capacity of spindles in the world ? [2011 (T-2)]

- (a) India (b) China
(c) USA (d) Britain

Ans. (b)

Q.22. The National Jute Policy with an objective to improve the production for the Indian farmers was formulated in the year : [2011 (T-2)]

- (a) 2000 (b) 2005
(c) 2001 (d) 1999

Ans. (b)

C. SHORT ANSWER TYPE QUESTIONS (3 MARKS)

Q.1. 'Agriculture and industry move hand in hand.' Elucidate.

OR

'Agriculture and industry are complimentary to each other.' Justify the statement.

Ans. A close relationship exists between agriculture and manufacturing industries. Each of them compliment each other.

Each of them serves as market for goods produced by the other and in the process raises demand for each other's goods.

For example, the agro-based industries, like textiles, sugar, etc., depend upon agriculture for raw materials. These industries have given a major boost to agriculture by raising their demand

and hence, productivity. Manufacturing industries sell the products such as irrigation pumps, fertilisers, insecticides, pesticides, plastic and PVC pipes, agricultural machineries and tools, etc., to the farmers. Agriculture serves as their market and effects their development.

These inputs from industries assists agriculturists in increasing productivity as well as have made the production processes very efficient.

Q.2. Why did the traditional cotton textile industry of India receive a setback during the colonial period?

Ans. The traditional cotton textile industry of India suffered a setback during the colonial period because of competition from mill-made cloth from England. In England cotton textiles were produced in large quantities with the help of powerloom. The surplus was sold in India for profit as India was then a colony of England. Mill-made cloth was cheaper on account of large scale production. On the other hand, our traditional textiles used ancient techniques like hand-spinning and handloom weaving. Hence, its production could not compete with mill-made cloth of England.

Q.3. What is the ideal location for sugar mills? Why is this industry ideally suited to the cooperative sector?

Ans. Sugarcane, the raw material used in sugar industry, is bulky, and its sugar content reduces in haulage and time lag between reaping and sugar production. Therefore, the ideal location for sugar mills is in close proximity of sugarcane producing areas.

The sugar industry is seasonal in nature and so is ideally suited to the cooperative sector. For entire year the farmers are engaged in producing sugarcane as it is an annual crop. When the crop is reaped, the farmers pool together their resources, set up mills within the sugarcane producing areas and produce sugar. The seasonal nature of the sugar industry is combated by setting up cooperative where farmers share the profits and losses.

Q.4. Which factors are responsible for shifting of sugar mills to southern and western states? Mention two challenges faced by the industry.

Ans. In recent years, there is a tendency among the sugar mills to shift and concentrate in the southern and western states, especially Maharashtra because

- (i) the cane produced here has higher sucrose content and yields greater quantity of sugar.
- (ii) the cooler climate here ensures longer crushing season as it prevents drying of cane.
- (iii) cooperatives are more successful in these states.

Two challenges faced by sugar industry are :

- (a) Seasonal nature of the industry.
- (b) Old and inefficient methods of production.

Q.5. Why does the north eastern part of the Peninsular Plateau region have the maximum concentration of iron and steel industries?

Ans. The north-eastern part of the Peninsular plateau, the Chhotanagpur plateau region, has the maximum concentration of iron and steel industries because of the following reasons :

- (a) The region has rich reserves of iron ore of mainly haematite variety. Availability of good quality of iron ore at low cost, provides ideal location for setting up of iron and steel industries.
- (b) High grade coking coal is available from the coalfields of Jharkhand and West Bengal.
- (c) High quality manganese and limestone is available in proximity.

- (d) The surrounding densely populated region supply cheap labour.
- (e) The vast growth potential in the home market is an additional advantage. Local market for the finished goods are provided by other industries using steel as raw material. Good linkage of roads and railways helps in distribution of finished products all over the country.

As iron and steel is a heavy industry, availability of raw materials like iron ore, coking coal and limestone, all of which are bulky, as well as market within easy reach has provided the region ideal location for setting up of iron and steel industries.

Q.6. What are the prime factors in location of aluminium smelting industries? Where are the main aluminium smelting plants of the country located?

Ans. The prime factors in location of aluminium smelting industries are as follows :

- (i) Assured source of raw material, bauxite, at minimum cost as it is a bulky material at 4 to 6 tonnes of bauxite are required to manufacture 1 tonne of aluminium.
- (ii) 18600 kwh of electricity is required per ton of ore for smelting of aluminium. Hence, regular supply of power is another important factor for location of the industry.

Orissa produces about 45 per cent of the India's bauxite. Hence, aluminium smelting plants are located in Orissa. Also, the Hirakud dam provides cheap hydroelectricity for the development of the aluminium industry in the state.

West Bengal, Kerala, Uttar Pradesh, Chhattisgarh, Maharashtra, and Tamil Nadu, are other states where aluminium smelting plants are located. INDAL, HINDALCO, MALCO, NALCO and Aluminium Corporation of India are names of the major smelting plants.

Q.7. What is the ideal location for setting up a cement factory? In which state does cement industry have strategically located plants? Write about the present position of cement industry in India.

Ans. Cement industry requires bulky and heavy raw materials like limestone, silica, alumina and gypsum. Heavy costs are involved in the haulage of the raw materials. Hence, economically, the ideal location for cement factories are near the sources of raw materials.

Apart from raw materials, coal and electric power is needed to provide energy for working of the plants.

Nearness to rail transportation for supplying the bulky, finished products to the market is another important locational factor.

