

CBSE CLASS X
Social Science (087)

ANSWER KEY

AI-generated question paper

Code: 2CHJMH Questions: 30 Maximum Marks: 63 Generated: 2026-06-26 10:07

SELECTIONS USED

Subject	Social Science
Lessons	6 Manufacturing Industries
Level of understanding	Exam-ready
Question selection	CBSE board paper, whole lesson (~80 marks across Sections A-E)
Model	claude-sonnet-4-6

Composition — Difficulty: 11 straightforward · 16 medium · 3 deep | Types: 9 MCQ · 6 Very short · 5 Assertion–reason · 5 Short · 3 Case-based · 2 Long | Sections: A 14Q/14m · B 6Q/12m · C 5Q/15m · D 2Q/10m · E 3Q/12m

Q1. straightforward exam-ready

[1]

Production and consumption of which material is often regarded as the index of a country's development?

- (A) Aluminium
- (B) Cement
- (C) Steel
- (D) Fertilizer

- A Aluminium
- B Cement
- C Steel
- D Fertilizer

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Model Answer**(C) Steel**

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

Source: Iron and Steel Industry, Chapter 6

Explanation

The textbook explicitly states: "*Production and consumption of steel is often regarded as the index of a country's development.*" This is a direct fact — memorise the exact phrase. No other material (aluminium, cement, fertilizer) is described this way in the chapter.

Q2. straightforward exam-ready

[1]

In what approximate ratio are iron ore, coking coal and limestone required for the manufacture of steel?

(A) 2 : 4 : 1

(B) 4 : 2 : 1

(C) 1 : 2 : 4

(D) 2 : 1 : 4

A 2 : 4 : 1

B 4 : 2 : 1

C 1 : 2 : 4

D 2 : 1 : 4

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Model Answer**(B) 4 : 2 : 1**

Iron ore, coking coal and limestone are required in the ratio of approximately **4 : 2 : 1** for the manufacture of steel.

Explanation

The passage directly states: "Iron ore, coking coal and lime stone are required in the ratio of approximately 4 : 2 : 1." This is a straightforward fact-based MCQ — just recall the correct order: iron ore is the highest (4), then coking coal (2), then limestone (1).

Q3. straightforward exam-ready

[1]

Which type of industrial waste causes thermal pollution of water bodies?

(A) Fly ash discharged into rivers

(B) Hot water drained from factories and thermal plants before cooling

(C) Toxic gas leaks from chemical factories

(D) Solid slag from iron and steel plants

A Fly ash discharged into rivers

B Hot water drained from factories and thermal plants before cooling

C Toxic gas leaks from chemical factories

D Solid slag from iron and steel plants

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Model Answer**(B) Hot water drained from factories and thermal plants before cooling**

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

Explanation

The passage explicitly states: "Thermal pollution of water occurs when hot water from factories and thermal plants is drained into rivers and ponds before cooling." Option B directly matches this definition. Fly ash causes solid waste/water pollution (not thermal), toxic gas leaks cause air pollution, and slag is a solid waste — none of these cause **thermal** pollution.

Q4. straightforward exam-ready

[1]

Sugar industry is described as 'seasonal in nature' and is therefore ideally suited to which sector?

- (A) Public sector
- (B) Private sector
- (C) Cooperative sector
- (D) Joint sector

- A Public sector
- B Private sector
- C Cooperative sector
- D Joint sector

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Model Answer

(C) Cooperative sector — Sugar industry is seasonal in nature, so it is ideally suited to the cooperative sector, where producers pool resources and share profits/losses.

Source: Sugar Industry, Chapter 6

Explanation

The textbook directly states: *"This industry is seasonal in nature so, it is ideally suited to the cooperative sector."* The cooperative sector works well here because farmers (raw material suppliers) collectively own and operate the mills, sharing risks during off-seasons. This is a direct fact-based MCQ — no reasoning is needed in the answer, just the correct option with a brief supporting line.

Q5. straightforward exam-ready

[1]

Which fertilizer component does India import entirely because it has no commercially usable domestic reserves?

- (A) Nitrogen
- (B) Phosphate
- (C) Potash
- (D) Urea

- A Nitrogen
- B Phosphate
- C Potash
- D Urea

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Model Answer

(C) Potash — India imports potash entirely as it has no reserves of commercially usable potash or potassium compounds in any form.

