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 industry suffered during colonial period due to competition from British mill-made cloth?

(a) Jute industry

(b) Cotton textile industry

(c) Woollen industry

(d) Silk industry

Q2. Which two world wars gave a boost to the development of cotton textile industry in India?

(a) Both fought in Asia

(b) Both fought in Africa

(c) Both fought in Europe

(d) Both fought in America

Q3. In which state is Jamshedpur, a major centre for the automobile industry, located?

(a) West Bengal

(b) Bihar

(c) Jharkhand

(d) Odisha

Q4. Which industry has strategically located plants in Gujarat with access to Gulf countries market?

(a) Textile industry

(b) Cement industry

(c) Chemical industry

(d) Automobile industry

Q5. Sulphuric acid is used to manufacture all of the following EXCEPT:

(a) Fertilizers

(b) Synthetic fibres

(c) Steel

(d) Paints

Q6. Which of the following is a characteristic of aluminium?

(a) Heavy weight

(b) Poor conductor of heat

(c) Malleable

(d) Rusts easily

Q7. Organic chemical plants are located near:

(a) Ports

(b) Oil refineries or petrochemical plants

(c) Agricultural areas

(d) Mining areas

Q8. Which of the following is a major solid waste produced by industries?

(a) Sulphur dioxide

(b) Carbon monoxide

(c) Fly ash

(d) Mercury

Q9. The challenge of sustainable development requires:

(a) Only economic development

(b) Only environmental protection

(c) Integration of economic development with environmental concerns

(d) Stopping all industries

Q10. Which treatment for industrial effluents involves recycling of wastewater?

(a) Primary treatment

(b) Secondary treatment

(c) Tertiary treatment

(d) None of the above

SECTION B - Short Answer Questions (2 marks each)

Q11. Distinguish between heavy industries and light industries with one example of each.

Q12. Why is it important for India to keep the mill sector loomage lower than power loom and handloom?

Q13. How does the chemical industry act as its own largest consumer?

Q14. What is a cooperative sector industry? Give one example.

SECTION C - Short Answer Questions (3 marks each)

Q15. "In the present day world of globalisation, our industry needs to be more efficient and competitive." Justify this statement with three reasons.

Q16. Explain the three stages of treatment of industrial effluents before releasing them into water bodies.

Q17. Why is the raw material used in sugar industry bulky? How does this affect the location of sugar mills?

SECTION D - Long Answer Question (5 marks)

Q18. Classify industries on the basis of: (a) source of raw materials, (b) their main role, and (c) ownership. Give one example of each category.

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

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

India stands second as a world producer of sugar but occupies the first place in the production of gur and khandsari. The raw material used in this industry is bulky, and in haulage its sucrose content reduces. The mills are located close to sugarcane producing areas. Sixty per cent mills are in Uttar Pradesh and Bihar. In recent years, there is a tendency for the mills to shift and concentrate in the southern and western states, especially in Maharashtra. This is because the cane produced here has a higher sucrose content. The cooler climate also ensures a longer crushing season.

(i) Where does India stand as a world producer of sugar? (1 mark)
(ii) Why are sugar mills located close to sugarcane producing areas? (1 mark)
(iii) Why are sugar mills shifting to southern and western states? (2 marks)

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

Automobiles provide vehicles for quick transport of goods, services and passengers. Trucks, buses, cars, motor cycles, scooters, three-wheelers and multi-utility vehicles are manufactured in India at various centres. After liberalisation, the coming in of new and contemporary models stimulated the demand for vehicles in the market, which led to the healthy growth of the industry. The industry is located around Delhi, Gurugram, Mumbai, Pune, Chennai, Kolkata, Lucknow, Indore, Hyderabad, Jamshedpur and Bengaluru.

(i) Name any two types of vehicles manufactured in India. (1 mark)
(ii) What stimulated the growth of automobile industry after liberalisation? (1 mark)
(iii) Why is the automobile industry important for India's economy? (2 marks)

DETAILED ANSWER KEY - PAPER 04

SECTION A - Answers to MCQs

Ans 1. (b) Cotton textile industry

The cotton textile industry suffered a setback during the colonial period because traditional handloom products could not compete with the mill-made cloth from England.

Ans 2. (c) Both fought in Europe

The two world wars were fought in Europe. India was a British colony, and there was demand for cloth in U.K., hence they gave a boost to the development of the cotton textile industry in India.

Ans 3. (c) Jharkhand

Jamshedpur is located in Jharkhand state. It is one of the major centres for automobile industry and is also famous for Tata Steel.