The cement industry has strategically located plants in Gujarat that have suitable access to the market in the Gulf countries. Dwarka, Porbandar, Veraval, Sikka and Bhavnagar, where cement factories are set up in this state, lie along the coast. This facilitates the export of cement to the Gulf countries in the west.

Decontrol of price and distribution since 1989 and some other policy reforms led the cement industry to make rapid strides in capacity, process, technology and production. As a result, now there are 128 large cement plants and 332 mini cement plants in India, producing a variety of cement.

Improvement in the quality has provided the cement industry a ready market in East Asia, Middle East and Africa along with the large demand in the domestic market. The industry is doing well in terms of production. Its export is providing the country with substantial foreign exchange.

PREVIOUS YEARS' QUESTIONS

Q.1. Describe any three main features of chemical industry ? [2011 (T-2)]

- Ans.** (i) It is fast growing
(ii) Diversified
(iii) It comprises of both large and small scale manufacturing units

Q.2. Why is it important for us to improve our weaving sector instead of exporting yarn in large quantities ? [2011 (T-2)]

Ans. India produces good quality of long staple cotton (9232 lakh bales in 2004-05), still she needs cotton from import. India exports cotton yarn. If home weaving sector is developed it could earn much benefits through proper utilization of cotton yarn.

Q.3. Explain any three factors that influence the location of an industry. [2011 (T-2)]

- Ans.** (i) Nearness to raw materials ie, coal iron etc, is an important factor of industrial location.,
(ii) Market offers an important locational factor.
(iii) Besides, a plenty source of capital can invite industry in any location.

Q.4. What is the contribution of industry to national economy of India ? Compare it with the East-Asian countries. What is the desired growth and present position of industry in GDP ? [2011 (T-2)]

Ans. In India, the share of manufacturing sector has stagnated at 17 per cent of GDP – out of total of 27 per cent for the industry. This is much lower in comparison to some East Asian economics, where it is 25 to 35 per cent.

The desired growth rate over the next decade is 12 per cent per annum.

Q.5. Mention any two challenges faced by the jute industry in India. State any one step taken by the government to stimulate its demand. [2011 (T-2)]

- Ans.** The two important challenges faced by the jute industry in India are as follows :
- (i) stiff competition in the International market from synthetic substitutes and
 - (ii) to face challenges of competitors like Bangladesh, Brazil, Phillippines, Egypt and Thailand.
 - (iii) Government policy of mandatory use of jute packaging is one step on this line.

Q.6. Mention any two factors that have contributed to a healthy growth of the automobile industry in India ? Name two centres where this industry is located. [2011 (T-2)]

- Ans.** (i) The introduction of new and contemporary models stimulated the demand for vehicles in the market.
(ii) Foreign Direct Investment (FDI) brought in new technology and aligned the industry with global developments. The two centres of automobile industry are Jamshedpur and Gurgaon.

Q.7. What are the three main reasons for shifting of the sugar mills to Maharashtra in recent years. [2011 (T-2)]

- Ans.** Three main reasons are as follows :
- (i) The cane produced has a higher sucrose content.
 - (ii) The cooler climate which ensures a longer crushing season.

(iii) The cooperatives are more successful in these state.

Q.8. What is natural gas ? What is its advantages ? Name one region of India where its reserves are found. [2011 (T-2)]

Ans. Natural gas is an important clean energy resource found in association with or without petroleum. It is used as a source of **energy** as well as **industrial raw materials** in the petrochemical industry.

A large reserves of Natural gas have been discovered in the Krishna-Godavari basin of Andhra Pradesh.

Q.9. What are software technology parks ? State any two points of significance of Information Technology industry in India ? [2011 (T-2)]

Ans. Software technology parks provide single window services and high data communication facility to software experts. The two significant points of IT industries are as follows :

- (i) It generates huge employment. Up to March 31, 2005, it employed over one million persons, 30 percent of which are women.
- (ii) The industry has been a major foreign exchange earner through growing Business processes outsourcing (BPO) sources.

Q.10. Examine how can the industrial pollution of freshwater resources. [2011 (T-2)]

Ans. Fresh water sources are polluted by organic and inorganic wastes and effluents discharged by industries into rivers. The main culprits are paper and pulp, chemical, textile petroleum, refineries, tanneries etc. industries.

Q.11. Suggest any three measures to reduce the industrial pollution of freshwater resources. [2011 (T-2)]

- Ans.**
- (i) Minimising use of water for processing by reusing and recycling it in two or more successive stages.
 - (ii) Harvesting of rainwater to meet water requirements.
 - (iii) Treatment of hotwater and effluents before releasing them in rivers and ponds.

Q.12. Mention any six factors responsible for the location of jute mills in the Hugli basin. [2011 (T-2)]

- Ans.**
- (i) Proximity of the jute producing areas.
 - (ii) Cheap water transport facilities.
 - (iii) Good network of railways, roadways and waterways to facilitate movement of raw materials to the mills.
 - (iv) Abundant water for processing raw jute.
 - (v) Cheap labour from West Bengal, Bihar, Orissa and Uttar Pradesh.
 - (vi) Bank, insurance and port facilities for export of jute goods.

Q.13. Why is there a tendency for the sugar mills to shift and concentrate in the southern and western states in India ? Explain any three reasons. [2011 (T-2)]

- Ans.** Three main reasons are as follows :
- (i) The cane produced has a higher sucrose content.
 - (ii) The cooler climate which ensures a longer crushing season.
 - (iii) The cooperatives are more successful in these states.

