

MANUFACTURING INDUSTRIES

SHORT ANSWER TYPE QUESTIONS [3 MARKS]

1. How are integrated steel plants different from mini steel plants?

Answer: Following are the points of distinction:

- (a) An integrated steel plant is larger than mini steel plant.
- (b) Mini steel plant uses steel scrap and sponge iron while integrated steel plant use basic raw materials, i.e. iron ore for making steel.
- (c) Mini steel plant produces mild and alloy steel while integrated steel plant produces only steel.

2. Why are we not able to perform to our full potential in the iron and steel industry? Explain any three reasons.

OR

Describe the three major problems faced by iron and steel industry in India.

OR

Explain any three problems faced by Iron and Steel Industry in India.

Answer: Though India is an important producer of iron and steel, we are not able to perform to our full potential because of the following reasons:

- High cost and limited availability of coking coal.
- Labour engaged in production has low productivity.
- Irregular supply of electricity add up to its problems of production.
- Technological development in iron and steel industries is less.
- Resource allocation for research and development in production of steel are comparatively very less.

3. Explain any three characteristics of the chemical industry of India.

Answer: The characteristics of chemical industries of India are as follows:

- Chemical industries in India are fast growing and diversifying.
- It contributes 3% of GDP approximately.
- It is 3rd largest in Asia and occupies the 12th place in the world in the terms of size.
- It contains both large scale and small scale manufacturing units.
- There has been a rapid growth in the manufacture of organic and inorganic chemicals.
- Inorganic chemical industry is more widespread while organic chemical industry is located near oil refineries or petro-chemical plants.

4. Explain three phases in which treatment of industrial effluents can be done.

Answer: Treatment of industrial effluents can be done in the following ways:

- Primary treatment by mechanical means like screening, grinding, flocculation and sedimentation.
- Secondary treatment by biological process.
- Tertiary treatment by biological, chemical and physical processes. Recycling of water is also included in the tertiary treatment.

5. Why was cotton textile industry concentrated in the cotton growing belt of Maharashtra and Gujarat in the early years? Explain any three reasons.

OR

State the reasons for the location of Cotton Textile Mills in Maharashtra and Gujarat.

Answer: The cotton textile industry was mainly concentrated in the cotton growing areas because of the following reasons:

- Abundant availability of raw cotton due to favourable climate and presence of black soil.

- Huge market for cotton textile in and around Mumbai.
- Well-developed means of transport including the port facilities in Mumbai.
- Cheap labour from the adjoining areas.
- Mild and moist climate is favourable for spinning the cotton yarn.

6. Why is there a tendency for the sugar mills to concentrate in the southern and western states of India? Explain any three reasons.

Answer: In recent years, there is a tendency among the sugar mills to shift and concentrate in the southern and western states, especially in Maharashtra because of the following reasons:

- The sugarcane produced here has a higher sucrose content, thus yields greater quantity of sugar.
- The cooler climate here ensures longer crushing season as it prevents drying of cane.
- Sugar mills are best suited for the cooperatives that are more successful in these states.

7. Why is iron and steel industry called the basic industry? Explain any three reasons.

Answer: Iron and steel industry is called the basic industry because:

- All other industries – heavy medium and light, depend on it for their machinery.
- Steel is needed to manufacture engineering goods, construction material, defence, medical, telephonic scientific equipments and a number of other consumer goods.
- Production and consumption of steel is regarded as the index of country's development. Today with 32.8 million tons of steel production, India ranks 9th among the world under steel producers.

8. Explain with examples how industries have given a boost to agriculture.

Answer: The economic strength of the country depends upon the development of manufacturing industries. Manufacturing industries give major boost to agriculture in the following ways.

- Manufacturing industries not only help in modernising agriculture, but also reduces the dependence of people on agricultural income by providing jobs in secondary and tertiary sectors.
- Agro industries boost agriculture by increasing its productivity. They depend on raw materials from agricultural sector.
- The industries sell their products like irrigation pumps, fertilisers, insecticides, pesticides, machines and tools to the farmers. The manufacturing industries thus make production process efficient.
- Industries boost agriculture by transporting the goods produced to various markets.

