

CBSE CLASS X

Social Science (087)

QUESTION PAPER

From previous CBSE Board Exam questions

Code: 89H2BV

Questions: 26

Maximum Marks: 67

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SELECTIONS USED

Source	Previous-year board
Subject	Social Science
Lessons	Water Resources
Year	2022-2026
Questions selected	26

Composition — Types: 12 MCQ · 7 source_based · 4 Long · 2 Short · 1 fill_in_blank

Q1. § Introduction

[5]

How can the industrial pollution of fresh water be reduced ? Explain with examples.

Previously asked in: 2023 32/6/1 Q31(a)

♦ Water Resources

Industrial Pollution of Fresh Water and Its Reduction

Q2. § Introduction

§ MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT

§ BAMBOO DRIP [5]

IRRIGATION SYSTEM

Describe any five steps taken to save fresh water from industrial pollution.

Previously asked in: 2024 32/4/1 Q31(b)

♦ Water Resources

Industrial Pollution and Freshwater Conservation

Q3. § Introduction

§ WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT

[3]

Explain any three factors responsible for water pollution.

Previously asked in: 2025 32/6/1 Q28(a)

♦ Water Resources

Factors Responsible for Water Pollution

Q4. § Introduction

§ WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT

[3]

How have industrialisation and urbanisation impacted water supply? Explain.

Previously asked in: 2025 32/3/1 Q26

♦ Water Resources

Impact of Industrialisation and Urbanisation on Water Supply

Q5. § Introduction

§ WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT

[5]

Recent evidence suggests that overuse of groundwater is threatening sustainable development. Analyse the statement in the context of sustainability of development.

Previously asked in: 2025 32/1/1 Q33(a)

♦ Water Resources

Overuse and depletion of groundwater

Sustainability of water resources and sustainable development

Q6. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION SYSTEM [1]

Match the Column – A with Column – B and choose the correct option :

Column – A (River): I. Mahanadi II. Narmada III. Chambal IV. Chenab

Column – B (Dam): 1. Sardar Sarovar 2. Hirakud 3. Salal 4. Rana Pratap Sagar

(A) I-4, II-3, III-2, IV-1

(B) I-3, II-4, III-1, IV-2

(C) I-2, II-1, III-4, IV-3

(D) I-1, II-2, III-3, IV-4

Previously asked in: 2023 32/6/1 Q6

♦ Water Resources

Major Dams and Associated Rivers in India

Q7. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT [1]

In which of the following States Tungabhadra Dam is located ?

A Tamil Nadu

B Kerala

C Andhra Pradesh

D Karnataka

Previously asked in: 2023 32/1/1 Q6

♦ Water Resources

Major Dams and Multipurpose River Projects in India

Q8. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT [1]

Match Column-I with Column-II and choose the correct option :

Column-I (Dam): a. Sardar Sarovar b. Salal c. Gandhi Sagar d. Hirakud

Column-II (River): i. Mahanadi ii. Chambal iii. Narmada iv. Chenab

(A) a-ii b-i c-iv d-iii

(B) a-iii b-iv c-i d-ii

(C) a-iii b-iv c-ii d-i

(D) a-i b-iii c-iv d-ii

Previously asked in: 2025 32/5/1 Q8

♦ Water Resources

Major Dams and their Associated Rivers in India

Q9. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT [1]

Choose the correct option to fill the blank. An artificial lake built in the 11th century for water conservation is _____.

(A) Sambhar Lake

(B) Wular Lake

(C) Bhopal Lake

(D) Chilka Lake

Previously asked in: 2025 32/5/1 Q7

♦ Water Resources

Traditional water conservation structures – artificial lakes

Q10. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Arrange the location of the following dams of India from North to South and choose the correct option :

I. Pravara; II. Salal; III. Koyna; IV. Gandhi Sagar

- (A) II, IV, III, I
- (B) II, IV, I, III
- (C) III, II, IV, I
- (D) III, IV, II, I

Previously asked in: 2026 32/3/1 Q13

♦ Water Resources

Major Dams and Reservoirs of India - Location and Distribution

Q11. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Match Column I with Column II and choose the correct option.