Q.14. Distinguish between an integrated steel plant and a mini steel plants stating three points of distinction. [2011 (T-2)]

- Ans.** (i) An Integrated steel plant is larger than Mini Steel Plant.
(ii) Mini steel plant use steel scrap and sponge iron while Integrated steel plant use basic raw materials ie iron ore for making steel.
(iii) Mini steel plant produces mild and alloy steel while integrated steel plant produces only steel.

Q.15. Explain any three problems faced by cotton textile industries in India. [2010 (T-2)]

Ans. Three problems faced by cotten textile industries in India are as follows :

- (i) power supply is erratic and machineries are back dated.
(ii) Out put of labour is low.
(iii) Facing stiff competition with the synthetic fibre industry.

Q.16. Explain any three ways to control environmental degradadation caused by industries.

[2011 (T-2)]

- Ans.** (i) Minimising use of water for processing by reusing and recycling it in two or more successive stages.
(ii) Harvesting of rainwater to meet water requirements.
(iii) Treatment of hotwater and affluents before releasing them in rivers and ponds.

Q.17. How are agriculture and industries interdependent on each other ? Explain any three points. [2011 (T-2)]

Ans. Agriculture and industry go hand in hand.

- (i) the agro-industries have given a major boost to agriculture by raising its productivity.
(ii) Agriculture needs pumps, fertilizers, insecticides etc, which creates demand for industry to produce such items.
(iii) competitiveness of manufacturing industries as well as efficiency of production processes are both improved.

Q.18. How do industries create thermal and noise pollution ? Mention their consequences.

[2011 (T-2)]

Ans. Hot water from factories when is allowed to flow into rivers and ponds is caused thermal pollution. Thermal pollution would affect on aquatic life greatly. Industrial and constructional activites by huge machineries create unwanted sound of intolerable nature which impaired human ears and nervous breakdown.

Q.19. Distinguish between agro based and mineral based industries. Also give two examples of each. [2011 (T-2)]

Ans. This is self explanatory. Agro based industries depend upon Agricultural products while mineral based industries depends upon mineral resources. Cotton and jute are the example of agro based industry while Iron and steel, alluminium are mineral based.

Q.20. Why is iron and steel industry called as the basic and heavy industry ? [2011 (T-2)]

Ans. Iron and steel industry is called basic heavy industry because its

- (i) large scale of operation both imput and output.
(ii) It's output ie, steel is used for making machineries, construction, defence etc purposes as basic raw materials. Therefore it is called basic industry.

Q.21. “Agriculture and industry are not exclusive of each other. They move hand in hand.” Justify the statement with any three suitable arguments. [2011 (T-2)]

Ans. Agriculture and industry go hand in hand.

- (i) the agro-industries have given a major boost to agriculture by raising its productivity
- (ii) Agriculture needs pumps, fertilizers insecticides etc, which creates demand for industry to produce such items.
- (iii) competitiveness of manufacturing industries as well as efficiency of production processes are both improved.

Q.22. Why is cotton textile industry the largest industry in India today ? Give any three reasons. [2011 (T-2)]

Ans. (i) Cotton textile industry contributes 14 percent of the total industrial **production**.

(ii) It provides **employment** to 35 million persons directly – the second largest after agriculture.

(iii) It earns **foreign exchange** of about 24.6 percent (4 percent of GDP).

Q.23. How does the industrial pollution degrade the environment ? Explain with three examples. [2011 (T-2)]

Ans. The three types of pollution caused by industries are air pollution, water pollution and Noise pollution. (i) Air pollution through spewing of smoke from industry pollute the air with sulphur dioxide and carbon monoxide. (ii) Industrial wastes and effluents discharged through industries into rivers and ponds cause water pollution (iii) Besides, industrial and construction activities generates noise pollution.

Q.24. Explain any three factors which influence industrial locations. [2011 (T-2)]

Ans. (i) Nearness to raw materials ie, coal iron etc, is an important factor of industrial location, similarly,

(ii) Market offers an important locational factor.

(iii) Besides, a plenty source of capital can invite industry in any location.

Q.25. Explain three major challenges faced by sugar industry in India. [2011 (T-2)]

Ans. Major challenges faced by sugar industry include the seasonal nature of the industry, old inefficient methods of production; transport delay in reaching cane to factories and the need to maximise the use of bagasse.

Q.26. Explain any three types of pollution caused by industries. [2011 (T-2)]

Ans. The three types of pollution caused by industries are air pollution, water pollution and Noise pollution. (i) Air pollution through spewing of smoke from industry pollute the air with sulphur dioxide and carbon monoxide. (ii) Industrial wastes and effluents discharged through industries into rivers and ponds cause water pollution (iii) Besides, industrial and construction activities generates noise pollution.

Q.27. Why are most of the Iron and steel plants of India concentrated in Chhota Nagpur plateau region ? Give three reasons. [2011 (T-2)]

Ans. Chhotanagpur plateau region has the maximum concentration of steel plants because of the following factors :

(i) Low cost of iron ore and high grade raw materials in proximity.

(ii) Cheap labour.

(iii) Vast growth potential in the home market.

Q.28. Why is fertiliser industry almost widespread through out the country ? Give three reasons. [2011 (T-2)]

- Ans.** (i) Spread of fertilizer industry rests on raw materials ie, coal, petroleum and natural gas and hence it is located near to it.
(ii) After Green Revolution it is expanded to many parts of the country where agricultural prosperity is achieved.
(iii) Fertilizer can be transported through pipelines to far off places which causes decentralization.

