

CBSE CLASS X  
**Social Science (087)**

QUESTION PAPER  
*AI-generated question paper*

Code: 65JIUC

Questions: 25

Maximum Marks: 45

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**SELECTIONS USED**

Subject	Social Science
Lessons	6 Manufacturing Industries
Level of understanding	Initial understanding
Question selection	Curated chapter coverage (~3 questions per section)
Model	claude-sonnet-4-6

Composition — Difficulty: 13 straightforward · 12 medium | Types: 12 Short · 10 Very short · 3 MCQ

**Q1.** medium initial-understanding § Introduction [2]

A shoe factory buys raw leather and sells finished shoes in the market. In which sector of economic activity does this factory fall? Give one reason to support your answer.

◆ Manufacturing Industries

**Q2.** medium initial-understanding § IMPORTANCE OF MANUFACTURING [3]

Why is it important for a country like India to develop and diversify its manufacturing industries?

◆ Manufacturing Industries

**Q3.** straightforward initial-understanding § IMPORTANCE OF MANUFACTURING [1]

How do manufacturing industries help in reducing people's dependence on agriculture for their livelihood?

◆ Manufacturing Industries

**Q4.** straightforward initial-understanding § IMPORTANCE OF MANUFACTURING [1]

Which of the following best explains why agro-industries and agriculture are said to be interdependent?

- (A) Agro-industries produce raw materials that are sold to farmers as food crops.
- (B) Agro-industries depend on agriculture for raw materials and in turn supply goods like fertilisers, pesticides and irrigation pumps to farmers.
- (C) Agriculture depends on agro-industries only for irrigation pumps, with no other links between them.
- (D) Agro-industries boost agricultural productivity by directly cultivating the land for farmers.

A Agro-industries produce raw materials that are sold to farmers as food crops.

B Agro-industries depend on agriculture for raw materials and in turn supply goods like fertilisers, pesticides and irrigation pumps to farmers.

C Agriculture depends on agro-industries only for irrigation pumps, with no other links between them.

D Agro-industries boost agricultural productivity by directly cultivating the land for farmers.

◆ Manufacturing Industries

- Q5.** straightforward initial-understanding § Classification of Industries [1]  
Iron and steel, copper smelting, and aluminium smelting are all placed in the same category of industry. Name that category and state one characteristic that puts them there.  
◆ Manufacturing Industries
- Q6.** medium initial-understanding § Classification of Industries [2]  
Under which basis of industrial classification do cooperatives fall? Name any one industry in India that operates successfully under the cooperative ownership model.  
◆ Manufacturing Industries
- Q7.** medium initial-understanding § Classification of Industries [3]  
Industries can be classified by the bulk and weight of their raw materials and finished goods. Into which of these two groups – heavy or light – would the following fall, and why?  
(i) Shipbuilding  
(ii) Electric bulb manufacturing  
◆ Manufacturing Industries
- Q8.** medium initial-understanding § Agro-based Industries [3]  
Why did the cotton textile industry in its early years become concentrated in Maharashtra and Gujarat rather than spreading evenly across India?  
◆ Manufacturing Industries
- Q9.** medium initial-understanding § Agro-based Industries [3]  
Most jute mills in India are concentrated along the banks of the Hugli river in West Bengal. State any TWO reasons why this location was favourable for the growth of the jute industry.  
◆ Manufacturing Industries
- Q10.** straightforward initial-understanding § Agro-based Industries [1]  
Sugar mills in India tend to be located close to the sugarcane fields rather than near the consumer markets. What property of the raw material makes this necessary?  
◆ Manufacturing Industries
- Q11.** medium initial-understanding § Agro-based Industries [2]  
In recent decades, sugar mills have been shifting from Uttar Pradesh and Bihar towards Maharashtra and other southern/western states. Give TWO reasons that explain this shift.  
◆ Manufacturing Industries
- Q12.** medium initial-understanding § Jute Textiles [3]  
Why are most jute mills in India concentrated along the banks of the Hugli river? Give any two reasons.  
◆ Manufacturing Industries
- Q13.** straightforward initial-understanding § Mineral-based Industries [1]  
Why is iron and steel classified as a heavy industry?  
◆ Manufacturing Industries
- Q14.** straightforward initial-understanding § Iron and Steel Industry [1]  
Why is iron and steel classified as a heavy industry?  
◆ Manufacturing Industries

**Q15.** medium initial-understanding § Iron and Steel Industry [2]

Why is the Chhotanagpur plateau region considered ideal for the concentration of iron and steel industries?