9. How do industrial units pollute air in India? Explain any four points.

Answer: Industries cause different types of pollution—land, air and water.

- Air pollution is caused by the release of undesirable gases and smoke like sulphur dioxide, carbon monoxide.
- Air-borne particulate materials like dust, sprays, mist and smoke cause air pollution.
- Smoke is emitted from chemical and paper mills, brick kilns, refineries, smelting plants.
- Burning of fossil fuels in big and small factories which do not follow pollution norms. Toxic gas leaks can be very hazardous with long-term effects.
- Air pollution adversely affects human health, plants and animals. In human beings, air pollution can cause respiratory problems. Smog in the atmosphere cause respiratory problems.

10. How is land degraded by industries? Explain any two methods to control land degradation caused by industries.

Answer: Industries degrade the land in the following ways:

- Wastes like glass, harmful chemicals, industrial effluents, packaging, salts and garbage makes the soil useless.

- Mineral processing like grinding limestone for cement industry generates huge amount of dust that settles down on land. It makes land unfit for cultivation.
- Large scale deforestation for setting up production units turns land as wasteland.
- Construction of roads, housing complexes also degrades land.

The following are the methods that can control land degradation caused by industries.

- Control on mining and quarrying activities.
- Proper discharge of industrial waste and effluents.

11. How does textile industry occupy a unique position in Indian economy? Explain giving any three points.

Answer: Textile industry occupies a unique position in the Indian economy because:

- It contributes 14% of industrial production.
- It has generated employment to 35 million people directly which is the second largest next to agriculture.
- It has contributed to 24.6% of foreign exchange earnings.
- It contributes to 4% of GDP.
- It is the only industry in Indian which is self-reliant and complete in the value chain i.e., from raw material to the highest value added products.

12. The sugar mills are shifting towards southern and western states of India.” Support the statement giving three reasons.

Answer: In recent years, there is a tendency among the sugar mills to shift and concentrate in the southern and western states, especially in Maharashtra because of the following reasons:

- The sugarcane produced here has a higher sucrose content, thus yields greater quantity of sugar.
- The cooler climate here ensures longer crushing season as it prevents drying of cane.
- Sugar mills are best suited for the cooperatives that are more successful in these states.

13. Explain any three objectives of the ‘National Jute Policy 2005’.

Answer: In 2005, the National Jute Policy was adopted with the aim of:

- Increasing productivity
- Growing better quality of jute
- Higher yield per hectare and better price for jute goods

14. Why is India not able to perform to her full potential in iron and steel production? Explain any three reasons.

Answer: Though India is an important producer of iron and steel, we are not able to perform to our full potential because of the following reasons:

- High cost and limited availability of coking coal.
- Labour engaged in production has low productivity.
- Irregular supply of electricity add up to its problems of production.
- Technological development in iron and steel industries is less.
- Resource allocation for research and development in production of steel are comparatively very less.

15. Classify industries into two categories on the basis of source of raw material used. Mention two features of each category.

Answer: On the basis of sources of raw material used, industries are classified into:

- **Agro based industries:** These are dependent on raw material produced in the agricultural sector. These industries are labour intensive.
- **Mineral based:** These industries produce goods which are used in other industries. These industries are capital intensive.

16. Classify industries on the basis of capital investment into two categories. Mention two features of each category.

Answer: On the basis of the capital investment industries are classified into:

- **Small-scale industry:** The maximum investment allowed is ? 1 crore. They produce light consumer goods like fans.
- **Large-scale industry:** If investment is more than one crore on any industry then it is known as large scale industry. They produce durable goods.

17. Classify industries on the basis of bulk and weight of raw material and finished goods into two categories. Mention any two features of each category

Answer: On the basis of bulk and weight of raw materials and finished goods, industries can be classified into:

- Heavy industry such as iron and steel.
- Light industries that use light raw-materials and produce light goods such as electrical industries.