Q.29. Explain any three factors responsible for the location of cotton textile industry in Mumbai and Ahmedabad. [2011 (T-2)]

- Ans.** (i) Availability of raw cotton, market, transport including accessible port facilities (ii) cheap labour and (iii) moist climate have caused the concentration of cotton textile industries in Mumbai and Ahmedabad region.

Q.30. Study the table given below and answer questions that follow :

Total Finished Steel Production in India.

YEAR	production (in million tons per annum)
1950-51	1.04
1960-61	2.39
1970-71	4.64
1980-81	6.82
1990-91	13.53
1997-98	23.40
2004-05	32.60

(a) What was the total finished steel production in India in 1950-51 ?

(b) How much and steel production increase in 2004-2005 as compared to the production in 1950-51 ?

(c) Why is the per capita consumption of steel low in India ? [2011 (T-2)]

Ans. (a) 1.04 million tonnes.

(b) 31.56 m. tonnes.

(c) Because of huge number of population in comparison to steel production.

Q.31. What is the meaning of manufacturing industry ? Why is it considered the backbone of economic development ? Give two reasons. [2011 (T-2)]

- Ans.** Production of good, in large quantities after processing from raw materials to more valuable products is called manufacturing industry. Manufacturing industry is considered as the backbone of economic development from the point of view (i) It helps in modernizing agriculture which is the backbone of our economy. (ii) Export of manufactured goods expands trade and commerce and brings much needed foreign exchange.

Q.32. Mention any three objectives of National Jute Policy, 2005. [2011 (T-2)]

- Ans.** (i) Increasing productivity.
(ii) Improving quality.
(iii) Ensuring good prices to the jute farmers and enhancing the yield per Hectare.

Q.33. 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 three reasons. [2011 (T-2)]

- Ans.** (i) High costs and limited availability of cooking coal.
(ii) Lower productivity of labour.
(iii) Irregular supply of energy.

Q.34. Where was the first cement plant set up in India? Explain any two reasons for the fast expansion of cement industry in India. [2011 (T-2)]

- Ans.** (i) In Chennai in 1904.
(ii) Decontrol of price and distribution since 1989 and other policy reforms.
(iii) Rapid growth of construction activities all over India.

Q.35. "The economic strength of a country is measured by the development of manufacturing industries". Elaborate the statement. [2011 (T-2)]

Ans. Resource utilization can not be made without manufacturing industry. Manufacturing industry transforms raw materials into finished products which added value to it. Countries having a good number of manufacturing industry can able to utilize resources more fruitfully and are therefore they considered as advanced country. India's contribution to manufacturing industry is 17 per cent as compared to 30 percent for Japan and 25 percent for France respectively.

Q.36. Explain any three factors which are responsible for decentralisation of cotton industry in India. [2011 (T-2)]

- Ans.** (i) Cater to the needs of large domestic markets.
(ii) Cotton growing areas spreaded over many new areas – Rajasthan, Punjab.
(iii) Decentralized to provide scope of incorporating traditional skills and design weaving in cotton silk, zari and embroidery etc.

Q.37. Explain any three factors that affect the location of industries in a region. (2009)

Ans. Industrial locations are complex in nature. They are influenced by both physical and human factors. Three important factors that influence the location of industries in a region are as follows :

- (i) **Availability of raw material** — Raw materials required for the industry must be available cheaply and at close range or at well-linked places. In case of industries using bulky raw material like iron, bauxite, etc., the ideal location is near the raw material sources.
- (ii) **Power resources** — Power, energy or fuel is essential for the working of any industry. They are required for running the machines and as fuel in smelters in case of mineral based industry. So, power resources like coal and electricity must be available in abundance in the vicinity where an industry is located.
- (iii) **Market** — The goods produced must have a market for their sale. The market influences the demand as well as type of goods produced in a region. For example, cold regions like Jammu and Kashmir will have requirement for woollen garments. So woollen textiles

will be located in that region. Consumer goods industries and automobile industries are located near big towns and cities.

Q.38. How do industries pollute air and water? Explain with examples. (2009)

Ans. Pollution is a negative effect of industrialisation. It adversely affects the environment and degrades it.

Air pollution is caused by the presence of high proportion of undesirable gases, such as sulphur dioxide and carbon monoxide, dust sprays, mist and smoke in the atmosphere due to emission from industrial units. Smoke is emitted by chemical and paper factories, brick kilns, refineries and smelting plants and burning of fossil fuels in big and small factories that ignore pollution norms. These cause respiratory diseases among the people working or living in such areas. Toxic gas leaks as during the Bhopal Gas Tragedy can be hazardous with long-term ill effects. Water pollution is caused by organic and inorganic industrial wastes and effluent discharged into rivers.

The main culprits in this regard are paper, pulp, chemical textile and dyeing, petroleum refineries, tanneries and electroplating industries. These let out dyes, detergents, acids, salts and heavy metals like lead and mercury, pesticides, fertilisers, synthetic chemicals with carbon, plastics and rubber, etc., into water bodies. They turn big and small rivers into toxic streams. Iron and steel slags are dumped into water bodies, especially rivers, destroying aquatic life and making the water unfit for use.

The pollution of the Ganga and the Yamuna are examples of water pollution caused by industries. Thermal pollution of water occurs when hot water from factories and thermal plants are drained into rivers or other water bodies.

D. LONG ANSWER TYPE QUESTIONS (4 MARKS)

Q.1. Classify industries on the basis of :

(a) Capital investment, (b) Ownership (c) Bulk and weight of raw material and (d) Finished product.