◆ Manufacturing Industries

**Q16.** straightforward initial-understanding § Aluminium Smelting [1]

Why are aluminium smelting plants required to be located near a reliable and regular supply of electricity?

◆ Manufacturing Industries

**Q17.** straightforward initial-understanding § Fertilizer Industry [1]

India produces nitrogenous and phosphatic fertilizers but has to import one key fertilizer nutrient entirely. Name this nutrient and the reason for its import.

◆ Manufacturing Industries

**Q18.** medium initial-understanding § Cement Industry [3]

Why are cement plants in India generally located close to sources of raw materials like limestone and coal? What does this tell us about the nature of the cement industry?

◆ Manufacturing Industries

**Q19.** straightforward initial-understanding § Information Technology and Electronics Industry [1]

Which city is known as the electronic capital of India, and why has it emerged as a major hub for the IT industry?

◆ Manufacturing Industries

**Q20.** straightforward initial-understanding § Industrial Pollution and Environmental Degradation [1]

Which type of industrial pollution occurs when hot water discharged from factories and thermal plants enters rivers and ponds without being cooled first?

- A Air pollution
- B Thermal pollution
- C Noise pollution
- D Land pollution

◆ Manufacturing Industries

**Q21.** straightforward initial-understanding § Industrial Pollution and Environmental Degradation [1]

Name any two industries that are major causes of water pollution and mention one harmful substance discharged by each into water bodies.

◆ Manufacturing Industries

**Q22.** medium initial-understanding § Industrial Pollution and Environmental Degradation [3]

Explain how air pollution and noise pollution caused by industries harm human health.

◆ Manufacturing Industries

**Q23.** medium initial-understanding § Industrial Pollution and Environmental Degradation [3]

Explain how industrial waste can contaminate both soil and groundwater. Why is it important to treat industrial effluents before releasing them?

◆ Manufacturing Industries

**Q24.** straightforward initial-understanding § Control of Environmental Degradation [1]

What is the purpose of fitting pollution-control devices such as electrostatic precipitators to factory chimneys? What type of pollutant do they help remove?

- A To reduce noise pollution from machinery
- B To reduce particulate matter in the air
- C To treat liquid effluents before they enter rivers
- D To recycle wastewater within the factory

◆ Manufacturing Industries

**Q25.** straightforward initial-understanding § ACTIVITY [1]

Name the three chief raw materials required to manufacture iron and steel.

◆ Manufacturing Industries

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CBSE CLASS X  
**Social Science (087)**

## ANSWER KEY

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Q1. medium initial-understanding § Introduction

[2]

A shoe factory buys raw leather and sells finished shoes in the market. In which sector of economic activity does this factory fall? Give one reason to support your answer.

◆ Manufacturing Industries

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**Model Answer**

The shoe factory falls in the **secondary sector** (manufacturing sector) of economic activity.

**Reason:** It processes raw materials (leather) into finished goods (shoes) of higher value using machines. As stated, "production of goods in large quantities after processing from raw materials to more valuable products is called manufacturing," which belongs to the secondary sector.

Source: Manufacturing Industries, Chapter 6

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**Explanation**

- The key concept tested is the **three sectors of economy**: primary, secondary, tertiary.
- Secondary sector = manufacturing/processing raw materials into finished goods.
- Always mention **both** the sector name **and** a clear reason (raw material → finished product) to secure both marks.
- Quoting or paraphrasing the textbook definition of manufacturing strengthens the answer.

Q2. medium initial-understanding § IMPORTANCE OF MANUFACTURING

[3]

Why is it important for a country like India to develop and diversify its manufacturing industries?

◆ Manufacturing Industries

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### Model Answer

Manufacturing industries are important for India due to the following reasons:

1. **Reduces dependence on agriculture:** Industries provide jobs in secondary and tertiary sectors, reducing people's dependence on agricultural income.
1. **Eradicates unemployment and poverty:** Industrial development reduces regional disparities by establishing industries in tribal and backward areas.
1. **Earns foreign exchange:** Export of manufactured goods expands trade and commerce and brings in much-needed foreign exchange.
1. **Increases prosperity:** Countries that transform raw materials into finished goods of higher value are prosperous. India's prosperity lies in increasing and diversifying its manufacturing industries as quickly as possible.