Ans 4. (b) Cement industry

The cement industry has strategically located plants in Gujarat that have suitable access to the market in the Gulf countries for export purposes.

Ans 5. (c) Steel

Sulphuric acid is used to manufacture fertilizers, synthetic fibres, plastics, adhesives, paints, and dye stuffs, but not steel. Steel production uses iron ore, coking coal, and limestone.

Ans 6. (c) Malleable

Aluminium is malleable, meaning it can be shaped easily. It is also light in weight, resistant to corrosion, and a good conductor of heat.

Ans 7. (b) Oil refineries or petrochemical plants

Organic chemical plants, which produce petrochemicals, are located near oil refineries or petrochemical plants to have easy access to raw materials derived from petroleum.

Ans 8. (c) Fly ash

Fly ash is a major solid waste produced by industries, along with phospho-gypsum and iron and steel slags. Sulphur dioxide and carbon monoxide are gaseous pollutants, while mercury is a liquid metal pollutant.

Ans 9. (c) Integration of economic development with environmental concerns

The challenge of sustainable development requires integration of economic development with environmental concerns. Both development and environmental protection must go hand in hand.

Ans 10. (c) Tertiary treatment

Tertiary treatment of industrial effluents involves biological, chemical and physical processes, which includes recycling of wastewater for reuse.

SECTION B - Answers to Short Answer Questions

Ans 11.

Difference between heavy and light industries:

Heavy Industries	Light Industries

Use heavy and bulky raw materials and produce heavy, bulky finished goods	Use light raw materials and produce light goods
Require large capital investment and extensive infrastructure	Require less capital and infrastructure
Example: Iron and steel industry, cement industry, shipbuilding	**Example:** Electrical goods industries, electronics, sewing machines

Ans 12.

Importance of keeping mill sector loomage lower:

1. **Employment generation:** Handlooms and powerlooms provide large-scale employment to weavers in their homes and small workshops across the country. If mill sector loomage increases, it would reduce employment opportunities for millions of traditional weavers who depend on handloom and powerloom weaving for their livelihood.
2. **Preservation of traditional skills:** Handlooms help preserve traditional weaving skills, designs, and cultural heritage of different regions. Limiting mill sector loomage ensures that traditional craftsmanship in cotton, silk, zari, and embroidery work continues to thrive, maintaining India's rich textile traditions and providing unique products that cannot be replicated by machines.

Ans 13.

Chemical industry as its own largest consumer:

The chemical industry is its own largest consumer because basic chemicals undergo further processing to produce other chemicals. This creates an internal cycle of consumption:

- Basic chemicals (like sulphuric acid, caustic soda, alkalies) are used as raw materials or inputs to manufacture other chemicals
- These processed chemicals are then used for industrial applications, agriculture, or consumer markets
- For example, sulphuric acid (a basic chemical) is used to produce fertilizers (another chemical product). Petrochemicals (organic chemicals) are used to manufacture synthetic fibers, plastics, and rubber (all chemical products)

Therefore, a large portion of chemical industry's output becomes input for further chemical production, making it its own biggest consumer.

Ans 14.

Cooperative sector industry:

Definition: Cooperative sector industries are owned and operated by the producers or suppliers of raw materials, workers, or both. They pool in the resources and share the profits or losses proportionately among the members.

Example: The sugar industry in Maharashtra and the coir industry in Kerala.

In these cooperatives, farmers who grow sugarcane (in Maharashtra) or produce coir (in Kerala) collectively own the processing mills, contribute capital, and share profits based on their contribution, ensuring fair returns and eliminating middlemen exploitation.

SECTION C - Answers to Short Answer Questions

Ans 15.

"Industry needs to be more efficient and competitive in globalisation" - Justification:

1. **Self-sufficiency is not enough:** In the present day world of globalisation, self-sufficiency alone is not enough for survival and growth. Indian industries must produce goods that can compete with products from

other countries in terms of quality, price, and innovation. If Indian products are inferior or more expensive than foreign alternatives, domestic industries will struggle even in the Indian market due to imports.
2. **International market competition:** Our manufactured goods must be at par in quality with those in the international market to be able to compete globally. Only then will India be able to export its products successfully and earn foreign exchange. If Indian products don't meet international standards, export opportunities will be lost to competitors from other countries like China, Germany, Japan, etc.
3. **Survival and growth:** Globalisation has opened up markets, meaning Indian industries now face competition from multinational companies both domestically and internationally. To survive this competition and achieve growth, Indian industries must continuously improve efficiency through better technology, skilled workforce, quality management, and cost optimization. Inefficient industries will be eliminated by market forces in a globalized economy.