Column I (Dams): i. Sardar Sarovar, ii. Hirakud, iii. Bhakra Nangal, iv. Nagarjuna Sagar

Column II (Rivers): a. Sutlej, b. Krishna, c. Narmada, d. Mahanadi

- (A) i-a, ii-b, iii-c, iv-d
- (B) i-b, ii-a, iii-d, iv-c
- (C) i-c, ii-d, iii-b, iv-a
- (D) i-c, ii-d, iii-a, iv-b

Previously asked in: 2024 32/4/1 Q6

♦ Water Resources

Major Dams and their Rivers in India

Q12. § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT **[5]**

How has the overuse of underground water created a serious crisis in many parts of India ? Explain with examples in the context of sustainable development. (2+3=5)

Previously asked in: 2025 32/2/1 Q33(b)

♦ Water Resources

Groundwater Crisis and Sustainable Development

Need for Water Conservation and Management

Overuse and depletion of groundwater

Q13. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Choose the correct option of the states that have been majorly benefitted by the Sardar Sarovar Dam.

- A Rajasthan, Gujarat, Punjab and Haryana
- B Maharashtra, Madhya Pradesh, Gujarat and Rajasthan
- C Maharashtra, Madhya Pradesh, Telangana and Andhra Pradesh
- D Madhya Pradesh, Rajasthan, Karnataka and Chhattisgarh

Previously asked in: 2025 32/2/1 Q8

♦ Water Resources

Sardar Sarovar Dam and beneficiary states

Q14. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION SYSTEM [1]

Match Column I with Column II and choose the correct option :

Column I (River): a. Chambal, b. Ganga, c. Chenab, d. Satluj

Column II (Dam): i. Salal, ii. Bhakra Nangal, iii. Gandhi Sagar, iv. Tehri

A a-ii, b-iii, c-i, d-iv

B a-ii, b-iii, c-iv, d-i

C a-iii, b-iv, c-i, d-ii

D a-iii, b-iv, c-ii, d-i

Previously asked in: 2025 32/2/1 Q7

♦ Water Resources

Dams and Rivers – Match the Following (Salal, Bhakra Nangal, Gandhi Sagar, Tehri)

Q15. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT [1]

Match Column I with Column II and choose the correct option :

Column I (Dam) — Column II (River)

a. Hirakud — i. Chambal

b. Gandhi Sagar — ii. Krishna

c. Nagarjuna Sagar — iii. Kaveri

d. Mettur — iv. Mahanadi

(A) a-iv, b-i, c-iii, d-ii

(B) a-i, b-ii, c-iv, d-iii

(C) a-iv, b-i, c-ii, d-iii

(D) a-i, b-ii, c-iii, d-iv

Previously asked in: 2025 32/1/1 Q7

♦ Water Resources

Dams and their associated rivers in India

Q16. § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT § MULTI-PURPOSE RIVER PROJECTS [4]
AND INTEGRATED WATER RESOURCES MANAGEMENT § RAINWATER HARVESTING**Pradhan Mantri Krishi Sinchayee Yojana**

Floods have not only devastated life and property but also caused extensive soil erosion. Sedimentation also meant that the flood plains were deprived of silt, a natural fertilizer, further adding on to the problem of land degradation. It was also observed that the multipurpose projects induced earthquakes, caused water-borne diseases and pests and pollution resulting from excessive use of water.

Irrigation has also changed the cropping pattern of many regions with farmers shifting to water intensive and commercial crops. This has great ecological consequences like salinisation of the soil.

Pradhan Mantri Krishi Sinchayee Yojana has been started which ensures access to some means to protective irrigation for all agricultural farms in the country, thus bringing much desired rural prosperity. Some of the broad objectives of this programme are to enhance the physical access of water on the farm and expand cultivable area under assured irrigation (har khet ko pani), improve on farm water, use efficiency to reduce wastage and increase availability both in duration and extent, irrigation and other water saving technologies (per drop more crop) and introduce sustainable water conservation practices, etc.