Source: Chapter 6, Importance of Manufacturing

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### Explanation

Examiners look for **four distinct points** for 3 marks — typically any 3 well-stated points earn full marks. Use the exact phrases from the textbook (e.g., "foreign exchange," "regional disparities," "eradication of unemployment and poverty") as these are recognised by CBSE examiners. Avoid writing vague or general statements; be specific and concise.

Q3. straightforward initial-understanding § IMPORTANCE OF MANUFACTURING

[1]

How do manufacturing industries help in reducing people's dependence on agriculture for their livelihood?

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### Model Answer

Manufacturing industries provide jobs in the secondary and tertiary sectors, thereby reducing people's heavy dependence on agricultural income for their livelihood.

Source: Importance of Manufacturing, Chapter 6

### Explanation

The answer is directly lifted from the textbook line: "reduce the heavy dependence of people on agricultural income by providing them jobs in secondary and tertiary sectors." For 1 mark, one crisp line quoting/paraphrasing this is sufficient. No extra elaboration needed.

Q4. straightforward initial-understanding § IMPORTANCE OF MANUFACTURING

[1]

Which of the following best explains why agro-industries and agriculture are said to be interdependent?

- (A) Agro-industries produce raw materials that are sold to farmers as food crops.
- (B) Agro-industries depend on agriculture for raw materials and in turn supply goods like fertilisers, pesticides and irrigation pumps to farmers.
- (C) Agriculture depends on agro-industries only for irrigation pumps, with no other links between them.
- (D) Agro-industries boost agricultural productivity by directly cultivating the land for farmers.

A Agro-industries produce raw materials that are sold to farmers as food crops.

B Agro-industries depend on agriculture for raw materials and in turn supply goods like fertilisers, pesticides and irrigation pumps to farmers.

C Agriculture depends on agro-industries only for irrigation pumps, with no other links between them.

D Agro-industries boost agricultural productivity by directly cultivating the land for farmers.

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### Model Answer

**(B)** Agro-industries depend on agriculture for raw materials and in turn supply goods like fertilisers, pesticides and irrigation pumps to farmers.

### Explanation

The passage directly states: "They depend on the latter (agriculture) for raw materials and sell their products such as irrigation pumps, fertilisers, pesticides... to the farmers." This two-way relationship defines interdependence. Options A, C, and D are factually incorrect or incomplete as per the text.

Q5. straightforward initial-understanding § Classification of Industries

[1]

Iron and steel, copper smelting, and aluminium smelting are all placed in the same category of industry. Name that category and state one characteristic that puts them there.

◆ Manufacturing Industries

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### Model Answer

**Mineral-based industries.** They use minerals/metals as raw materials — e.g., iron ore for steel, bauxite for aluminium, and copper ore for copper smelting.

### Explanation

The question has two parts in one mark: name the category (mineral-based) and state one characteristic (raw materials are minerals/metals). Keep it to one line. The textbook explicitly lists iron and steel, cement, and aluminium under "mineral-based" in the classification table.

Q6. medium initial-understanding § Classification of Industries

[2]

Under which basis of industrial classification do cooperatives fall? Name any one industry in India that operates successfully under the cooperative ownership model.

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### Model Answer

Cooperatives fall under the **ownership-based** classification of industries.

The **sugar industry** in India operates successfully under the cooperative ownership model. Maharashtra and other southern states have especially successful sugar cooperatives, as the cane there has higher sucrose content and the seasonal nature of the industry suits the cooperative sector.

Source: Chapter 6, Sugar Industry section

### Explanation

- The two marks are split: 1 mark for naming the basis of classification (ownership), and 1 mark for a correct example.
- The textbook explicitly states that the sugar industry "is ideally suited to the cooperative sector" and that "cooperatives are more successful" in Maharashtra — so sugar industry is the safest, most textbook-backed answer.
- Avoid writing lengthy descriptions; one clear example with brief justification is sufficient for 2 marks.

Q7. medium initial-understanding § Classification of Industries

[3]

Industries can be classified by the bulk and weight of their raw materials and finished goods. Into which of these two groups — heavy or light — would the following fall, and why?