Source: Fertilizer Industry, Chapter 6

Explanation

The passage explicitly states: "*potash is entirely imported as the country does not have any reserves of commercially usable potash or potassium compounds in any form.*" Nitrogen (urea) and phosphatic fertilizers are produced domestically; only potash is 100% imported. Urea is a product, not a raw component.

Q6. medium exam-ready

[1]

Which of the following is a device fitted to factory smoke stacks to reduce particulate matter in air?

- (A) Silencer
- (B) Electrostatic precipitator
- (C) Inorganic filter
- (D) Ash pond

- A Silencer
- B Electrostatic precipitator
- C Inorganic filter
- D Ash pond

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Model Answer**(B) Electrostatic precipitator**

Smoke stacks of factories are fitted with electrostatic precipitators (along with fabric filters, scrubbers and inertial separators) to reduce particulate matter in air.

Source: Control of Environmental Degradation, Chapter 6

Explanation

The 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.*" Silencers are for noise reduction, not particulate matter. "Inorganic filter" is not a term used in the chapter. Ash ponds are part of waste management, not smoke stack devices.

Q7. straightforward exam-ready

[1]

In the cotton textile industry, while spinning is centralised in Maharashtra, Gujarat and Tamil Nadu, weaving is:

- (A) Centralised only in Maharashtra
- (B) Highly decentralised
- (C) Restricted to handlooms only
- (D) Done exclusively in mills

- A Centralised only in Maharashtra
- B Highly decentralised
- C Restricted to handlooms only
- D Done exclusively in mills

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Model Answer**(B) Highly decentralised**

While spinning is centralised in Maharashtra, Gujarat and Tamil Nadu, weaving is **highly decentralised** to provide scope for incorporating traditional skills and designs.

Explanation

The answer is directly stated in the source passage: "weaving is highly decentralised to provide scope for incorporating traditional skills and designs of weaving in cotton, silk, zari, embroidery, etc." Options C and D are incorrect because the passage clearly states weaving is done by handloom, powerloom, *and* in mills — not restricted to one method.

Q8. medium exam-ready

[1]

Soda ash, used in the manufacture of glass, soaps and detergents, and paper, belongs to which category of chemicals?

- (A) Organic chemicals
- (B) Petrochemicals
- (C) Inorganic chemicals
- (D) Synthetic chemicals

- A Organic chemicals
- B Petrochemicals
- C Inorganic chemicals
- D Synthetic chemicals

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Model Answer**(C) Inorganic chemicals**

Soda ash (used to make glass, soaps, detergents, and paper) belongs to the category of **inorganic chemicals**.

Source: Chemical Industries, Chapter 6

Explanation

The passage explicitly lists soda ash under **inorganic chemicals** along with sulphuric acid, nitric acid, alkalis, and caustic soda. Students must not confuse it with organic chemicals (which include petrochemicals) or synthetic chemicals. Direct recall from the textbook line is enough for full marks.

Q9. straightforward exam-ready

[1]

Which plateau region has the maximum concentration of iron and steel industries in India?

- (A) Deccan Plateau
(B) Malwa Plateau
(C) Chhotanagpur Plateau
(D) Meghalaya Plateau
- A Deccan Plateau
B Malwa Plateau
C Chhotanagpur Plateau
D Meghalaya Plateau

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Model Answer

(C) Chhotanagpur Plateau — It has the maximum concentration of iron and steel industries due to proximity of raw materials, low-cost iron ore, cheap labour, and vast market potential.

Explanation

The textbook explicitly states: "*Chhotanagpur plateau region has the maximum concentration of iron and steel industries.*" The key reasons are proximity of high-grade raw materials, low-cost iron ore, and cheap labour. Students must not confuse this with the Deccan Plateau, which is a common distractor.

Q10. medium exam-ready

[1]

Read the following statements carefully and choose the correct option.

Assertion (A): The iron and steel industry is called a basic or key industry.

Reason (R): All other industries — heavy, medium and light — depend on it for their machinery and raw materials.