Read the given source carefully and answer the questions that follow :

18.1 Explain the role of floods in land degradation. [1]

18.2 How has irrigation changed cropping pattern ? [1]

18.3 Explain any two objectives of the 'Pradhan Mantri Krishi Sinchayee Yojana'. [2]

Previously asked in: 2026 32/5/1 Q18

♦ **Water Resources**

Impact of irrigation on cropping patterns

Pradhan Mantri Krishi Sinchayee Yojana – objectives and significance

Role of floods in land degradation and soil erosion

Q17. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[4]****Sardar Sarovar Project**

Sardar Sarovar Dam has been built over the Narmada river in Gujarat. This is one of the largest water resources projects of India covering four states – Maharashtra, Madhya Pradesh, Gujarat and Rajasthan. The Sardar Sarovar Project would meet the requirement of water in drought prone and desert areas. Sardar Sarovar Project will provide irrigation facilities to 18.45 lakh hectare of land, covering 3112 villages in 15 districts of Gujarat. It will also irrigate 2,46,000 hectare of land in the strategic desert districts of Barmer and Jalore in Rajasthan and 37,500 hectare in the tribal hilly tract of Maharashtra through lift. About 75% of the command area in Gujarat is drought prone while entire command in Rajasthan is drought prone. Assured water supply will soon make this area drought proof.

Read the given source and answer the questions that follow :

18.1 Why is Sardar Sarovar Project considered important for Gujarat ? [1]

18.2 Why is Sardar Sarovar Project designed to cover four states ? [1]

18.3 In what ways does this project promote sustainability ? [2]

Previously asked in: 2026 32/4/1 Q18

♦ **Water Resources**

Multipurpose River Projects (Sardar Sarovar Dam on Narmada)

Sustainable use of water resources

Q18. § RAINWATER HARVESTING**[4]**

In ancient India, along with the sophisticated hydraulic structures, there existed an extraordinary tradition of water-harvesting system. People had an in-depth knowledge of rainfall regimes and soil types and developed wide ranging techniques to harvest groundwater, rainwater, river water and flood water in keeping with the local ecological conditions and their water needs. In hilly and mountainous regions, people built diversion channels like the kuls and guls of Western Himalayas for agriculture. Rooftop rainwater harvesting was very commonly practised to store drinking water, particularly in Rajasthan.

Read the given extract and answer the questions that follow :

(35.1) Mention any two methods of traditional water-harvesting used in India. [1]

(35.2) How do people of Rajasthan utilise rainwater ? [1]

(35.3) Explain any two benefits of rainwater harvesting. [2]

Previously asked in: 2023 32/5/1 Q35

♦ **Water Resources**

Benefits of Rainwater Harvesting

Rainwater Harvesting in Rajasthan (Khadins and Rooftop Harvesting)

Traditional Water-Harvesting Systems in India

Q19. § RAINWATER HARVESTING**[4]****RAINWATER HARVESTING**

Many thought that given the disadvantages and rising resistance against the multi purpose projects, water harvesting system was a viable alternative, both socio-economically and environmentally. In ancient India, along with the sophisticated hydraulic structures, there existed an extraordinary tradition of water harvesting system. People had in-depth knowledge of rainfall regimes and soil types and developed wide ranging techniques to harvest rainwater, groundwater, river water and flood water in keeping with the local ecological conditions and their water needs. In hill and mountainous regions, people built diversion channels like the 'guls' or 'kuls' of the Western Himalayas for agriculture. 'Rooftop rainwater harvesting' was commonly practised to store drinking water, particularly in Rajasthan. In the flood plains of Bengal, people developed inundation channels to irrigate their fields. In arid and semi-arid regions, agricultural fields were converted into rain fed storage structures that allowed the water to stand and moisten the soil like the 'khadins' in Jaisalmer and 'Johads' in other parts of Rajasthan.

Read the given source and answer the questions that follow :

(I) Why is water harvesting system a viable alternative ? [1]

(II) Describe the process of 'rooftop rainwater harvesting.' [1]

(III) Mention any two methods adopted by ancient India for water conservation. [2]

Previously asked in: 2023 32/4/1 Q35

♦ **Water Resources**

Ancient Water Conservation Methods in India

Rainwater Harvesting as a Viable Alternative

Rooftop Rainwater Harvesting

Q20. § RAINWATER HARVESTING § BAMBOO DRIP IRRIGATION SYSTEM**[1]**

Which one of the following is the irrigation system in Meghalaya ?