Ans. Industries can be classified into the following categories :

(a) On the basis of capital investment :

- (i) Large scale industries make large capital investment of more than one crore of rupees. They employ large numbers of people and use a large number of machineries, e.g. cotton textile.
- (ii) Small scale industries involve capital outlay of less than one crore rupees, employ a smaller number of labourers and use few power driven machineries, e.g. cycle parts manufacturing.

(b) On the basis of ownership :

- (i) Public sector industries are owned and operated by government agencies, e.g. Rourkela Steel Plant.
- (ii) Private sector industries are owned and operated by an individual or a group of individuals, e.g. Bajaj Auto Ltd.
- (iii) Joint sector industries are jointly run by the state and individual entrepreneurs e.g. Oil India Ltd.

- (iv) Cooperative sector industries are owned and managed by the producers and suppliers of raw materials or by workers. They pool in their resources and share the profits and losses proportionately, e.g., sugar industry in Maharashtra.

(c) On the basis of bulk or weight of raw material and finished products :

- (i) Heavy industries use bulky raw materials and their finished products are also heavy, e.g., iron and steel industry.
- (ii) Light industries use light raw materials and their finished products are also light, eg. electrical industries producing bulbs.

Q.2. Mention the factors responsible for localisation of cotton textile industry in Maharashtra-Gujarat region in early years. What factors were responsible for the decentralisation of the industry? Mention three main problems faced by the industry. What is the contribution of textile industry to Indian economy?

Ans. The favourable factors for the location of cotton textile industry in Maharashtra-Gujarat region in early years were as follows :

- (a) Availability of raw cotton from the cotton growing belt of Deccan in Maharashtra and Gujarat.
- (b) The port of Mumbai facilitating export of cotton goods and import of machineries and other inputs.
- (c) Moist climate in the belt facilitated spinning.
- (d) Market for the finished goods.
- (e) Finance or capital from Parsi and Bhatia traders.
- (f) Good transport network.
- (g) Availability of cheap and skilled labour.

Huge market, development of transport network, banking facilities and availability of cheap electricity contributed to the decentralisation of cotton mills in the country. Weaving is highly decentralised to provide scope for incorporating traditional skills and designs of weaving in cotton, zari, embroidery, etc., prevalent among local weavers in different parts of India.

Three major problems faced by cotton textile industries in India are :

- (i) Erratic Power Supply.
- (ii) Old and obsolete machinery and
- (iii) Stiff competition with the synthetic fibre industry.

The textile industry occupies a unique position in the Indian economy :

- (a) It contributes significantly to industrial production, 14 per cent of the total production of industries comes from textiles.
- (b) It provides employment to about 35 million people directly.
- (c) It contributes about 24.6 percent of the foreign exchange earnings of the country.
- (d) Textiles contribute 4 percent towards GDP.

Q.3. How are integrated steel plants different from mini steel plants? Name the integrated steel plants of India. What are the problems faced by this industry? What is India's present position with regard to manufacturing and consumption of iron and steel?

Ans. Mini steel plants are smaller, have electric and induction furnaces, and use steel scrap and sponge iron as raw material. They may have re-rollers manufacturing bar and rods. They produce mild and alloy steel and also liquid steel which are turned into ingots. They are decentralized secondary units scattered across the country to meet local demands.

An integrated steel plant is large and handles everything in one complex from assembling raw material and melting of iron ore in the blast furnace to steel making, rolling and shaping. They are usually concentrated near the sources of raw materials and market.

Presently there are 10 integrated steel plant in India, which are as follows :

- (a) Indian Iron and Steel Company, IISCO at Kulti and Burnpur, West Bengal.
- (b) Tata Iron and Steel Company, TISCO at Jamshedpur, Jharkhand.
- (c) Visveswarayya Iron and Steel Plant, at Bhadravati, Karnataka.
- (d) Bhilai Steel Plant, at Bhilai, Chhattisgarh.
- (e) Bokaro Steel Plant, at Bokaro, Jharkhand.
- (f) Durgapur Steel Plant, at Durgapur, West Bengal.
- (g) Rourkela Steel Plant, at Rourkela, Orissa.
- (h) Vishakhapatnam Steel Plant, at Vishakhapatnam, Andhra Pradesh.
- (i) Salem Steel Plant, Salem, Tamil Nadu.
- (j) Vijayanagar Steel Plant in Karnataka.

Though India is an important iron and steel producing country in the world, we are not able to perform to our full potential largely due to the following problems faced by the industry:

- (i) High costs and limited availability of coking coal.
- (ii) Lower productivity of labour.
- (iii) Irregular supply of energy.
- (iv) Poor infrastructure.

Today with 32.8 million tonnes of steel production, India ranks ninth among the world crude steel producers.

It is the largest producer of sponge iron. In spite of large quantity of production of steel, per capita consumption of steel per annum is only 32 kg.

Q.4. In which region are most of the jute mills of India concentrated? Why? What are the challenges faced by this industry? What step has resulted in the increase of internal demands of jute in recent years?

Ans. Most of the jute mills of India are concentrated in the Hoogli basin in West Bengal. It is a narrow belt 98 km long and 3 km wide along the Hoogli river.

The factors responsible for the localisation of the jute industry in this region are as follows :

- (i) Proximity to the jute producing areas of Ganga-Brahmaputra basin. West Bengal is the leading producer of raw jute in the country and provides the mills with the required raw material.
- (ii) Abundant water for processing of raw jute.
- (iii) Cheap water transport, supported by a good network of railways and roadways, facilitates the movement of raw materials to the mills.
- (iv) Cheap labour from West Bengal and adjoining states of Bihar, Orissa and Uttar Pradesh.