The two features of heavy industries are:

- They produce those goods which are used by other industries.
- They satisfy our wants indirectly.

The two features of light industries are:

- They produce consumer goods like electrical bulbs, sewing machines etc.
- They produce goods which satisfy our wants indirectly, e.g. fuse wires.

18. 'Environmental degradation has been everywhere.' Explain any three values that can help to prevent environmental degradation.

Answer: Following values can be adopted to prevent environmental degradation.

- **Proper water management:** Stress on recycling and reuse of water and proper treatment of discharged water.
- **Control air pollution:** Spread awareness to install electrostatic precipitators, fabric filters in factories. Encourage use of oil and gas instead of coal.
- **Educate people for proper management of solid waste.** Separate biodegradable and non-biodegradable waste and dispose accordingly. Non-biodegradable waste can be recycled and reused.

19. Classify industries on the basis of capital investment. How are they different from one another? Explain with examples.

Answer: On the basis of capital investment, the industries are classified into small scale industry and large scale industry.

- The maximum investment in small scale industry is upto Rs. 1 crore, e.g., toy industry.
- If the investment is more than one crore rupees, then it is known as large scale industry, e.g., iron and steel industry.

20. "The textile industry is the only industry in the country which is self-reliant and complete in the value chain". Justify the statement.

OR

"Textile industry occupies a unique position in Indian economy." Support the statement with appropriate arguments.

Answer: The textile industry is the only industry in the country which is self-reliant and complete in the value chain i.e. from raw materials to the highest value added products.

The statement can be justified as follows:

- Textile industry is dependent on agriculture and provides jobs to farmers, cotton boll pluckers and workers engaged in ginning, spinning, weaving, dying, packaging, tailoring and sewing. The industry by creating demand support industries like dyeing.

- It contributes significantly to industrial production. India has world-class production in spinning and capable of using all the fibers that are produced.
- Textile industry has been a major foreign exchange earner with increase in foreign trade across the world.
- It contributes significantly to the National GDP.

21. Classify industries on the basis of source of raw material. How are they different from each other?

Answer: On the basis of the sources of raw materials used industries are classified into agro-based industries eg cotton, silk, rubber, tea etc. and mineral based industries, e.g., iron and steel, cement etc.

They are different from each other in the following ways:

- Agro based industries are based on agricultural raw materials, e.g. cotton, wool, sugarcane etc. Mineral based industries use minerals and metals as raw materials e.g. iron ore, bauxite etc.
- Agro based industries depend on manufacturing industries for machinery, tools and implements. On the other hand, mineral based industries feed manufacturing industries

22. Suggest any three steps to minimise the environmental degradation caused by the industrial development in India.

Answer: Environmental degradation can be minimised by

- Proper fuel selection and utilisation, e.g., CNG should be used in automobiles instead of diesel or petrol.
- Equipments to control aerosol emissions like inertial separators, filters, precipitators and scrubbers should be used.
- Smoke can be prevented by the use of oil instead of coal in industries.

23. India is an important iron and steel producing country in the world. Yet we are not able to perform to our full potential". Suggest and explain any three measures to get full potential.

Answer: The following measures can enable us to perform to our full potential:

- Liberalization and Foreign Direct Investment can encourage our entrepreneurs to boost production.
- Resources need to be allocated for research and development to add up steel production.
- Apart from this regular supply of coking coal and electricity has to be dealt with.
- Productivity of labour needs to be increased through proper training.
- Efficient system of roadways and railways has to be maintained for quick delivery of raw material and finished goods.
- Moreover domestic demand of iron and steel has to be increased

24. Classify industries on the basis of their main role. How are they different from each other?

Answer: According to their main role the industries are classified as:

- Basic or key industries. These industries supply their raw materials to manufacture other goods, e.g., iron and steel, copper smelting etc.
- Consumer industries. These industries produce goods for direct consumption by consumers, e.g., sugar, fans paper, toothpaste, etc.

LONG ANSWER TYPE QUESTIONS [5 MARKS]

25. "The economic strength of the country is measured by the development of manufacturing industries". Support the statement with arguments.