- (A) To irrigate land only during rainy season.
- (B) To use large volumes of water for irrigation.
- (C) To remove water from soil.
- (D) To use bamboo drip irrigation system.

Previously asked in: 2024 32/3/1 Q8

♦ Water Resources Traditional Rainwater Harvesting and Irrigation Systems

Q21. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION SYSTEM **[1]**

In which Indian state is 'Bamboo drip irrigation' system used ?

- A Himachal Pradesh
- B Kerala
- C Rajasthan
- D Meghalaya

Previously asked in: 2026 32/2/1 Q11

♦ Water Resources Bamboo Drip Irrigation System in Meghalaya

Q22. § BAMBOO DRIP IRRIGATION SYSTEM**[1]**

In which one of the following states is 'bamboo drip irrigation system' prevalent ?

- (A) Tamil Nadu
- (B) West Bengal
- (C) Meghalaya
- (D) Odisha

Previously asked in: 2024 32/5/1 Q6

♦ Water Resources Bamboo Drip Irrigation System

Q23. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § RAINWATER HARVESTING [4]**FLOODS**

Basic safety Precautions To Be Taken :

- Listen to radio/TV for the latest weather bulletins and flood warnings. Pass on the information to others.
- Make a family emergency kit which should include; a portable radio/transistor, torch, spare batteries, a first aid box along with essential medicines, ORS, dry food items, drinking water, matchboxes, candles and other essential items.
- Keep hurricane lamp, ropes, rubber tubes, umbrella and bamboo stick in your house. These could be useful.
- Keep your cash, jewellery, valuables, important documents etc. in a safe place.
- If there is a flood, move along with your family members and cattle to safe areas like relief camps, evacuation centers, elevated grounds where you can take shelter.
- Turn off power and gas connections before leaving your house.

During floods :

- Don't enter into flood waters; it could be dangerous.
- Don't allow children to play in or near flood waters.
- Stay away from sewerage line, gutters, drains, culverts etc.
- Be careful of snakes; snakebites are common during floods.
- Stay away from electric poles and fallen power-lines to avoid electrocution.
- Don't use wet electrical appliances-get them checked before use.
- Eat freshly cooked and dry food. Always keep your food covered.
- Use boiled and filtered drinking water.
- Keep all drains, gutters near your house clean.
- Stagnation of water can breed vector/water-borne diseases. In case of sickness, seek medical assistance.
- Use bleaching powder and lime to disinfect the surroundings.

Read the following source carefully and answer the questions that follow :

35.1 Mention any two essential items that should be included in a 'family emergency kit'. [1]

35.2 Why are the items of family emergency kit important during flood situation ? [1]

35.3 In case of a flood, what are the recommended actions to ensure the safety of your family and belongings ? Describe any two. [2]

Previously asked in: 2024 32/1/1 Q35

♦ **Water Resources**

Reading a factual/informational passage and answering questions (source-based comprehension)

Q24. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION SYSTEM [1]

Choose the correctly matched pair :

I (Multi-purpose River Project) — II (River)

- A Gandhi Sagar — Chambal
- B Hirakud — Godavari
- C Nagarjuna Sagar — Kaveri
- D Salal — Beas

Previously asked in: 2025 32/6/1 Q20

♦ **Water Resources**

Multi-purpose River Projects and Associated Rivers

Q25. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[4]**

Most of the objections to the projects arose due to their failure to achieve the purposes for which they were built. Ironically, the dams that were constructed to control the floods have triggered floods due to sedimentation in the reservoir. Moreover, the big dams have mostly been unsuccessful in controlling floods at the time of excessive rainfall. You may have seen or read how the release of water from the dams during heavy rains aggravated the flood situation in Maharashtra and Gujarat in 2006. The floods have not only devastated life and property but also caused extensive soil erosion. Sedimentation also meant that the flood plains were deprived of silt, a natural fertiliser, further adding on to the problem of land degradation. It was also observed that the multi-purpose projects induced earthquakes, caused water-borne diseases and pests and pollution resulting from excessive use of water.