- (v) Banking and insurance facilities from city of Kolkata.
- (vi) Port facilities of Kolkata for export of jute goods.

Challenges faced by the jute industry are as follows :

- (i) Stiff competition in the international market from synthetic substitutes.
- (ii) Competition from other jute goods producing countries like Bangladesh, Philippines, Thailand, Egypt and Brazil.
- (iii) Decrease in demand for packing materials and jute carpet, and high cost of production.
- (iv) Old and inefficient machineries.

To face the competition from synthetic fibres and other countries producing jute, government has taken measures to boost up production of jute goods. In 2005, the National Jute Policy was formulated with this objective. Government policy of mandatory use of jute packaging has resulted in the increase of internal demand of jute in recent years.

Q.5. Write about the role of Information Technology Industry in modern India. What are software technology parks and where in India are they located?

Ans. Information Technology industry or IT as it is popularly known specialise in Research and Development (R&D), manufacture of electronics and production of hardware and software. A major impact of this industry in India has been on employment generation. Upto 31st March 2005, the IT industry employed over one million persons. This number was expected to increase eight fold in the following 3 to 4 years. This means that by 2008-2009 the IT industry was expected to provide employment to nearly 8 million people. The industry has also provided employment opportunity to women, and about 30 percent of the people employed in this sector are women.

The IT industry has been a major foreign exchange earner in the last few years because of its fast growing Business Processes Outsourcing (BPO) sector.

The continuing growth in hardware and software is the key to the success of IT industry in India. The IT industry has provided India a special position in the industrial world.

Software technology parks provide single window service and high data communication facility to software exports. There are 18 software technology parks in India. They are located at Srinagar, Mohali, Noida, Jaipur, Gandhinagar, Indore, Mumbai, Pune, Kolkata, Bhubaneswar, Guwahati, Bengaluru, Hyderabad, Mysore, Chennai, Thiruvananthapuram and Vishakhapatnam.

Q.6. Discuss the role of NTPC in paving the way to control environmental degradation.

Ans. NTPC is a major power providing corporation in India. It has ISO certification for EMS (Environmental Management System) 14001. The corporation has a proactive approach for preserving the natural environment and resources like water, oil, gas and fuels in places where it is setting up power plants. This is achieved through the following methods :

- (a) Optimum utilisation of equipment adopting latest techniques and upgrading existing equipment.
- (b) Minimising waste generation by maximising ash utilisation.
- (c) Providing green belts for nurturing ecological balances and encouraging afforestation.
- (d) Reducing environmental pollution through ash pond management, ash water recycling system and liquid waste management.
- (e) Ecological monitoring reviews and online database management for all its power stations.

E. MAP WORK (4 MARKS)

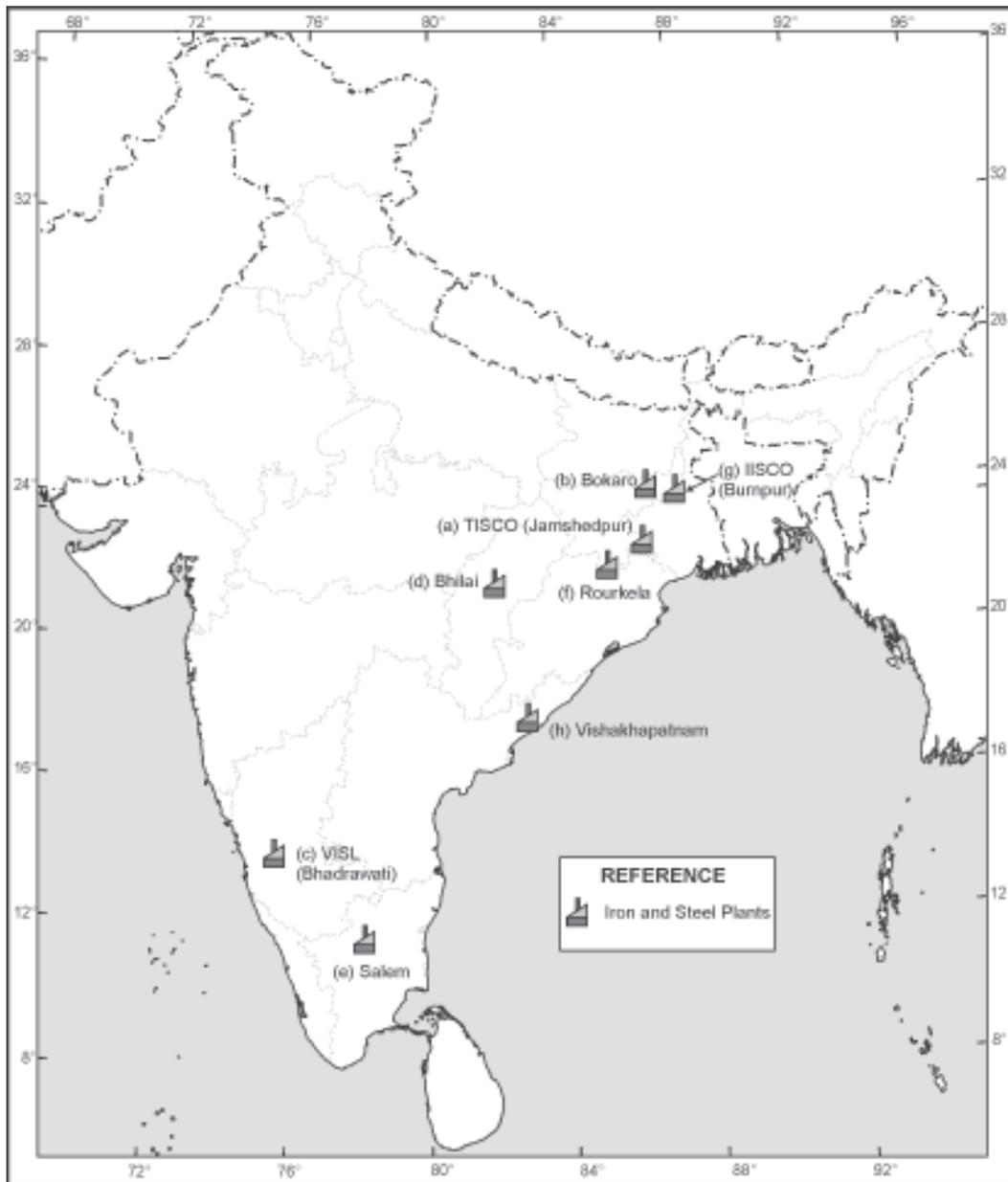
Q.1. On an outline map of India locate and label, name the following textile centres :