- A Both (A) and (R) are true and (R) is the correct explanation of (A).
B Both (A) and (R) are true, but (R) is not the correct explanation of (A).
C (A) is true, but (R) is false.
D (A) is false, but (R) is true.

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Model Answer

Option A is correct. Both (A) and (R) are true and (R) is the correct explanation of (A). The iron and steel industry is basic/key because all other industries depend on it for their machinery.

Source: Iron and Steel Industry, Chapter 6

Explanation

The textbook explicitly states: "*The iron and steel industry is the basic industry since all the other industries — heavy, medium and light, depend on it for their machinery.*" This directly supports both the Assertion and confirms the Reason correctly explains why it is called a basic/key industry. In Assertion-Reason questions, choose Option A only when the Reason accurately and directly explains the Assertion — which it does here.

Q11. medium exam-ready**[1]**

Read the following statements carefully and choose the correct option.

Assertion (A): In recent years, sugar mills have been shifting towards Maharashtra and other southern and western states.

Reason (R): The sugarcane grown in these regions has a higher sucrose content and the cooler climate ensures a longer crushing season.

- A Both (A) and (R) are true and (R) is the correct explanation of (A).
- B Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- C (A) is true, but (R) is false.
- D (A) is false, but (R) is true.

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Model Answer

Option A is correct. Both (A) and (R) are true and (R) is the correct explanation of (A), as the passage states mills shift to Maharashtra because sugarcane there has higher sucrose content and cooler climate ensures a longer crushing season.

Explanation

The source passage directly supports both statements. The higher sucrose content and longer crushing season (due to cooler climate) are explicitly given as reasons for the southward/westward shift of sugar mills — making (R) a direct and correct explanation of (A). Choose option **A**.

Q12. medium exam-ready**[1]**

Read the following statements carefully and choose the correct option.

Assertion (A): Aluminium has become a popular substitute for steel, copper, zinc and lead in several industries.

Reason (R): Aluminium is light, highly resistant to corrosion and becomes strong when alloyed with other metals.

Options: (A) Both (A) and (R) are true and (R) is the correct explanation of (A). (B) Both (A) and (R) are true, but (R) is not the correct explanation of (A). (C) (A) is true, but (R) is false. (D) (A) is false, but (R) is true.

- A Both (A) and (R) are true and (R) is the correct explanation of (A).
- B Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- C (A) is true, but (R) is false.
- D (A) is false, but (R) is true.

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Model Answer

(A) Both (A) and (R) are true and (R) is the correct explanation of (A).

Explanation

The textbook directly states that aluminium is light, resistant to corrosion, and becomes strong when mixed with other metals — and that these properties have made it a popular substitute for steel, copper, zinc and lead. So (R) directly explains (A).

Q13. medium exam-ready

[1]

Read the following statements carefully and choose the correct option.

Assertion (A): India is the largest producer of raw jute and jute goods in the world but stands second to Bangladesh as an exporter.

Reason (R): Most jute mills are located along the banks of the Hugli river because of proximity to raw jute areas, cheap water transport and abundant water for processing.

Options: (A) Both (A) and (R) are true and (R) is the correct explanation of (A). (B) Both (A) and (R) are true, but (R) is not the correct explanation of (A). (C) (A) is true, but (R) is false. (D) (A) is false, but (R) is true.

A Both (A) and (R) are true and (R) is the correct explanation of (A).

B Both (A) and (R) are true, but (R) is not the correct explanation of (A).

C (A) is true, but (R) is false.

D (A) is false, but (R) is true.

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Model Answer

(B) Both (A) and (R) are true, but (R) is not the correct explanation of (A).

Explanation

Both statements are factually correct as per the textbook. However, the reason (why mills are on the Hugli) explains the *location of jute mills*, not *why India is second to Bangladesh as an exporter*. India's lower export rank is due to the Partition of 1947, after which three-fourths of jute-producing areas went to Bangladesh — this is the actual explanation for (A), not (R). Hence (B) is correct.

Q14. medium exam-ready

[1]

Read the following statements carefully and choose the correct option.

Assertion (A): Export of manufactured goods expands trade and commerce and brings in much needed foreign exchange.

Reason (R): Countries that transform raw materials into a wide variety of finished goods of higher value tend to be more prosperous.