Read the given source and answer the questions that follow :

(35.1) Name the movement against the river project in Gujarat. [1]

(35.2) How have the big dams mostly been unsuccessful in controlling floods at the time of excessive rainfall ? [1]

(35.3) Analyse any two merits of multi-purpose river projects. [2]

Previously asked in: 2023 32/2/1 Q35

♦ Water Resources

Merits of Multi-purpose River Projects

Multi-purpose River Projects – Objections and Controversies

Narmada Bachao Andolan

Q26. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § RAINWATER HARVESTING **[4]****FLOODS**

Basic safety precautions to be taken :

- Listen to radio/TV for the latest weather bulletins and flood warnings. Pass on the information to others.
- Make a family emergency kit which should include, a portable radio/transistor, torch, spare batteries, a first aid box along with essential medicines, ORS, dry food items, drinking water, matchboxes, candles and other essential items.
- Keep hurricane lamp, ropes, rubber tubes, umbrella and bamboo stick in your house. These could be useful.
- Keep your cash, jewellery, valuables, important documents etc. in a safe place.
- If there is a flood, move along with your family members and cattle to safe areas like relief camps, evacuation centers, elevated grounds where you can take shelter.
- Turn off power and gas connections before leaving your house.

During Floods

- Don't enter into flood waters; it could be dangerous.
- Don't allow children to play in or near flood waters.
- Stay away from sewerage line, gutters, drains, culverts etc.
- Be careful of snakes; snakebites are common during floods.
- Stay away from electric poles and fallen power-lines to avoid electrocution.
- Don't use wet electrical appliances, get them checked before use.
- Eat freshly cooked and dry food. Always keep your food covered.
- Use boiled and filtered drinking water.
- Keep all drains, gutters near your house clean.
- Stagnation of water can breed vector/water-borne diseases. In case of sickness, seek medical assistance.
- Use bleaching powder and lime to disinfect the surroundings.

Read the given source carefully and answer the questions that follow :

18.1 Suggest one precaution before using water after floods. [1]

18.2 Mention any two measures related to protection of food items during floods. [1]

18.3 Suggest two actions to be taken before leaving the house during a flood warning. [2]

Previously asked in: 2026 32/1/1 Q18

♦ **Water Resources**

Floods - disaster management and safety precautions

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<https://cbsegrade10studyguide.com>

<https://github.com/orgs/cbse-free-resources/repositories>

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CBSE CLASS X

Social Science (087)

ANSWER KEY

From previous CBSE Board Exam questions

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Q1. § Introduction

[5]

How can the industrial pollution of fresh water be reduced ? Explain with examples.

Previously asked in: 2023 32/6/1 Q31(a)

♦ Water Resources

Industrial Pollution of Fresh Water and Its Reduction

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Model Answer

Industrial pollution of freshwater can be reduced through the following measures:

1. **Treating hot water and effluents** before releasing them into rivers and lakes, so that heat and chemicals do not damage aquatic ecosystems.
1. **Setting up effluent treatment plants (ETPs)** in industries to treat toxic and chemical waste before it is discharged into water bodies.
1. **Recycling and reusing water** within industrial processes to minimise the volume of wastewater generated and discharged.
1. **Strict enforcement of environmental laws** — industries must follow pollution control norms set by authorities such as the Central Pollution Control Board.
1. **Reducing the use of harmful chemicals** in industrial processes and substituting them with eco-friendly alternatives wherever possible.
1. **Public awareness and community monitoring** of nearby water bodies to ensure industries comply with pollution norms.

For example, industries in river basins like the Ganga and Yamuna have been directed to install ETPs to check water pollution and protect freshwater quality.

Source: Water Resources, Chapter 3

Explanation

The textbook mentions that industries pollute freshwater through waste and chemicals, making it hazardous for use. The chapter does not detail specific industrial pollution control steps, so examiners expect general yet relevant scientific measures (ETPs, recycling, law enforcement). Always give at least one example (a river basin/industry) to complete a 5-mark answer. Avoid padding — 5 crisp points + a brief example is ideal for 5 marks.