- Shipbuilding
- Electric bulb manufacturing

◆ Manufacturing Industries

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### Model Answer

#### (i) Shipbuilding — Heavy Industry

Shipbuilding uses heavy and bulky raw materials such as iron, steel, and large machinery, and the finished product (a ship) is also extremely heavy and large. Hence, it is classified as a **heavy industry**.

#### (ii) Electric Bulb Manufacturing — Light Industry

Electric bulb manufacturing uses light raw materials (glass, fine wires, gas) and produces light finished goods. Hence, it is classified as a **light industry**.

Source: Classification of Industries, Chapter 6

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### Explanation

- The NCERT table in this chapter lists **Shipbuilding** under heavy industries and **Electric Bulbs** under light industries — quote this directly.
- The key criterion is the **bulk and weight** of both raw materials AND finished goods — mention both to score full marks.
- Keep each answer to 1–2 lines with a clear reason; the "why" is essential for the marks.

Q8. medium initial-understanding § Agro-based Industries

[3]

Why did the cotton textile industry in its early years become concentrated in Maharashtra and Gujarat rather than spreading evenly across India?

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### Model Answer

In the early years, the cotton textile industry concentrated in Maharashtra and Gujarat due to several locational factors:

1. **Availability of raw cotton** — Both states lie in the cotton-growing belt, ensuring easy and cheap supply of raw material.
2. **Moist climate** — Suitable for spinning and weaving as it prevents yarn from breaking.
3. **Transport and port facilities** — Accessible ports (Mumbai) helped import machinery and export finished cloth.
4. **Labour and market** — Adequate labour supply and a ready market for cloth supported growth.

These combined advantages made concentration in these states more favourable than uniform spread across India.

Source: *Cotton Textiles, Chapter 6 (Manufacturing Industries)*

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### Explanation

The examiner expects students to list **at least 3–4 locational factors** directly from the textbook line: "*Availability of raw cotton, market, transport including accessible port facilities, labour, moist climate, etc. contributed towards its localisation.*" Mention each factor briefly with a one-line reason. Avoid writing only one factor — that won't fetch full 3 marks. No need for an introduction; go straight to the points.

Q9. medium initial-understanding § Agro-based Industries

[3]

Most jute mills in India are concentrated along the banks of the Hugli river in West Bengal. State any TWO reasons why this location was favourable for the growth of the jute industry.

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### Model Answer

Jute mills are concentrated along the Hugli river because:

1. **Proximity to raw material and cheap transport:** The jute-growing areas of West Bengal are nearby, and the river provides inexpensive water transport supported by a good network of railways and roadways for moving raw material to mills.
1. **Abundant water and cheap labour:** The Hugli river supplies abundant water needed for processing raw jute. Cheap labour is available from West Bengal and adjoining states of Bihar, Odisha and Uttar Pradesh. Additionally, Kolkata provides banking, insurance and port facilities for export.

Source: Jute Textiles, Chapter 6

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### Explanation

The question asks for **two** reasons but carries **3 marks**, so one reason can be elaborated slightly or a bonus point added. Examiners look for: (i) water transport / proximity to raw material and (ii) abundant water for processing + cheap labour. Always link the factor to the Hugli river specifically. Avoid generic answers — mention West Bengal, Bihar, Odisha, etc. by name for full credit.

Q10. straightforward initial-understanding § Agro-based Industries

[1]

Sugar mills in India tend to be located close to the sugarcane fields rather than near the consumer markets. What property of the raw material makes this necessary?

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### Model Answer

Sugarcane is a **perishable and bulky** raw material — its sucrose content reduces during transportation, making it essential to process it close to the fields.

Source: *Sugar Industry, Chapter 6*

### Explanation

The passage directly states: "The raw material used in this industry is bulky, and in haulage its sucrose content reduces." Examiners expect both key properties — **bulk** and **perishability (loss of sucrose)** — in one line. Mentioning only one may cost half the mark.

Q11. medium initial-understanding § Agro-based Industries

[2]

In recent decades, sugar mills have been shifting from Uttar Pradesh and Bihar towards Maharashtra and other southern/western states. Give TWO reasons that explain this shift.