- A Both (A) and (R) are true and (R) is the correct explanation of (A).
- B Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- C (A) is true, but (R) is false.
- D (A) is false, but (R) is true.

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Model Answer

Option A: Both (A) and (R) are true and (R) is the correct explanation of (A).

Both statements are directly from the text. (R) explains *why* exporting manufactured goods is important — transforming raw materials into finished goods of higher value brings prosperity and foreign exchange.

Source: Importance of Manufacturing, Chapter 6

Explanation

Both statements appear together in the same paragraph of the textbook, explicitly linking export of manufactured goods to prosperity. The Reason directly explains the Assertion — countries prosper by transforming raw materials into higher-value finished goods, which is exactly what manufactured exports achieve. Examiners expect students to identify this causal link, making **Option A** the correct choice.

Q15. straightforward exam-ready

[2]

Distinguish between 'basic industries' and 'consumer industries' with one example of each.

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Model Answer

Basic industries supply their products as raw materials to manufacture other goods. Example: Iron and steel industry.

Consumer industries produce goods for direct use by consumers. Example: Sugar industry (or toothpaste, paper, fans).

Source: *Classification of Industries*, Chapter 6

Explanation

- Examiners look for a clear one-line distinction for each type + one correct example each — that's where both marks lie.
- Don't confuse "basic/key" industries with "heavy" industries; they are different classifications.
- Examples must match the textbook list: basic — iron & steel, copper/aluminium smelting; consumer — sugar, toothpaste, paper, fans, sewing machines.

Q16. straightforward exam-ready

[2]

Mention two features of the textile industry that make it the largest contributor to industrial employment in India.

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Model Answer

The textile industry is the largest contributor to industrial employment in India due to:

1. **Self-reliant value chain** — It is the only industry that is complete from raw material to finished products, generating employment at every stage like ginning, spinning, weaving, dyeing, tailoring, etc.
2. **Decentralised nature** — Weaving is highly decentralised; handloom and powerloom sectors, including cottage industries like khadi, provide employment to a large number of workers in their homes.

Source: Agro-based Industries, Chapter 6

Explanation

- Examiners expect two **distinct, labelled points** for a 2-mark answer.
- Key phrase from the textbook: "*self-reliant and complete in the value chain*" — must be mentioned.
- The second point should highlight **decentralisation** and the role of **handloom/cottage industry** in mass employment.
- Avoid vague statements; tie each point directly to employment generation.

Q17. medium exam-ready

[2]

State two factors that have contributed to the recent shift of sugar mills towards southern and western states of India.

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Model Answer

Two factors responsible for the shift of sugar mills towards southern and western states are:

1. **Higher sucrose content** — The sugarcane grown in these states has a higher sucrose content, making it more suitable for sugar production.
2. **Longer crushing season** — The cooler climate ensures a longer crushing season, increasing productivity.

(Bonus: cooperatives are more successful in these states.)

Source: Sugar Industry, Chapter 6

Explanation

The answer is directly from the passage on the Sugar Industry. Examiners expect these specific points: *higher sucrose content* and *longer crushing season due to cooler climate*. Avoid vague answers like "better climate" — use the exact terms from the textbook. Two distinct points are needed for 2 marks (1 mark each).

Q18. straightforward exam-ready

[2]

How does noise pollution caused by industries affect human health? Mention any two effects.

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Model Answer

Noise pollution caused by industries affects human health in the following ways:

1. **Hearing impairment** — Prolonged exposure to loud industrial noise can damage hearing ability.
2. **Increased heart rate and blood pressure** — Noise acts as a source of stress and causes physiological effects such as raised heart rate and blood pressure.

It also causes irritation and anger.

Source: Industrial Pollution and Environmental Degradation, Chapter 6

Explanation

The answer is directly lifted from the passage: *"Noise pollution not only results in irritation and anger, it can also cause hearing impairment, increased heart rate and blood pressure among other physiological effects."*

Examiners expect exactly these points. Name any **two** distinct effects clearly — do not write vague answers like "it is harmful to health." Using the correct terminology (hearing impairment, blood pressure) earns full marks.

Q19. medium exam-ready

[2]

What is meant by 'value addition' in manufacturing? Why is it important for a country's prosperity?