Q2. § Introduction § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP [5]
IRRIGATION SYSTEM

Describe any five steps taken to save fresh water from industrial pollution.

Previously asked in: 2024 32/4/1 Q31(b)

♦ Water Resources Industrial Pollution and Freshwater Conservation

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Model Answer

The following steps can be taken to save fresh water from industrial pollution:

1. **Treatment of industrial effluents:** Industries should treat their waste water in effluent treatment plants before discharging it into rivers or lakes.
1. **Strict laws and regulations:** The government should enforce strict pollution control laws and penalise industries that dump untreated waste into water bodies.
1. **Recycling of water:** Industries should reuse and recycle water within their units to minimise the discharge of polluted water.
1. **Use of eco-friendly technology:** Industries should adopt cleaner production technologies that generate less waste and consume less water.
1. **Regular monitoring:** Pollution control boards should regularly monitor the quality of water near industrial areas to detect and prevent pollution immediately.

Source: *Water Resources, Chapter 3, CBSE Class 10 Geography*

Explanation

The textbook mentions that industries pollute freshwater through wastes and chemicals, making water hazardous for use. The question is application-based — examiners expect **five distinct, clearly labelled points** with brief explanations. Each point should be a separate measure (not repeated ideas). Avoid vague answers like "save water"; focus specifically on **pollution prevention**. No diagrams are needed. One line per point is sufficient for full marks.

Q3. § Introduction § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT

[3]

Explain any three factors responsible for water pollution.

Previously asked in: 2025 32/6/1 Q28(a)

♦ Water Resources

Factors Responsible for Water Pollution

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Model Answer

Three factors responsible for water pollution are:

1. **Domestic Waste:** Large urban populations generate huge amounts of sewage and domestic waste that are discharged into rivers and water bodies, making water hazardous for use.
1. **Industrial Waste:** The ever-increasing number of industries releases chemicals and effluents into freshwater sources, severely polluting them.
1. **Agricultural Chemicals:** Excessive use of pesticides and fertilisers in agriculture seeps into groundwater and surface water, contaminating them and making water unsafe for human consumption.

Source: *Water Scarcity and the Need for Water Conservation and Management, Chapter 3*

Explanation

The textbook explicitly lists **domestic wastes, industrial wastes, chemicals, pesticides and fertilisers** as causes of water pollution. Examiners expect students to name each factor clearly and add a brief explanation (one line each). Avoid vague answers — always link the factor to how it pollutes water. Three factors = 1 mark each.

Q4. § Introduction § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT**[3]**

How have industrialisation and urbanisation impacted water supply? Explain.

Previously asked in: 2025 32/3/1 Q26

♦ **Water Resources** Impact of Industrialisation and Urbanisation on Water Supply

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Model Answer

Post-independence industrialisation and urbanisation have severely stressed freshwater resources in the following ways:

1. **Industries as heavy water users:** The ever-increasing number of industries exerts heavy pressure on existing freshwater resources.
1. **Demand for hydroelectric power:** Industries require large amounts of energy, much of which comes from hydroelectric power, further stressing water resources.
1. **Urban population pressure:** Multiplying urban centres with large, dense populations and high-consumption lifestyles have greatly increased water and energy requirements.
1. **Groundwater depletion:** Most urban housing societies use their own groundwater pumping devices, leading to over-exploitation and depletion of fragile groundwater resources in cities.

Thus, industrialisation and urbanisation have together aggravated water scarcity through overuse and depletion.

Source: *Water Resources, Chapter 3 — Water Scarcity and the Need for Water Conservation and Management*

Explanation

- The examiner expects **four clear impact points** for 3 marks — one point per mark, with a brief concluding line.
- Use textbook language closely: phrases like "*exerting pressure on existing freshwater resources*" and "*fragile water resources are being overexploited*" show you have read the chapter.
- Do **not** write about agriculture or rainfall variation here — the question is specifically about industrialisation and urbanisation.
- Keep each point crisp; no need for lengthy elaboration.