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### Model Answer

Sugar mills have shifted towards Maharashtra and other southern/western states because:

1. **Higher sucrose content** — The sugarcane grown in Maharashtra and southern states has a higher sucrose content, making sugar extraction more efficient.
2. **Longer crushing season** — The cooler climate in these regions ensures a longer crushing season, increasing productivity. Additionally, cooperatives are more successful here.

Source: Sugar Industry, Chapter 6

### Explanation

The passage directly states all three reasons for this shift. For a 2-mark question, examiners expect exactly **two** clear, distinct points. Write each as a labelled point. The key terms to include are "**higher sucrose content**" and "**longer crushing season**" — these are the textbook phrases examiners look for. The success of cooperatives can be added as a bonus but isn't strictly needed for full marks.

Q12. medium initial-understanding § Jute Textiles

[3]

Why are most jute mills in India concentrated along the banks of the Hugli river? Give any two reasons.

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### Model Answer

Most jute mills in India are concentrated along the banks of the Hugli river due to the following reasons:

1. **Proximity to raw material:** The Hugli basin is close to the jute-producing areas of West Bengal, ensuring easy and cheap supply of raw jute to the mills.
1. **Cheap water transport and labour:** Inexpensive water transport, supported by railways and roadways, facilitates movement of raw material. Abundant cheap labour is available from West Bengal and adjoining states like Bihar, Odisha, and Uttar Pradesh.

Additionally, Kolkata provides banking, insurance, and port facilities, while abundant water is available for processing raw jute.

Source: Jute Textiles, Chapter 6

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### Explanation

- This is a **3-mark** question, so two well-explained reasons are expected (with a possible third point for full marks).
- Directly lift factors from the textbook passage — examiners expect textbook-aligned language.
- Common mistake: writing only one-line reasons without brief elaboration. Each point needs a short explanation to earn full marks.
- Key terms to include: **proximity, water transport, cheap labour, Kolkata's facilities.**

Q13. straightforward initial-understanding § Mineral-based Industries

[1]

Why is iron and steel classified as a heavy industry?

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### Model Answer

Iron and steel is classified as a heavy industry because all its raw materials (iron ore, coking coal, limestone) and finished goods are heavy and bulky, entailing heavy transportation costs.

Source: *Iron and Steel Industry, Chapter 6*

### Explanation

The passage directly defines why it is a "heavy industry" — the key phrase examiners look for is **"heavy and bulky raw materials and finished goods"** leading to **"heavy transportation costs"**. Naming the raw materials (iron ore, coking coal, limestone) adds precision and can fetch full marks. Keep it to one line for a 1-mark answer.

Q14. straightforward initial-understanding § Iron and Steel Industry

[1]

Why is iron and steel classified as a heavy industry?

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### Model Answer

Iron and steel is classified as a heavy industry because all its raw materials (iron ore, coking coal, limestone) as well as finished goods are heavy and bulky, entailing heavy transportation costs.

Source: *Iron and Steel Industry, Chapter 6*

### Explanation

The answer must use the exact reason given in the textbook: **heavy and bulky raw materials + finished goods = heavy transportation costs**. Examiners expect this specific phrasing. Avoid vague answers like "it uses a lot of iron" — be precise about both raw materials and finished goods being heavy/bulky.

Q15. medium initial-understanding § Iron and Steel Industry

[2]

Why is the Chhotanagpur plateau region considered ideal for the concentration of iron and steel industries?

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### Model Answer

The Chhotanagpur plateau region is ideal for iron and steel industries due to the following reasons:

- **Low cost of iron ore** available nearby.
- **High-grade raw materials** (iron ore, coking coal, limestone, manganese) in close proximity, reducing transportation costs.
- **Cheap labour** is easily available.
- **Vast growth potential** in the home market.

### Explanation

The question is directly answered from the textbook passage on iron and steel. Examiners expect students to list the relative advantages — raw material proximity, low cost, cheap labour, and market potential. Avoid writing general points; stick to the four specific advantages mentioned in the source. Each point earns half a mark, so all four should be included.

Source: Manufacturing Industries, Chapter 6

Q16. straightforward initial-understanding § Aluminium Smelting

[1]

Why are aluminium smelting plants required to be located near a reliable and regular supply of electricity?

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### Model Answer

Aluminium smelting requires a **regular supply of electricity** because the electrolytic process used to smelt bauxite is highly power-intensive, making electricity a prime factor for its location.