Answer: The economic strength of a country is measured by the development of manufacturing industries.

- Industries create a variety of goods and thus reduce the dependence of people on agriculture and contributes to modernisation of agriculture.

- Industrial development helps to reduce unemployment and poverty levels by initiating income and high standard of living.
- Export of manufactured goods add value to the economy. It expands trade and commerce and brings to foreign exchange.
- Industries utilise primary materials and convert them into articles of utility, thus adding value to the raw materials.
- Countries that transform their raw material into a wide variety of furnished goods of higher value are prosperous. India's prosperity lies in diversifying its manufacturing industries

26. Why are sugar mills concentrated in sugarcane producing areas? Explain any three problems faced by sugar industry in India.

Answer: The sugar industries are concentrated in the sugar producing areas because the raw materials (sugarcane) used by this industry is bulky. To reduce the cost of transporting sugarcane to sugar industries, they are concentrated in sugarcane producing areas.

The three problems faced by the sugar industry in India are:

- Old and inefficient methods of production
- Delay in transporting sugarcane to the factories
- The need to make maximum use of bags.
- Above all seasonal nature of the industry is also a major issue

27. Explain any five factors affecting the location of an industry.

OR

Describe any three factors that control industrial location.

Answer: The following factors affect the location of an industry:

- **Availability of raw materials:** Close proximity to raw material, regular supply at cheap cost are of utmost significance, e.g., concentration of heavy industries in Chattisgarh.
- **Labour:** Modern industry requires both skilled and unskilled labour at low cost. It also determines the location of industry, e.g., cotton textile industry in Maharashtra.
- **Capital:** Industries are capital intensive. Banks and other financial institutions, insurance etc. play an important role in setting up production units.
- **Power:** All production units depend on one or other sources of power like coal, oil, gas etc. Regular and cheap supply of power is required to keep industries operational, e.g., iron and steel industries near Raniganj and Jharia coal fields.
- **Market:** Goods manufactured need to be sold in the market to maintain the demand and supply.

28. Why was the cotton textile industry concentrated in the cotton growing belt in the early years? Explain.

Answer: The cotton textile industry was mainly concentrated in the cotton growing areas because of the following reasons:

- Abundant availability of raw cotton due to favourable climate and presence of black soil.
- Huge market for cotton textile in and around Mumbai.
- Well-developed means of transport including the port facilities in Mumbai.
- Cheap labour from the adjoining areas.
- Mild and moist climate is favourable for spinning the cotton yarn.

29. Describe three major problems faced by the weaving and processing sectors in cotton textile industry.

OR

Describe any three major problems faced by cotton textile industry in India.

Answer: The three major problems faced by the weaving and processing sectors in cotton textile industry are:

- Most of the production is carried out in fragmented small units.
- Power supply is erratic in nature.
- Machinery used by the weavers is outdated.
- The labour has low productivity.
- Textile industry faces stiff competition from synthetic fibre industry.
- Much of the high quality yarn is not used by our weavers as it is exported.

30. Explain the pro-active approach adopted by the National Thermal Power Corporation (NTPC) for preserving the natural environment and resources

OR

What steps have been taken by NTPC towards environmental protection?

Answer: NTPC has a pro-active approach for preserving the natural environment and resources like water, oil and gas in places where it is setting up power plants. The approaches are as follows:

- Optimum utilisation of equipment by adopting latest techniques and upgradation of existing equipment.
- Minimising waste generation by maximising the utilisation.
- Providing green belts for nurturing ecological balance.
- Reducing environmental pollution through ash pond management, ash water recycling system and liquid waste management.
- Ecological monitoring, reviews and on-line database management for all its power stations.