Therefore, efficiency and competitiveness are essential for Indian industries to survive, grow, and contribute to national development in the era of globalisation.

Ans 16.

Three stages of treatment of industrial effluents:

1. **Primary treatment by mechanical means:**
   - This is the first stage where physical processes are used to remove large solid particles and suspended matter from wastewater
   - **Processes involved:** Screening (removing large debris), grinding (breaking down larger particles), flocculation (clumping small particles together), and sedimentation (allowing particles to settle at the bottom)
   - This removes approximately 60% of suspended solids and 30% of organic matter
2. **Secondary treatment by biological process:**
   - This stage uses biological methods where microorganisms (bacteria) break down organic pollutants in the water
   - The bacteria consume organic waste, converting it into harmless substances like water, carbon dioxide, and biomass
   - This process removes most of the remaining organic matter and significantly improves water quality
3. **Tertiary treatment by biological, chemical and physical processes:**
   - This is the most advanced treatment stage that removes remaining impurities including dissolved chemicals, heavy metals, and nutrients
   - Uses chemical processes (like chlorination), physical processes (like filtration), and biological processes
   - **Most importantly:** This stage involves recycling of wastewater, making it reusable for industrial purposes or safe for discharge into water bodies
   - Ensures that the treated water meets environmental safety standards

These three stages progressively clean industrial effluents, protecting water bodies from pollution and enabling water conservation through recycling.

Ans 17.

Why raw material is bulky and its effect on location:

Why sugarcane is bulky:

- Sugarcane is a bulky raw material because it contains a high percentage of water and fiber along with sugar juice
- The actual sugar content (sucrose) in sugarcane is only about 10-15% of its total weight
- The rest is water, bagasse (fiber), and other components, making it very heavy and voluminous to transport
- **Critical problem:** During transportation and haulage, the sucrose content reduces due to:
  - Loss of moisture
  - Fermentation of sugar
  - Deterioration if not processed quickly after harvesting

Effect on location of sugar mills:

- **Proximity to raw material source:** Sugar mills must be located very close to sugarcane producing areas to minimize transportation time and distance
- **Reducing sucrose loss:** Shorter transportation ensures that sugarcane reaches the mill quickly before significant sucrose content is lost, maximizing sugar recovery
- **Transportation cost:** Because sugarcane is so bulky (you need to transport a lot of weight for relatively little sugar), long-distance transportation would make production economically unviable due to high costs
- **Regional distribution:** This is why 60% of sugar mills are in Uttar Pradesh and Bihar (major sugarcane producing states), and mills are distributed across sugarcane growing regions rather than being concentrated in one industrial hub

Therefore, the bulky nature of sugarcane directly determines that sugar mills must be located close to agricultural areas where sugarcane is grown.

SECTION D - Answer to Long Answer Question

Ans 18.

Classification of industries with examples:

(a) ON THE BASIS OF SOURCE OF RAW MATERIALS USED:

1. Agro-based industries:

- **Definition:** Industries that use agricultural products as raw materials
- **Examples:** Cotton textile, woollen textile, jute textile, silk textile, rubber, sugar, tea, coffee, edible oil industries
- **Explanation:** These industries depend on agriculture for their raw material supply. For instance, the cotton textile industry uses cotton grown by farmers, the sugar industry uses sugarcane, and the jute industry uses jute fibers from jute plants.

2. Mineral-based industries:

- **Definition:** Industries that use minerals and metals as raw materials
- **Examples:** Iron and steel, cement, aluminium smelting, machine tools, petrochemicals
- **Explanation:** These industries depend on mineral resources extracted from the earth. For example, iron and steel industry uses iron ore, cement industry uses limestone, and aluminium smelting uses bauxite.

(b) ACCORDING TO THEIR MAIN ROLE:

1. Basic or key industries:

- **Definition:** Industries that supply their products as raw materials to manufacture other goods
- **Examples:** Iron and steel industry, copper smelting, aluminium smelting
- **Explanation:** These industries form the foundation of industrial development. Iron and steel is called the backbone of industry because all other industries depend on it for machinery and equipment. Without steel, no other industry can function effectively.