Source: Aluminium Smelting, Chapter 6

### Explanation

The passage directly states that "regular supply of electricity and an assured source of raw material at minimum cost are the two prime factors for location of the industry." The examiner expects you to link electricity to the smelting/electrolytic process. One crisp sentence is sufficient for 1 mark.

Q17. straightforward initial-understanding § Fertilizer Industry

[1]

India produces nitrogenous and phosphatic fertilizers but has to import one key fertilizer nutrient entirely. Name this nutrient and the reason for its import.

◆ Manufacturing Industries

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### Model Answer

**Potash (K)** is entirely imported because India has no reserves of commercially usable potash or potassium compounds in any form.

### Explanation

The passage directly states that potash is "entirely imported as the country does not have any reserves of commercially usable potash or potassium compounds in any form." For 1 mark, name the nutrient and give the one-line reason — nothing more is needed.

Source: Fertilizer Industry, Chapter 6

Q18. medium initial-understanding § Cement Industry

[3]

Why are cement plants in India generally located close to sources of raw materials like limestone and coal? What does this tell us about the nature of the cement industry?

◆ Manufacturing Industries

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### Model Answer

Cement plants are located close to limestone, coal and other raw materials because these inputs are **bulky and heavy**, making transportation expensive. It is more economical to set up plants near the source of raw materials than to carry them long distances to factories.

This tells us that the cement industry is a **weight-losing/raw-material oriented industry** — the raw materials are heavier than the finished product, so proximity to raw material sources reduces production costs significantly.

Source: *Manufacturing Industries, Chapter 6*

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### Explanation

- The key phrase examiners want is "**bulky and heavy raw materials**" — copy it from the chapter.
- Link it explicitly to the concept of **raw-material orientation** (weight-losing industry) — this fetches the analytical mark.
- Three marks = one fact (why located there) + one example/support + one inference (nature of industry). Keep it tight.

**Q19.** straightforward initial-understanding § Information Technology and Electronics Industry

[1]

Which city is known as the electronic capital of India, and why has it emerged as a major hub for the IT industry?

◆ Manufacturing Industries

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### Model Answer

Bengaluru is known as the **electronic capital of India** due to its major concentration of electronics and IT industries, driving growth in both hardware and software sectors.

Source: *Information Technology and Electronics Industry, Chapter 6*

### Explanation

This is a 1-mark question, so only one line is needed. The examiner expects two things: naming **Bengaluru** and giving a brief reason (IT/electronics hub). Avoid listing other cities — that wastes words. The phrase "electronic capital of India" is directly from the textbook, so use it exactly.

**Q20.** straightforward initial-understanding § Industrial Pollution and Environmental Degradation

[1]

Which type of industrial pollution occurs when hot water discharged from factories and thermal plants enters rivers and ponds without being cooled first?

- A Air pollution
- B Thermal pollution
- C Noise pollution
- D Land pollution

◆ Manufacturing Industries

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### Model Answer

**Answer: B — Thermal pollution**

Thermal pollution occurs when hot water from factories and thermal plants is discharged into rivers and ponds without being cooled first.

Source: *Industrial Pollution and Environmental Degradation, Chapter 6*

### Explanation

The textbook explicitly defines thermal pollution as discharge of hot water from factories/thermal plants into water bodies before cooling. Examiners expect students to recall the correct term and its definition. The key distinguishing factor here is *hot water* → *thermal* pollution.

**Q21.** straightforward initial-understanding § Industrial Pollution and Environmental Degradation

[1]

Name any two industries that are major causes of water pollution and mention one harmful substance discharged by each into water bodies.

◆ Manufacturing Industries

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### Model Answer

**Textile/dyeing industry** — discharges **dyes** into water bodies; **Tanneries** — discharge **heavy metals like lead/mercury** into rivers.

### Explanation

The question is 1 mark, so one line naming two industries with one pollutant each is sufficient. The passage explicitly lists textile and dyeing industries (dyes) and tanneries (heavy metals) as major culprits of water pollution. You may also use paper/pulp (acids), petroleum refineries (salts), or electroplating (heavy metals) — any two valid pairs from the passage earn full marks.

**Q22.** medium initial-understanding § Industrial Pollution and Environmental Degradation

[3]

Explain how air pollution and noise pollution caused by industries harm human health.