31. What is manufacturing sector? Describe the four types of manufacturing sectors on the basis of ownership.

Answer: Manufacturing sector refers to the secondary sector of the economy deals with production of goods in large quantities with the help of machine, which converts the raw materials into valuable products. On the basis of ownership, manufacturing is classified into four types:

- **Public sector:** Public sector industries are owned and run by government agencies like BHEL, SAIL etc.
- **Private sector:** Private sector industries are owned and run by individuals or a group of individuals. Example: TISCO, Bajaj Auto Ltd.
- **Joint sector:** Joint sector industries are jointly run by the state and individuals or a group of individuals. Example: OIL (Oil India Limited) is jointly owned by private and public sector.
- **Cooperative sector:** Cooperative sector industries are owned and run by the producers or suppliers of raw materials, workers or both or cooperative societies who pool their resources. They share the profit or loss proportionately, for example, sugar mills, coir industry and handloom textiles.

32. Why are most of the jute mills located on the banks of the River Hugli? Explain

OR

Explain any three factors responsible for the concentration of jute industry in Hugli basin.

OR

Describe any five factors responsible for the concentration of jute mills along the banks of the Hugli river.

Answer: The five factors responsible for the location of jute mills along the Hugli basin are:

- Proximity or nearness to the jute producing areas.
- Inexpensive water transport.
- Good network of roadways, railways and waterways which helps in the movement of raw material to the mills.
- Availability of abundant water for processing of raw jute.
- Cheap labour from West Bengal, Bihar, Odisha and Uttar Pradesh.

- Kolkata being a large urban centre provides banking, insurance and port facilities for export of jute goods.

33. Describe any five factors responsible for the concentration of iron and steel industry in and around Chotanagpur Plateau region.

OR

Why has the 'Chotanagpur Plateau Region' the maximum concentration of iron and steel industries? Analyse the reasons

Answer: Chotanagpur region is the hub of many iron and steel plants because:

- Iron and steel industry requires iron ore, coal, limestone and manganese which are available in close proximity.
 - Good network of roads and railway facilitates the movement of raw materials to iron and steel plants.
 - Rivers provide the cheapest means of inland water transport for iron and steel goods.
 - Nearness to the city of Kolkata provides huge market, banking, insurance and financial services for iron and steel plants.
 - Availability of cheap labour from Bihar, West Bengal, Jharkhand and Chhattisgarh.
- Hence due to these locational advantages iron and steel plants like Jamshedpur, Durgapur, Burnpur, Bokaro and Rourkela are confined to the Chotanagpur region

34. 'Production and consumption of steel is often regarded as the index of a country's development'. Examine the statement.

Answer: Production and consumption of steel is regarded as the index of a country's development because of the following reasons:

- The production and consumption of iron and steel reflects the level of industrialisation and economic development of a country.
- All the other industries depend on it for their machinery. It provides raw material for making industrial machinery, electrical machinery, defence equipments, bridges, dams, shops, houses, etc.
- Vehicles carrying goods from one place to another are also made up of steel. It is because of these vehicles that our goods are transported from one place to another.
- Steel is required to manufacture a variety of consumer goods, like bicycles, fans, furniture, tractors, etc.
- It is the basic unit of economy. All buildings and infrastructures are constructed using iron and steel.

35. Explain any five measures to control industrial pollution in India.

Answer: Industries are responsible for four kinds of pollution-air, water, land and noise pollution. Industrial pollution can be controlled by:

- Industries should be set up in distant areas away from human settlements.
- Minimise the use of water processing through reusing and recycling.
- Treating hot water and effluents before releasing them in rivers and ponds.
- Particulate matter in the air can be reduced by fitting smoke stacks to factories with electrostatic precipitators. Smoke can be reduced in factories by using gas or oil instead of coal.
- Machinery can be redesigned to increase energy efficiency and reduce noise.

36. How do industries pollute environment? Explain with five examples.

Answer: Industries pollute the environment in many ways. They cause pollution in four ways-air, water, land and noise.

- Water pollution is caused by the discharge of industrial effluents into the water bodies with treating it.