Q5. § Introduction § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT**[5]**

Recent evidence suggests that overuse of groundwater is threatening sustainable development. Analyse the statement in the context of sustainability of development.

Previously asked in: 2025 32/1/1 Q33(a)

♦ **Water Resources**

Overuse and depletion of groundwater

Sustainability of water resources and sustainable development

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Model Answer**Overuse of Groundwater and Sustainability of Development:**

1. **Falling groundwater levels:** Farmers use tube-wells and borewells extensively for irrigation. Urban housing societies also pump groundwater to meet daily needs, leading to rapid depletion of groundwater levels.
1. **Threat to food security:** Irrigated agriculture is the largest consumer of water. Over-exploitation of groundwater to expand dry-season agriculture threatens long-term food production and security.
1. **Growing population pressure:** Large and growing populations demand more water for domestic use and food production, accelerating over-exploitation of this resource.
1. **Industrial and urban pressure:** Rapid industrialisation and urbanisation have increased pressure on freshwater resources, further depleting groundwater reserves.
1. **Ecological crisis:** Overexploitation and mismanagement of water resources will impoverish this resource and cause ecological crisis, having a profound impact on lives and livelihoods.
1. **Water pollution:** Pollution from industrial waste, pesticides, and fertilisers reduces usable water, compounding scarcity.

Thus, sustainable development demands responsible use of groundwater, as its depletion endangers future generations' needs.

Source: *Water Resources, Chapter 3 — Water Scarcity and the Need for Water Conservation and Management*

Explanation

- The examiner expects you to **link groundwater overuse to multiple dimensions of sustainability** — food security, ecology, population, industry.
- Key phrase from the textbook: "*Over exploitation and mismanagement of water resources will impoverish this resource and cause ecological crisis.*" — quote or paraphrase this directly.
- 5 marks = ~5 distinct, developed points. Avoid vague statements; each point should name the cause AND its consequence.
- End with a concluding line connecting back to the concept of **sustainable development** (meeting present needs without compromising future generations).

Q6. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION [1]
SYSTEM

Match the Column – A with Column – B and choose the correct option :

Column – A (River): I. Mahanadi II. Narmada III. Chambal IV. Chenab

Column – B (Dam): 1. Sardar Sarovar 2. Hirakud 3. Salal 4. Rana Pratap Sagar

(A) I-4, II-3, III-2, IV-1

(B) I-3, II-4, III-1, IV-2

(C) I-2, II-1, III-4, IV-3

(D) I-1, II-2, III-3, IV-4

Previously asked in: 2023 32/6/1 Q6

♦ Water Resources

Major Dams and Associated Rivers in India

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Model Answer

(C) I-2, II-1, III-4, IV-3

Mahanadi → Hirakud Dam; Narmada → Sardar Sarovar Dam; Chambal → Rana Pratap Sagar Dam; Chenab → Salal Dam.

Source: Water Resources, Chapter 3

Explanation

The textbook explicitly mentions **Hirakud Dam on Mahanadi** and **Sardar Sarovar Dam on Narmada**. Rana Pratap Sagar is a well-known dam on the Chambal River (Rajasthan), and Salal Dam is built on the Chenab River (J&K). Remember these river-dam pairs as they are frequently asked in board exams.

Q7. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT [1]

In which of the following States Tungabhadra Dam is located ?

A Tamil Nadu

B Kerala

C Andhra Pradesh

D Karnataka

Previously asked in: 2023 32/1/1 Q6

♦ Water Resources

Major Dams and Multipurpose River Projects in India

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Model Answer

The correct answer is **D) Karnataka**.

The Tungabhadra Dam is located in the state of **Karnataka**.

Explanation

This is a direct factual question. The Tungabhadra Dam is built on the Tungabhadra River in Karnataka. Note that while the source passage does not explicitly name this dam, it is a standard CBSE Class 10 Geography fact. For MCQs, just circle/write the correct option — no explanation needed in the exam.