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Model Answer

Value addition means transforming raw materials into finished goods of higher value through manufacturing. For example, wood is converted into paper, or iron ore into steel.

It is important because countries that convert raw materials into a wide variety of finished goods become prosperous. It also generates employment, reduces dependence on agriculture, and earns foreign exchange through exports.

Source: Chapter 6 — Manufacturing Industries, Introduction and Importance of Manufacturing

Explanation

- The term "value addition" comes directly from the textbook: *"Countries that transform their raw materials into a wide variety of finished goods of higher value are prosperous."*
- Link it to India's prosperity — examiners expect you to connect the concept to the country's economic development.
- Mention at least **two reasons** why it matters (employment + foreign exchange + prosperity) to secure both marks.
- Keep it to 2–3 sentences; no need to list all points from the chapter.

Q20. medium exam-ready

[2]

Mention two ways in which agro-industries help in modernising agriculture in India.

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Model Answer

Agro-industries help in modernising agriculture in two ways:

1. They supply essential inputs to farmers such as irrigation pumps, fertilisers, insecticides, pesticides, and machines, which raise agricultural productivity.
2. They make production processes more efficient, thus helping agriculturists increase their output.

Source: Manufacturing Industries, Chapter 6

Explanation

The passage directly states that agro-industries "sell their products such as irrigation pumps, fertilisers, insecticides, pesticides, plastic and PVC pipes, machines and tools, etc. to the farmers" and have "made the production processes very efficient." Pick these two distinct points for full marks. Avoid vague answers — name specific inputs for precision.

Q21. medium exam-ready

[3]

Explain three factors responsible for the concentration of jute mills along the banks of the Hugli river in West Bengal.

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Model Answer

Three factors responsible for the concentration of jute mills along the Hugli river are:

1. **Proximity to raw material** — The jute-producing areas of West Bengal and Bangladesh (erstwhile East Pakistan) are located nearby, ensuring easy and cheap supply of raw jute.
1. **Water transport and infrastructure** — Inexpensive water transport, supported by a good network of railways and roadways, facilitates movement of raw material to the mills. Abundant water is also available for processing raw jute.
1. **Labour and banking facilities** — Cheap labour is available from West Bengal and adjoining states of Bihar, Odisha and Uttar Pradesh. Kolkata provides banking, insurance and port facilities for export of jute goods.

Source: Jute Textiles, Chapter 6

Explanation

- The question asks for **three** distinct factors — award yourself 1 mark each for labour/cheap labour, proximity to jute area, and transport/water/port facilities.
- Avoid listing the same factor twice (e.g., "water for transport" and "water for processing" count as one point unless you clearly separate them).
- Naming specific states (Bihar, Odisha, UP) and mentioning Kolkata's port adds detail examiners appreciate.

Q22. medium exam-ready

[3]

Explain why the Chhotanagpur plateau region has become the hub of iron and steel industries in India. Give three reasons.

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Model Answer

The Chhotanagpur plateau region has become the hub of iron and steel industries due to the following reasons:

1. **Low cost of iron ore** — High-grade iron ore is available at low cost in the nearby regions of Jharkhand, Odisha, and Chhattisgarh.
2. **High-grade raw materials in proximity** — Coking coal, limestone, and manganese are all available close by, reducing transportation costs.
3. **Cheap labour** — Abundant cheap labour is available in this region.
4. **Vast home market** — The region has high growth potential in the domestic market for steel products.

Source: *Iron and Steel Industry, Chapter 6*

Explanation

The question asks for **three** reasons, but the textbook passage lists **four** distinct advantages — write all four to be safe (examiners accept 3 of these for full marks). Stick to the exact phrases from the textbook: "*low cost of iron ore,*" "*high grade raw materials in proximity,*" "*cheap labour,*" "*vast growth potential in the home market.*" These are the expected keywords; paraphrasing too far may cost marks.

Q23. straightforward exam-ready

[3]

Describe any three properties of aluminium that make it a preferred metal in modern industries.

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Model Answer

Three properties of aluminium that make it a preferred metal in modern industries:

1. **Light weight** – It is light, making it ideal for manufacturing aircraft and other vehicles where weight reduction is essential.
2. **Resistant to corrosion** – It does not rust or corrode easily, increasing the durability of products like utensils and wires.
3. **Good conductor of heat and malleable** – It conducts heat well and can be shaped easily, making it useful in electrical wires and cookware.