- Dumping of wastes, harmful chemicals and industrial effluents e.g. packaging, and garbage makes soil useless. It also results in contamination of groundwater through seepage of rainwater.
- Air pollution is caused by release of undesirable gases and smoke like sulphur dioxide, carbon monoxide, air-borne particulate materials like dust, sprays, mist and smoke. Smoke is emitted from paper mills, burning of fossil fuels, smelting plants etc.
- Factory equipments, generators, saws cause noise pollution.
- Thermal pollution of water occurs when hot water from factories and thermal plants is drained into rivers and ponds before cooling.

37. “Manufacturing industry is considered the backbone of economic development of India.” Give three reasons.

OR

Examine the contribution of manufacturing industry to national economy.

Answer: Manufacturing sector refers to the secondary sector of the economy which deals with production of goods in large quantities with the help of machines, where raw materials are transformed into more valuable products. Manufacturing is considered as the backbone of economic development because:

- Manufacturing has contributed to modernisation of agriculture and reduced the dependency on agriculture by providing jobs in secondary and tertiary sectors.
- It has helped in reducing the poverty and unemployment and aimed at reducing the regional disparities by setting up of industries in rural, backward and tribal areas.
- Export of industrial goods contributed to valuable foreign exchange earnings.
- It has added value to raw materials by converting them into finished goods.
- The prosperity of a nation depends upon the development and diversification of manufacturing. Thus, it has not only made India self-sufficient but more competitive in terms of international market.
- It brings down regional disparities by establishing industries in tribal and backward areas.
- Industry sector contributes substantially to GDP.

38. “Agriculture and industry are complementary to each other.” Support the statement giving three points.

Answer: Agriculture and manufacturing industries have a close relationship. Each of them complement each other in the following ways:

- 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 assist agriculturists in increasing productivity as well as have made the production processes very efficient.
- Manufacturing industries not only help in modernizing agriculture, they also reduce the dependency of people on agricultural sector, by providing them jobs in secondary and tertiary sector.
- Agro-based industries in India have given boost to agriculture by raising its productivity.

39. What is the main reason of water pollution? How can the industrial pollution of fresh water be reduced? Suggest three ways.

OR

How do industries cause water pollution in India? Explain any four points.

Answer:

- Water pollution is caused by the discharge of industrial effluents into the water bodies.(b)
Thermal
- pollution occurs when hot water from factories and thermal power plant is drained into rivers and ponds, before cooling. Aquatic life is effected by it.
- Rainwater percolates into the soil carrying pollutants to the ground and leading to contamination of ground water.
- The major industries causing water pollution are paper pulp, textile, chemical, tanneries, petroleum, refineries and electroplating industries give out dyes, detergent, acids, salts, heavy metals like lead, synthetic chemicals, plastics and rubber. Fly ash phospo-gypsum and iron and steel slags are the solid wastes discharged into the water.