2. Consumer industries:

- **Definition:** Industries that produce goods for direct use by consumers
- **Examples:** Sugar, toothpaste, paper, sewing machines, fans, television, mobile phones
- **Explanation:** These industries manufacture finished products that consumers purchase and use directly in their daily lives. The products don't require further industrial processing and are ready for consumption.

(c) ON THE BASIS OF OWNERSHIP:

1. Public sector:

- **Definition:** Industries owned and operated by government agencies
- **Examples:** BHEL (Bharat Heavy Electricals Limited), SAIL (Steel Authority of India Limited)
- **Explanation:** These industries are established and run by the government, usually for strategic sectors or to serve public interest. The government invests capital and manages operations.

2. Private sector:

- **Definition:** Industries owned and operated by individuals or a group of individuals
- **Examples:** TISCO (Tata Iron and Steel Company), Bajaj Auto Ltd., Dabur Industries
- **Explanation:** Private entrepreneurs or companies own and manage these industries for profit. They make independent business decisions and bear all risks and rewards.

3. Joint sector:

- **Definition:** Industries jointly run by the state and individuals or a group of individuals
- **Example:** Oil India Ltd. (OIL) - jointly owned by public and private sector
- **Explanation:** In joint sector, both government and private entities invest capital and share management responsibilities, combining public interest objectives with private sector efficiency.

4. Cooperative sector:

- **Definition:** Industries owned and operated by producers or suppliers of raw materials, workers, or both, who pool resources and share profits or losses proportionately
- **Examples:** Sugar industry in Maharashtra, coir industry in Kerala
- **Explanation:** In cooperative sector, farmers or workers collectively own and run the industry. For example, in Maharashtra's sugar cooperatives, sugarcane farmers pool their resources to own sugar mills, ensuring they get fair prices for their crop and share in the profits, eliminating exploitation by private mill owners.

This classification system helps in understanding the diverse nature of Indian industries based on their raw materials, role in the economy, and ownership patterns. Each type plays a specific role in India's industrial development.

SECTION E - Answers to Case Study Based Questions

Ans 19.

(i) Where does India stand as a world producer of sugar? (1 mark)
India stands second as a world producer of sugar. However, India occupies the first place in the production of gur and khandsari.

(ii) Why are sugar mills located close to sugarcane producing areas? (1 mark)
Sugar mills are located close to sugarcane producing areas because the raw material (sugarcane) is bulky, and during transportation (haulage), its sucrose content reduces. Locating mills nearby minimizes transportation time and preserves sugar content.

(iii) Why are sugar mills shifting to southern and western states? (2 marks)
Reasons for shift to southern and western states:

- **Higher sucrose content:** The sugarcane produced in southern and western states, especially Maharashtra, has a higher sucrose content compared to cane grown in Uttar Pradesh and Bihar. This means more sugar can be extracted from the same quantity of cane, making production more profitable and efficient.
- **Longer crushing season:** The cooler climate in these regions ensures a longer crushing season, allowing mills to operate for extended periods during the year. This increases capacity utilization and profitability.
- **Better cooperative structure:** Moreover, the cooperatives are more successful in these states, providing better organization, fair prices to farmers, and efficient management, making the industry more viable and sustainable in the southern and western regions.

(Any 2 points with proper explanation)

Ans 20.

(i) Name any two types of vehicles manufactured in India. (1 mark)

1. Cars
2. Trucks

Other acceptable answers: Buses, motorcycles, scooters, three-wheelers, multi-utility vehicles.

(ii) What stimulated the growth of automobile industry after liberalisation? (1 mark)
After liberalisation, the coming in of new and contemporary models stimulated the demand for vehicles in the market, which led to the healthy growth of the automobile industry.

(iii) Why is the automobile industry important for India's economy? (2 marks)
Importance of automobile industry:

- **Quick transport and connectivity:** Automobiles provide vehicles for quick transport of goods, services and passengers, improving connectivity across the country. This facilitates trade, commerce, and personal mobility, contributing to overall economic efficiency. Better transportation reduces time and costs for businesses and improves quality of life for people.
- **Employment and supporting industries:** The automobile industry generates massive employment directly in manufacturing plants and indirectly in related sectors like:
  - Auto component manufacturing (tires, batteries, electronics, etc.)
  - Service and repair workshops
  - Dealerships and sales networks
  - Spare parts industry
  - Transportation and logistics using vehicles

  The industry supports steel, rubber, plastic, glass, and electronic industries by creating demand for their products. It also contributes significantly to government revenue through taxes and brings in foreign exchange through exports of vehicles and auto components.