◆ Manufacturing Industries

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### Model Answer

**Air Pollution:** Industries release harmful gases like sulphur dioxide and carbon monoxide, and airborne particulates such as dust, smoke, and mist. Factories like chemical plants, brick kilns, and refineries emit smoke by burning fossil fuels. These pollutants adversely affect human health — toxic gas leaks (e.g., Bhopal Gas Tragedy) can cause long-term, hazardous health effects on humans, animals, and plants.

**Noise Pollution:** Industrial machinery, factory equipment, generators, pneumatic drills, and saws produce unwanted sound. This causes irritation, anger, stress, hearing impairment, increased heart rate, and high blood pressure among workers and nearby residents.

Source: *Industrial Pollution and Environmental Degradation, Chapter 6*

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### Explanation

- The question is worth **3 marks**, so examiners expect **at least 2–3 distinct health effects for each type** of pollution.
- Always **name specific gases** (SO<sub>2</sub>, CO) for air pollution — it shows precise knowledge.
- Mentioning the **Bhopal Gas Tragedy** as an example adds value and is directly from the textbook.
- For noise pollution, list **physiological effects** (heart rate, blood pressure, hearing loss) separately from **psychological effects** (irritation, stress) — examiners look for this distinction.
- Keep each part roughly equal since both types share the marks.

**Q23.** medium initial-understanding § Industrial Pollution and Environmental Degradation

[3]

Explain how industrial waste can contaminate both soil and groundwater. Why is it important to treat industrial effluents before releasing them?

◆ Manufacturing Industries

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### Model Answer

Industrial waste such as dyes, acids, heavy metals (lead, mercury), and chemicals is discharged into water bodies, causing **water pollution**. When dumped on land, rainwater percolates through the soil, carrying these pollutants into the **groundwater**, contaminating it.

It is important to treat industrial effluents before release because:

- One litre of industrial waste pollutes **eight times** the quantity of freshwater.
- Untreated effluents contain toxic substances harmful to aquatic life and human health.
- Treatment (primary, secondary, tertiary) removes harmful substances, preventing irreversible damage to ecosystems.

Source: Industrial Pollution and Environmental Degradation; Control of Environmental Degradation — Chapter 6

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### Explanation

- The examiner expects you to link **soil** → **rainwater percolation** → **groundwater contamination** using textbook language.
- Mention the "8 times" figure — it is a specific fact from the chapter that shows you've read it carefully.
- Name the **three stages of treatment** (primary/secondary/tertiary) briefly; don't elaborate unless asked.
- Keep causes and importance as two distinct parts for clarity and full marks.

**Q24.** straightforward initial-understanding § Control of Environmental Degradation

[1]

What is the purpose of fitting pollution-control devices such as electrostatic precipitators to factory chimneys? What type of pollutant do they help remove?

- A To reduce noise pollution from machinery
- B To reduce particulate matter in the air
- C To treat liquid effluents before they enter rivers
- D To recycle wastewater within the factory

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### Model Answer

**Answer: B — To reduce particulate matter in the air**

Electrostatic precipitators fitted to factory smoke stacks help remove **particulate matter** (dust, smoke, mist) from the air before it is released into the atmosphere.

### Explanation

The source passage explicitly states: "*Particulate matter in the air can be reduced by fitting smoke stacks to factories with electrostatic precipitators, fabric filters, scrubbers and inertial separators.*" Options A and D are incorrect distractors (noise and wastewater are separate issues). Option C refers to effluent treatment, not air pollution control. The key term to remember is **particulate matter** — solid and liquid particles suspended in air.

**Q25.** straightforward initial-understanding § ACTIVITY

[1]

Name the three chief raw materials required to manufacture iron and steel.

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### Model Answer

The three chief raw materials required to manufacture iron and steel are **iron ore, coking coal, and limestone**, required in the ratio of approximately 4:2:1.

Source: Iron and Steel Industry, Chapter 6

### Explanation

The passage directly states "Iron ore, coking coal and lime stone are required in the ratio of approximately 4 : 2 : 1." Examiners expect all three names mentioned correctly. Mentioning the ratio is a bonus but not compulsory for 1 mark. Manganese is also mentioned but is described as an additional/minor requirement, not one of the three *chief* raw materials.

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