Due to these properties, it serves as a substitute for steel, copper, zinc and lead in many industries.

Source: *Aluminium Smelting, Chapter 6*

Explanation

- The question asks for **three properties**, so list exactly three — each worth 1 mark.
- Pick properties directly from the textbook passage: light, corrosion-resistant, good conductor of heat, malleable, becomes strong when mixed with other metals.
- Briefly link each property to a use/application — examiners expect this to show understanding, not just rote listing.
- Avoid copying all properties in a single line without explanation; separate them clearly for full marks.

Q24. medium exam-ready

[3]

Explain how water pollution caused by industries affects the environment. Name any three types of industries responsible for it.

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Model Answer**Effect of Water Pollution on Environment:**

Industries discharge organic and inorganic wastes and effluents into rivers and water bodies. These contain dyes, detergents, acids, salts, and heavy metals like lead and mercury, making water unsafe for humans and aquatic life. Thermal pollution (hot water discharge) also harms aquatic ecosystems. Pollutants seep into soil and contaminate groundwater, affecting agriculture and drinking water sources.

Three Industries Responsible:

1. Paper and Pulp industries
2. Textile and Dyeing industries
3. Petroleum Refineries / Tanneries

Source: Industrial Pollution and Environmental Degradation, Chapter 6

Explanation

- The question has two parts — effects (2 marks) and naming industries (1 mark). Distribute your answer accordingly.
- Key terms to include: effluents, heavy metals (lead, mercury), thermal pollution, groundwater contamination.
- The textbook explicitly lists paper, pulp, chemical, textile/dyeing, petroleum refineries, and tanneries — pick any three for full marks.
- Avoid generic statements; use textbook-specific vocabulary like "organic and inorganic industrial wastes."

Q25. deep exam-ready

[3]

'The chemical industry is its own largest consumer.' What does this mean? Support your answer with suitable reasoning.

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Model Answer

The statement means that chemical industries themselves use a large share of the chemicals they produce as raw materials for further manufacturing.

Reasoning:

- Basic chemicals like sulphuric acid, nitric acid, and caustic soda are not just sold to end consumers; they are used *within* the chemical industry itself as inputs.
- For example, sulphuric acid is used to manufacture fertilizers, synthetic fibres, plastics, paints, and dyes — all of which are products of other chemical units.
- Petrochemicals (organic chemicals) are used to manufacture synthetic rubber, synthetic fibres, plastics, drugs, and pharmaceuticals.
- Thus, chemicals pass through multiple stages of processing within the industry before reaching agriculture or consumer markets.

Source: Manufacturing Industries, Chapter 6 — Chemical Industries section

Explanation

Examiners expect you to explain the statement and then give concrete examples from the textbook. The key idea is **chemicals as raw materials for other chemical products** — a chain reaction within the industry itself. Avoid vague statements; always name specific chemicals (sulphuric acid, petrochemicals) and their downstream uses. The reasoning with examples earns the full 3 marks.

Q26. deep exam-ready

[5]

Describe the major challenges faced by the cotton textile industry in India. How has the industry's spatial distribution evolved over time? (2+3=5)

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Model Answer**Challenges faced by the cotton textile industry:**

- 1. Competition during colonial period:** Traditional cotton textile industry suffered a setback as it could not compete with mill-made cloth imported from England.
- 2. Poor quality of weaving:** India has world-class spinning, but weaving supplies low-quality fabric as it cannot fully utilise the high-quality yarn produced in the country.
- 3. Decentralisation issues:** Weaving is highly decentralised across handloom, powerloom and mills, making quality control and modernisation difficult.
- 4. Raw material and infrastructure:** Dependence on several localisation factors like moist climate, ports, and labour makes the industry regionally constrained.

Spatial distribution over time:

- Initially, the industry was concentrated in the **cotton-growing belt of Maharashtra and Gujarat** due to raw cotton availability, moist climate, port facilities, and labour.
- The first textile mill was set up in **Mumbai in 1854**.
- Over time, **spinning** remained centralised in Maharashtra, Gujarat, and Tamil Nadu, while **weaving** decentralised across the country to preserve traditional skills and designs.
- Handloom weaving spread as a cottage industry nationwide, especially through khadi.