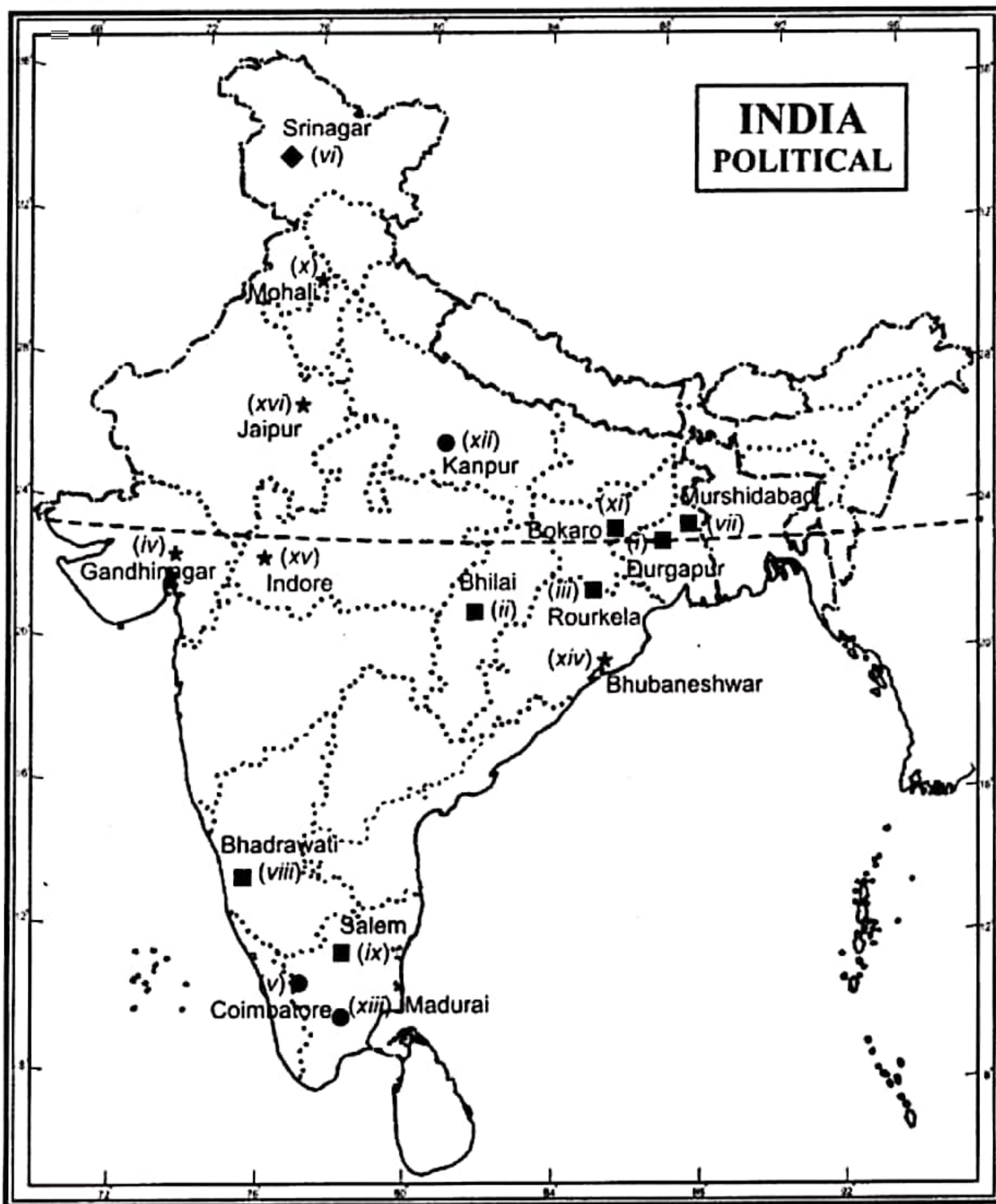
Measures to control water pollution are:

- Minimising the use of water by reusing or recycling it in two or more stages.
- Harvesting of rainwater to meet water needs.
- Treatment of industrial effluents and hot water before releasing them in rivers and ponds.
- Overdrawing of ground water reserves by industries should be minimised.

MAP QUESTIONS

- On the given outline map of India locate and label the following with appropriate symbols.
- (i) Durgapur-Iron and Steel Plant
 - (ii) Bhilai-Iron and steel Plant
 - (iii) Rourkela-Iron and Steel Plant
 - (iv) Gandhinagar Software Technology Park
 - (v) Coimbatore-Cotton textile centre
 - (vi) Srinagar-Woolen industrial centre
 - (vii) Murshidabad-A silk textile centre
 - (viii) Bhadrawati-Iron and Steel Plant
 - (ix) Salem-Iron and Steel Plant
 - (x) Mohali-Software Technology Park
 - (xi) Bokaro-Iron and Steel Industry
 - (xii) Kanpur-Cotton Textile Industry
 - (xiii) Madurai-Cotton Textile Industry
 - (xiv) Bhubaneswar-Software Technology Park (JCV)
 - (xv) Indore-Software Technology Park
 - (xvi) Jaipur-Software Technology Park

Answer:



- Some features are marked on the given political map of India. Identify them with the help of following information and write their correct names on the lines marked in the maps.
- (i) Software Technology Park
 - (ii) Silk Textile Industry
 - (iii) Software Technology Park

Answer:

