UNIQUE STUDY POINT

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Class: X	**Subject:** Social Science (Geography)	**Session:** 2025-26
Chapter: 06 - Manufacturing Industries	**Time:** 1½ Hours	**Max. Marks:** 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

Q1. Which of the following is an example of an agro-based industry?

(a) Cement industry

(b) Jute textile industry

(c) Aluminium smelting

(d) Iron and steel industry

Q2. India ranks which position in the world as a producer of sugar?

(a) First

(b) Second

(c) Third

(d) Fourth

Q3. Which of the following is a public sector industry?

(a) TISCO

(b) Bajaj Auto Ltd

(c) BHEL

(d) Dabur Industries

Q4. The sugar industry is shifting from north to south India because:

(a) Better transport facilities in south

(b) Higher sucrose content and longer crushing season

(c) Cheaper labour in south

(d) Government policies favor south

Q5. Which gas is primarily responsible for air pollution from industries?

(a) Oxygen

(b) Nitrogen

(c) Sulphur dioxide

(d) Hydrogen

Q6. The first cement plant in India was set up in:

(a) Mumbai in 1900

(b) Kolkata in 1902

(c) Chennai in 1904

(d) Delhi in 1910

Q7. Which element is added to iron to harden steel?

(a) Copper

(b) Manganese

(c) Zinc

(d) Aluminium

Q8. After partition in 1947, what percentage of jute producing areas went to Bangladesh?

(a) One-half

(b) Two-thirds

(c) Three-fourths

(d) One-third

Q9. Which industry is described as 'self-reliant and complete in the value chain'?

(a) Sugar industry

(b) Cement industry

(c) Textile industry

(d) Chemical industry

Q10. In which state is Oil India Ltd. (OIL) located?

(a) Gujarat

(b) Maharashtra

(c) Assam

(d) Tamil Nadu

SECTION B - Short Answer Questions (2 marks each)

Q11. Differentiate between basic industries and consumer industries with one example of each.

Q12. Why is the sugar industry ideally suited to the cooperative sector?

Q13. State any two factors responsible for the location of aluminium smelting plants.

Q14. How does noise pollution affect human health? Mention two effects.

SECTION C - Short Answer Questions (3 marks each)

Q15. "Production and consumption of steel is often regarded as the index of a country's development." Justify this statement with three reasons.

Q16. Explain why weaving in the cotton textile industry is highly decentralised while spinning remains centralised.

Q17. Describe any three steps taken by NTPC to preserve the natural environment.

SECTION D - Long Answer Question (5 marks)

Q18. "Although industries contribute significantly to India's economic growth and development, the increase in pollution cannot be overlooked." Explain the various types of industrial pollution and their effects on the

environment.

SECTION E - Case Study Based Questions (4 marks each)

Q19. Read the following case study and answer the questions that follow:

The iron and steel industry is the basic industry since all other industries — heavy, medium and light, depend on it for their machinery. Steel is needed to manufacture a variety of engineering goods, construction material, defence, medical, telephonic, scientific equipment and a variety of consumer goods. Production and consumption of steel is often regarded as the index of a country's development. The Chhotanagpur plateau region has the maximum concentration of iron and steel industries due to low cost of iron ore, high grade raw materials in proximity, cheap labour and vast growth potential.

(i) Why is iron and steel called the basic industry? (1 mark)
(ii) What is steel used for? Give any two uses. (1 mark)
(iii) Why is Chhotanagpur plateau region ideal for iron and steel industry? (2 marks)

Q20. Read the following case study and answer the questions that follow:

India is the largest producer of raw jute and jute goods and stands at second place as an exporter after Bangladesh. Most of the jute mills are located in West Bengal, mainly along the banks of the Hugli river. The first jute mill was set up near Kolkata in 1855 at Rishra. After Partition in 1947, the jute mills remained in India but three-fourths of the jute producing areas went to Bangladesh. The industry has close links with agriculture and provides livelihood to farmers and workers.

(i) Which country is the largest exporter of jute goods? (1 mark)
(ii) Where are most jute mills in India located? (1 mark)
(iii) What problem did the jute industry face after partition in 1947? (2 marks)

DETAILED ANSWER KEY - PAPER 02

SECTION A - Answers to MCQs

Ans 1. (b) Jute textile industry

Jute textile industry is an agro-based industry as it uses jute (an agricultural product) as its raw material. Other examples include cotton, woollen, silk textiles, rubber, sugar, tea, coffee, and edible oil industries.

Ans 2. (b) Second

India stands second as a world producer of sugar but occupies the first place in the production of gur and khandsari.

Ans 3. (c) BHEL

BHEL (Bharat Heavy Electricals Limited) is a public sector industry owned and operated by government agencies. SAIL is another example. TISCO, Bajaj Auto Ltd., and Dabur are private sector industries.

Ans 4. (b) Higher sucrose content and longer crushing season

The sugar industry is shifting to southern and western states, especially Maharashtra, because the cane produced here has higher sucrose content. The cooler climate also ensures a longer crushing season. Moreover, cooperatives are more successful in these states.

Ans 5. (c) Sulphur dioxide

Sulphur dioxide is one of the primary undesirable gases causing air pollution from industries. Carbon monoxide is another major pollutant gas emitted by industries.

Ans 6. (c) Chennai in 1904

The first cement plant in India was set up in Chennai in 1904. After Independence, the industry expanded significantly.

Ans 7. (b) Manganese

Manganese is added to iron in small quantities to harden the steel. Iron ore, coking coal and limestone are the main raw materials, while manganese is used as an additive.

Ans 8. (c) Three-fourths

After Partition in 1947, the jute mills remained in India but three-fourths of the jute producing areas went to Bangladesh (erstwhile East Pakistan), creating a raw material supply challenge.

Ans 9. (c) Textile industry

The textile industry is the only industry in India which is self-reliant and complete in the value chain, from raw material to the highest value-added products.

Ans 10. (c) Assam

Oil India Ltd. (OIL) is a joint sector industry located in Assam, jointly owned by public and private sectors.

SECTION B - Answers to Short Answer Questions

Ans 11.

Difference between basic industries and consumer industries:

Basic Industries	Consumer Industries

Supply their products as raw materials to manufacture other goods	Produce goods for direct use by consumers
Example: Iron and steel industry, copper smelting, aluminium smelting	**Example:** Sugar, toothpaste, paper, sewing machines, fans

Ans 12.

Sugar industry is ideally suited to the cooperative sector because:

1. **Seasonal nature:** The sugar industry is seasonal in nature, operating only during the sugarcane crushing season. Cooperative sector allows farmers to collectively own and operate mills, sharing profits during the season and losses proportionately.
2. **Raw material ownership:** Farmers who grow sugarcane can pool their resources, own the mill collectively, and benefit directly from processing their own crop. This ensures fair prices and eliminates exploitation by private mill owners, as seen successfully in Maharashtra's sugar cooperatives.

Ans 13.

Two factors responsible for location of aluminium smelting plants:

1. **Regular supply of electricity:** Aluminium smelting requires enormous amounts of electricity (18,600 Kwh per tonne of ore). Therefore, plants are located near sources of cheap and abundant hydroelectric or thermal power.
2. **Assured source of raw material:** Proximity to bauxite mines at minimum cost is essential as bauxite is very bulky and transportation adds significantly to costs. Plants should be located near bauxite quarries or have good rail/ship transport connections.

Ans 14.

Two effects of noise pollution on human health:

1. **Hearing impairment:** Continuous exposure to high noise levels from industrial machinery, factory equipment, generators, saws, and drills can cause permanent hearing loss and deafness over time.
2. **Physiological effects:** Noise pollution causes increased heart rate, high blood pressure, irritation, anger, stress, and can affect concentration and sleep patterns. It is an irritant that impacts overall mental and physical well-being.

SECTION C - Answers to Short Answer Questions

Ans 15.

"Production and consumption of steel is the index of a country's development" - Justification:

1. **Foundation for all industries:** Steel is the basic/backbone industry since all other industries — heavy, medium and light — depend on it for their machinery and equipment. Without adequate steel production, no country can develop its industrial sector, making steel production directly proportional to industrial development.
2. **Infrastructure development indicator:** Steel is essential for manufacturing engineering goods, construction materials, bridges, buildings, railways, and dams. High steel consumption indicates extensive infrastructure development, which is a key marker of economic progress. Developed countries have high steel consumption because they have extensive infrastructure networks.
3. **Diversified use across sectors:** Steel is needed in defence equipment, medical instruments, telephonic systems, scientific equipment, automobiles, ships, and consumer goods. A country that produces and consumes large quantities of steel demonstrates technological advancement, industrial diversity, and strong manufacturing capabilities across multiple sectors, all indicators of overall development.

Therefore, steel production and consumption serve as a reliable indicator of a nation's industrial strength, infrastructure development, and overall economic progress.

Ans 16.

Why weaving is decentralised while spinning remains centralised:

Spinning remains centralised:

- Spinning continues to be centralised in Maharashtra, Gujarat and Tamil Nadu because it requires heavy machinery, large capital investment, and economies of scale.
- These states have historical advantages like proximity to cotton growing areas, established industrial infrastructure, and skilled labour.
- India has world-class production capacity in spinning with modern technology.

Weaving is highly decentralised:

- **Preservation of traditional skills:** Decentralisation provides scope for incorporating traditional skills and designs of weaving in cotton, silk, zari, and embroidery. Different regions have unique weaving traditions that can be preserved through local production.
- **Employment generation:** Decentralised weaving through handlooms and powerlooms provides large-scale employment to weavers in their homes as a cottage industry, distributing economic benefits across rural areas.
- **Quality and variety:** However, decentralised weaving supplies lower quality fabric as it cannot effectively use the high-quality yarn produced in centralised spinning units. Weaving is done through handloom, powerloom and in mills, allowing for variety in production methods.

Ans 17.

Three steps taken by NTPC to preserve natural environment:

1. **Optimum utilisation and waste minimisation:** NTPC focuses on optimum utilisation of equipment by adopting latest techniques and upgrading existing equipment. It minimises waste generation by maximising ash utilisation, ensuring that industrial by-products are productively used rather than polluting the environment.
2. **Green belt development:** NTPC provides green belts for nurturing ecological balance around its power stations. It addresses afforestation through special purpose vehicles, helping to offset carbon emissions and create natural habitats.
3. **Pollution control measures:** The corporation reduces environmental pollution through comprehensive ash pond management, ash water recycling systems, and liquid waste management. It conducts ecological monitoring, regular reviews, and maintains online database management for all its power stations to ensure compliance with environmental standards.

Other measures: Harvesting rainwater, treating effluents before discharge, reducing smoke through cleaner fuels.

SECTION D - Answer to Long Answer Question

Ans 18.

Various types of industrial pollution and their effects:

Industries contribute significantly to India's economic growth but cause serious environmental degradation through four main types of pollution:

1. AIR POLLUTION
Causes:

- Presence of high proportions of undesirable gases like sulphur dioxide and carbon monoxide
- Air-borne particulate materials containing solid and liquid particles like dust, sprays, mist and smoke
- Emitted by chemical and paper factories, brick kilns, refineries, smelting plants, and burning of fossil fuels
- Factories that ignore pollution norms contribute heavily
- Toxic gas leaks can be extremely hazardous with long-term effects (e.g., Bhopal Gas tragedy)

Effects:

- Adversely affects human health causing respiratory diseases
- Harms animals and plants
- Damages buildings and monuments
- Affects the atmosphere as a whole, contributing to climate change

2. WATER POLLUTION
Causes:

- Organic and inorganic industrial wastes and effluents discharged into rivers
- Paper, pulp, chemical, textile and dyeing, petroleum refineries, tanneries and electroplating industries discharge dyes, detergents, acids, salts
- Heavy metals like lead and mercury, pesticides, fertilisers, synthetic chemicals with carbon, plastics and rubber
- Fly ash, phospho-gypsum and iron and steel slags are major solid wastes
- Thermal pollution when hot water from factories and thermal plants is drained into rivers before cooling

Effects:

- Kills aquatic life and disrupts marine ecosystems
- Makes water unfit for human consumption and irrigation
- Ground water contamination through percolation of pollutants
- Every litre of waste water pollutes eight times the quantity of freshwater

3. LAND POLLUTION
Causes:

- Dumping of wastes especially glass, harmful chemicals, industrial effluents
- Packaging materials, salts and garbage
- Rain water percolates carrying pollutants to soil and groundwater
- Nuclear wastes from power plants and weapon production facilities

Effects:

- Renders soil useless for agriculture
- Nuclear wastes cause cancers, birth defects and miscarriages
- Contaminates groundwater reserves
- Destroys soil fertility permanently

4. NOISE POLLUTION
Causes:

- Industrial and construction activities
- Machinery, factory equipment, generators, saws
- Pneumatic and electric drills

Effects:

- Results in irritation and anger
- Causes hearing impairment
- Increases heart rate and blood pressure
- Creates stress and affects mental health

Conclusion: While industries are essential for economic development, the challenge of sustainable development requires integration of economic growth with environmental concerns. Strict pollution control measures, adoption of cleaner technologies, and proper waste management are crucial for balancing industrial growth with environmental protection.

SECTION E - Answers to Case Study Based Questions

Ans 19.

(i) Why is iron and steel called the basic industry? (1 mark)
Iron and steel is called the basic industry because all other industries — heavy, medium and light — depend on it for their machinery and equipment. It provides the foundation for industrial development.

(ii) What is steel used for? Give any two uses. (1 mark)

1. Manufacturing engineering goods and construction materials (buildings, bridges, etc.)
2. Defence equipment and medical instruments

Other acceptable answers: telephonic and scientific equipment, consumer goods, automobiles, railways.

(iii) Why is Chhotanagpur plateau region ideal for iron and steel industry? (2 marks)
The Chhotanagpur plateau region is ideal for iron and steel industry because of:

- **Low cost of iron ore:** The region has abundant high-grade iron ore deposits available at low cost
- **Proximity to raw materials:** High grade raw materials like coking coal and limestone are available in close proximity, reducing transportation costs
- **Cheap labour:** Availability of cheap and abundant labour from the region and neighbouring states
- **Growth potential:** Vast growth potential in the home market for steel products

(Any 2 points with proper explanation)

Ans 20.

(i) Which country is the largest exporter of jute goods? (1 mark)
Bangladesh is the largest exporter of jute goods, while India stands at second place as an exporter.

(ii) Where are most jute mills in India located? (1 mark)
Most jute mills in India are located in West Bengal, mainly along the banks of the Hugli river in a narrow belt near Kolkata.

(iii) What problem did the jute industry face after partition in 1947? (2 marks)
After Partition in 1947, the jute industry faced a severe raw material supply crisis:

- **Separation of jute growing areas:** The jute mills remained in India (particularly West Bengal) but three-fourths of the jute producing areas went to Bangladesh (erstwhile East Pakistan).
- **Impact on production:** This geographical separation created a critical shortage of raw jute for Indian mills. Mills had to depend on imports from Bangladesh or develop new jute cultivation areas in India, which took time and affected production capacity. The industry had to reorganize its supply chain completely, facing increased costs and production challenges.