Source: *Agro-based Industries, Chapter 6*

Explanation

- The question has two parts (2+3): spend ~2 points on challenges and ~3 points on spatial distribution.
- Examiners expect specific facts: Mumbai 1854, Maharashtra/Gujarat/Tamil Nadu for spinning, decentralisation of weaving.
- The key contrast to highlight is **centralised spinning vs. decentralised weaving** — this is a frequently tested point.
- Avoid writing vague general statements; use textbook-specific reasons for localisation.

Q27. medium exam-ready

[5]

Explain the various ways in which industries pollute land, air and water. Suggest measures that can be adopted to control industrial pollution. (2+3=5)

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Model Answer**How Industries Pollute Land, Air and Water:**

- **Air:** Factories emit sulphur dioxide, carbon monoxide and particulate matter (dust, smoke, mist). Chemical plants, brick kilns, refineries and smelting plants burn fossil fuels, releasing toxic gases.
- **Water:** Paper, textile, dyeing, tanneries and electroplating industries discharge dyes, detergents, acids, heavy metals (lead, mercury) into rivers. Thermal pollution occurs when hot water is drained into rivers before cooling.
- **Land:** Dumping of glass, harmful chemicals, industrial effluents, salts and packaging renders soil useless. Rainwater carries pollutants into groundwater.

Measures to Control Industrial Pollution:

1. Reuse and recycle water in successive stages; harvest rainwater.
2. Treat effluents in three phases – primary (mechanical), secondary (biological), tertiary (chemical/physical) – before discharge.
3. Fit smoke stacks with electrostatic precipitators, scrubbers and fabric filters; use gas/oil instead of coal.
4. Regulate overdraw of groundwater legally.
5. Use noise-absorbing materials and fit generators/machinery with silencers to reduce noise pollution.

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

Explanation

- The question is split **2 marks (pollution) + 3 marks (measures)**, so write slightly more on measures.
- Name specific industries and pollutants for the pollution part – examiners reward specificity (lead, mercury, sulphur dioxide, etc.).
- For measures, the three-phase treatment of effluents is a frequently asked point; always include it.
- Avoid generic statements like "factories are bad" – use textbook terminology (electrostatic precipitators, flocculation, etc.) to score full marks.

Q28. medium exam-ready**[4]**

Read the following information and answer the questions that follow:

India is the largest producer of raw jute and jute goods in the world and stands second as an exporter after Bangladesh. Most jute mills are located in West Bengal, mainly in a narrow belt along the banks of the Hugli river. The first jute mill was set up near Kolkata in 1855. After the Partition in 1947, the jute mills remained in India but three-fourths of the jute-producing area went to Bangladesh. The industry faces stiff competition from synthetic substitutes and the slow adoption of diversified jute products.

- (i) Why did Partition in 1947 create a major problem for the jute industry in India? (1)
(ii) State any two geographical factors that led to the concentration of jute mills along the Hugli river. (1)
(iii) Identify one major challenge facing the jute industry today and suggest one way to address it. (2)

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Model Answer

(i) After Partition in 1947, the jute mills remained in India, but three-fourths of the jute-producing area went to Bangladesh (East Pakistan). This created a major problem as India had the processing units but lost most of its raw material supply area.

(ii) Two geographical factors:

- Proximity to jute-producing areas ensured easy availability of raw material.
- Abundant water from the Hugli river was available for processing raw jute.

(iii) Challenge: The jute industry faces stiff competition from synthetic substitutes.

Solution: The industry should focus on diversification of jute products (eco-friendly packaging, geotextiles, composites) to create new markets and reduce dependence on traditional uses.

Source: *Jute Textiles, Chapter 6*

Explanation

- **(i)** is 1 mark — one clear sentence linking mills in India to loss of raw material base is enough.
- **(ii)** is 1 mark — name **two** factors from the passage (water transport, proximity, cheap labour, etc.); pick any two but keep them brief.
- **(iii)** is 2 marks — one mark for identifying the challenge (synthetic competition) and one mark for a valid solution (diversification/eco-friendly products). The passage directly mentions both the problem and the hint about diversified jute products.
- Always anchor answers in the passage; examiners look for passage-based evidence, not generic knowledge.

Q29. medium exam-ready

[4]

Read the following passage and answer the questions that follow:

Every litre of waste water discharged by industry pollutes eight times the quantity of freshwater. Industrial effluents can be treated in three phases: primary treatment involves mechanical means such as screening, grinding, flocculation and sedimentation; secondary treatment uses biological processes; and tertiary treatment involves recycling of wastewater through biological, chemical and physical processes. In addition, particulate matter in the air can be reduced by fitting smoke stacks with electrostatic precipitators, fabric filters, scrubbers and inertial separators.

- (i) What is the purpose of tertiary treatment of industrial effluents? (1)
(ii) Name any two devices, other than electrostatic precipitators, that can be fitted to smoke stacks to reduce air pollution. (1)
(iii) Apart from treating effluents, suggest two other strategies industries can adopt to reduce water pollution. (2)

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Model Answer

(i) Tertiary treatment involves recycling of wastewater through biological, chemical and physical processes. Its purpose is to further purify water so it can be reused or safely discharged.
(ii) Two devices (other than electrostatic precipitators) that can be fitted to smoke stacks to reduce air pollution are:

- Fabric filters
- Scrubbers (or inertial separators)

(iii) Two other strategies industries can adopt to reduce water pollution:

- **Minimising use of water** for processing by reusing and recycling it in two or more successive stages.
- **Harvesting rainwater** to meet water requirements, reducing dependence on freshwater sources.

Source: *Control of Environmental Degradation, Chapter 6*

Explanation

- **(i)** The answer is directly stated in the passage — "tertiary treatment by biological, chemical and physical processes...involves recycling of wastewater." Mention recycling explicitly.
- **(ii)** The passage lists four devices; the question excludes electrostatic precipitators, so pick any two from the remaining three: fabric filters, scrubbers, inertial separators.
- **(iii)** The passage lists three strategies to reduce water pollution. The question asks for strategies *apart from treating effluents*, so avoid mentioning effluent treatment — pick minimising/recycling water use and rainwater harvesting. Each point earns 1 mark.

Q30. deep exam-ready

[4]

Study the following information and answer the questions that follow:

The cotton textile industry is self-reliant and complete in the value chain — from raw material to the highest value-added products. In the early years, it was concentrated in the cotton-growing belts of Maharashtra and Gujarat. While spinning continues to be centralised in Maharashtra, Gujarat and Tamil Nadu, weaving is highly decentralised to incorporate traditional skills and designs. India has world-class production in spinning, but weaving supplies low-quality fabric as it cannot fully utilise the high-quality yarn produced domestically.

- (i) What does 'complete in the value chain' mean in the context of the cotton textile industry? (1)
(ii) Why was the cotton textile industry originally concentrated in Maharashtra and Gujarat? State any two reasons. (1)
(iii) What is the contradiction in India's cotton textile industry regarding spinning and weaving, and what could be a possible consequence? (2)

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Model Answer

(i) 'Complete in the value chain' means the cotton textile industry covers every stage of production — from raw cotton (raw material) to finished garments (highest value-added products) — without depending on any external industry.

(ii) The cotton textile industry was concentrated in Maharashtra and Gujarat because:

- Both states were cotton-growing regions, ensuring easy availability of raw material.
- Factors like moist climate, accessible port facilities, labour and transport further favoured localisation.

(iii) The contradiction is that India has world-class production in **spinning**, yet **weaving** supplies only low-quality fabric. This happens because weaving is highly decentralised and cannot fully utilise the high-quality yarn produced domestically. A possible consequence is that India loses potential export earnings and cannot capture higher value-added markets in finished fabric.

Source: *Textile Industry, chapter 6*

Explanation

- **(i)** Focus on the phrase "raw material to highest value-added products" from the passage — that is the definition examiners expect.
- **(ii)** Two reasons are enough for 1 mark — pick any two from: raw cotton availability, moist climate, port facilities, labour, transport/market.
- **(iii)** This is 2 marks — clearly state the contradiction (world-class spinning vs. poor weaving quality) AND give a consequence (lost export value / inability to use domestic yarn). Both parts are needed for full marks.

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