- (a) A centre in Maharashtra producing cotton and woollen textile.
- (b) A centre in West Bengal producing silk and cotton textile.
- (c) A woollen textile centre of Gujarat.
- (d) A cotton textile centre of Uttar Pradesh.
- (e) A cotton textile centre of Tamil Nadu.
- (f) A silk textile centre of Karnataka
- (g) A cotton textile centre of Madhya Pradesh
- (h) A woollen textile centre of Rajasthan



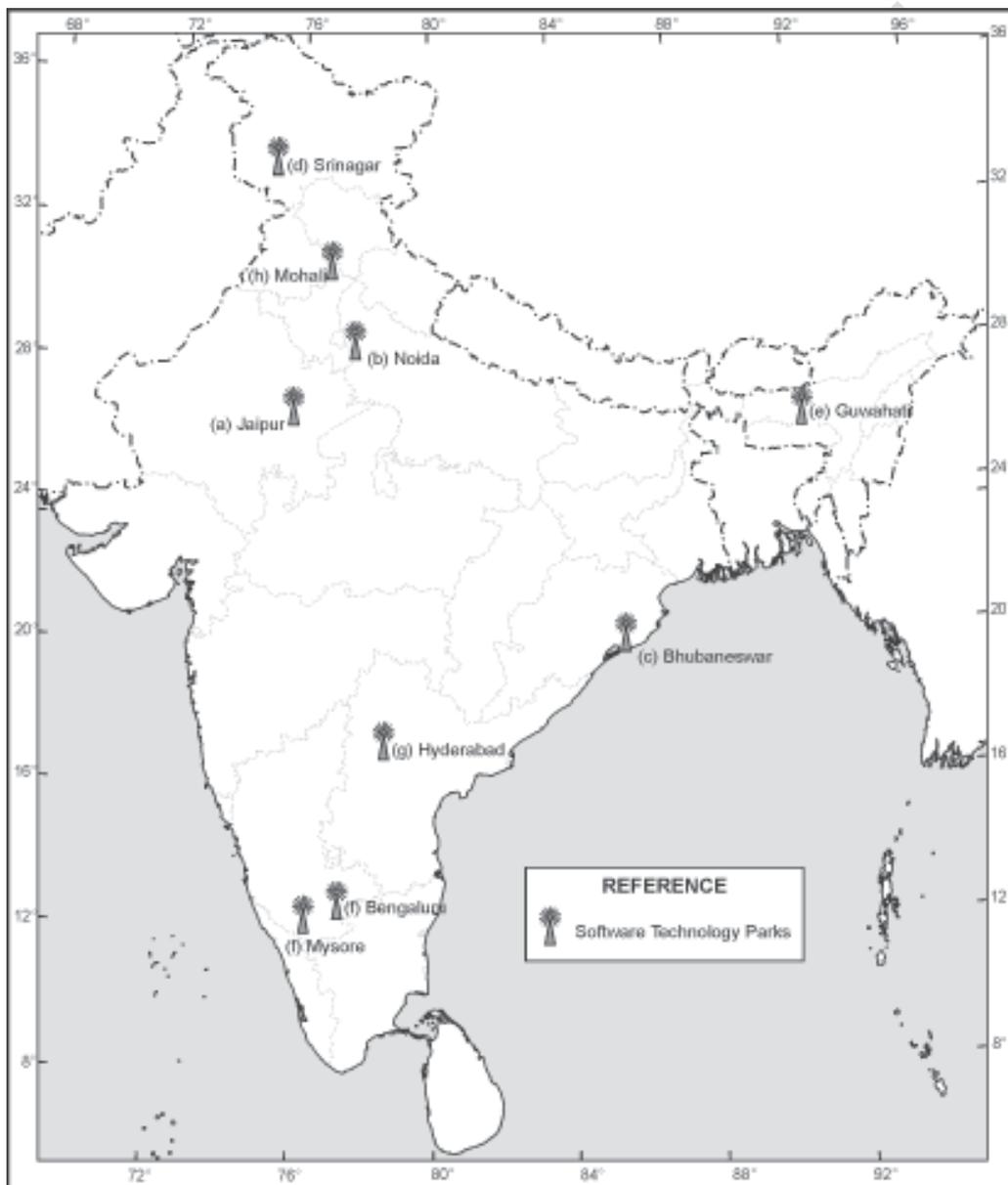
Q.2. On the outline map of India locate and label the following iron and steel plants :

- (a) TISCO
- (b) Bokaro Steel Plant
- (c) Visvesvarayya Iron and Steel Plant (VISL), Bhadravati.
- (d) Bhilai Steel Plant
- (e) Salem Iron and Steel Plant
- (f) Rourkela Iron and Steel Plant.
- (g) Indian Iron and Steel Company, Burnpur.
- (h) Visakhapatnam Steel Plant.



Q.3. On an outline map of India, locate and label the following software technology parks :

- (a) Software Technology Park of Rajasthan.
- (b) Software Technology Park of Uttar Pradesh
- (c) Software Technology Park of Orissa.
- (d) Software Technology Park of Jammu and Kashmir.
- (e) Software Technology Park of Assam.
- (f) Software Technology Park of Karnataka.
- (g) Software Technology Park of Andhra Pradesh.
- (h) Software Technology Park of Punjab.



II. FORMATIVE ASSESSMENT

A. PROJECT WORK

Q.1. Field Work. Visit any industry located in your locality. Find out the following informations.

- (i) Type of raw materials used
- (ii) Number of labourers employed.
- (iii) Whether machineries are used
- (iv) Whether power is required to run the machines.
- (v) Market for the products made
- (vi) Benefits of the industry

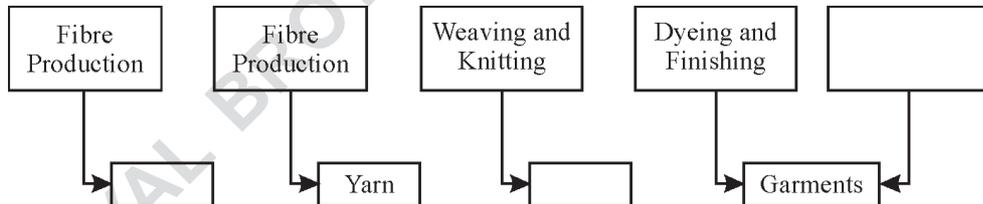
Report. Prepare a report on the above mentioned points. Take pictures of workers, machineries, raw materials to support your answer. Identify whether it is an agro-based or mineral-based industry, a basic industry or consumer goods industry, a large scale or medium or small scale industry, a heavy or light industry.

Q.2. Visit a nearby industry. Find out what types of environmental pollution is caused by the industry. What measures are taken by the industry to prevent such pollution? If the industry is not following pollution norms, move to the civic bodies to complain about it. Mobilise public support to prevent environmental degradation in your area.

B. ACTIVITIES

Q.1. Value addition.

Given below is a flow chart on value addition in the textile industry. Complete the chart by filling up the blank spaces.



Q.2. Industry Search.

Given are names of certain types of industries. Place them under their correct categories: Knitting needles, Sugar, Iron and steel, Cycle parts, Edible oil, Fuse wires, Cotton textile, Rubber, Jute textiles, Cement, Watches, Shipbuilding, Electric bulbs, Tea, Petrochemical, Locomotives, Silk, Automobiles, Sewing machines, Woollen textiles.

Industries

Agro-based	Mineral-based

Industries

Heavy Industry	Light Industry

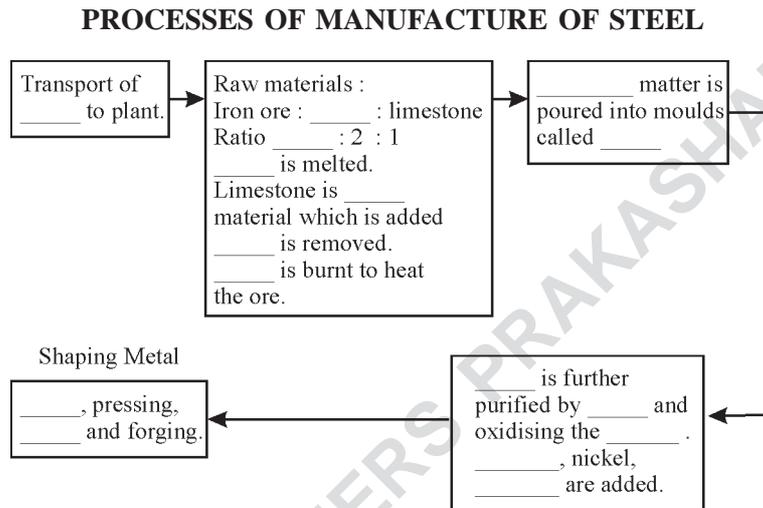
C. ASSIGNMENTS

Q.1. Factorisation.

Given below are some factors of production and inputs required for ideal location of industries. Categorise them into human and physical factors ideal for location of industries.

Labour, Raw materials, Power resources, Transport facilities, Capital, Water, Favourable climate, Banking and insurance, Market, Land, Entrepreneur.

Q.2. Complete the following chart by filling up the blank spaces.



D. QUIZ

Q.1. Word Jumble

- ANAVRISA _____ A place in Uttar Pradesh where railway diesel engines are manufactured.
- ICSOT _____ A private sector steel plant of India.
- IHAILB _____ Public sector steel plant located in Chhattisgarh.
- LMIAIUUNM _____ (Mineral used for manufacturing of aircraft)
- OADIN _____ (A software technology park located in the National Capital Region around Delhi)

Ans. (a) VARANASI (b) TISCO (c) BHILAI (d) ALUMINIUM (e) NOIDA

E. DISCUSSION

Manufacturing sector is considered the backbone of economic development. Discuss in the class the role of industries in the development of our country.

F. EXCURSION

Take the students on a day trip to a big industry in your town. Show them how the production process works, what are the inputs, outputs, factors of production, etc.