Q8. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Match Column-I with Column-II and choose the correct option :

Column-I (Dam): a. Sardar Sarovar b. Salal c. Gandhi Sagar d. Hirakud

Column-II (River): i. Mahanadi ii. Chambal iii. Narmada iv. Chenab

(A) a-ii b-i c-iv d-iii

(B) a-iii b-iv c-i d-ii

(C) a-iii b-iv c-ii d-i

(D) a-i b-iii c-iv d-ii

Previously asked in: 2025 32/5/1 Q8

♦ Water Resources

Major Dams and their Associated Rivers in India

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Model Answer

The correct answer is **(C) a-iii, b-iv, c-ii, d-i**

Sardar Sarovar – Narmada; Salal – Chenab; Gandhi Sagar – Chambal; Hirakud – Mahanadi.

Explanation

The passage explicitly states Sardar Sarovar is on the **Narmada** and Hirakud is in the **Mahanadi basin**. Salal Dam is on the **Chenab** (Jammu & Kashmir) and Gandhi Sagar is on the **Chambal** — standard NCERT facts from Chapter 3. Students should memorise dam–river pairs as they appear frequently in MCQs and map-based questions.

Q9. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Choose the correct option to fill the blank. An artificial lake built in the 11th century for water conservation is _____.

(A) Sambhar Lake

(B) Wular Lake

(C) Bhopal Lake

(D) Chilka Lake

Previously asked in: 2025 32/5/1 Q7

♦ Water Resources

Traditional water conservation structures – artificial lakes

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Model Answer**(C) Bhopal Lake**

Bhopal Lake, one of the largest artificial lakes of its time, was built in the **11th century** for water conservation.

Explanation

The source passage (Hydraulic Structures in Ancient India box) directly states: *"In the 11th Century, Bhopal Lake, one of the largest artificial lakes of its time was built."* Sambhar and Chilka are natural lakes; Wular is also a natural lake. Bhopal Lake is the only artificial one mentioned, built in the 11th century.

Q10. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Arrange the location of the following dams of India from North to South and choose the correct option :

I. Pravara; II. Salal; III. Koyna; IV. Gandhi Sagar

- (A) II, IV, III, I
- (B) II, IV, I, III
- (C) III, II, IV, I
- (D) III, IV, II, I

Previously asked in: 2026 32/3/1 Q13

♦ Water Resources

Major Dams and Reservoirs of India - Location and Distribution

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Model Answer**(B) II, IV, I, III**

Salal (J&K) → Gandhi Sagar (M.P.) → Pravara (Maharashtra) → Koyna (Maharashtra, further south).

Explanation

Students must know the approximate latitudinal positions of major dams:

- **Salal** — Chenab River, Jammu & Kashmir (northernmost)
- **Gandhi Sagar** — Chambal River, Madhya Pradesh
- **Pravara** — Pravara River, northern Maharashtra
- **Koyna** — Koyna River, southern Maharashtra (southernmost among these four)

The textbook map "India: Major Rivers and Dams" (Ch. 3) shows these locations. Eliminate wrong options by anchoring on the northernmost (Salal) and southernmost (Koyna) dams first.

Q11. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Match Column I with Column II and choose the correct option.

Column I (Dams): i. Sardar Sarovar, ii. Hirakud, iii. Bhakra Nangal, iv. Nagarjuna Sagar

Column II (Rivers): a. Sutlej, b. Krishna, c. Narmada, d. Mahanadi

- (A) i-a, ii-b, iii-c, iv-d
- (B) i-b, ii-a, iii-d, iv-c
- (C) i-c, ii-d, iii-b, iv-a
- (D) i-c, ii-d, iii-a, iv-b

Previously asked in: 2024 32/4/1 Q6

♦ Water Resources

Major Dams and their Rivers in India

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Model Answer

The correct option is **(D) i-c, ii-d, iii-a, iv-b**

Sardar Sarovar – Narmada; Hirakud – Mahanadi; Bhakra Nangal – Sutlej; Nagarjuna Sagar – Krishna.

Explanation

The textbook explicitly states: Sardar Sarovar Dam is built on the **Narmada** River; Hirakud project is in the **Mahanadi** basin; Bhakra–Nangal project is in the **Sutlej**-Beas river basin. Nagarjuna Sagar is a well-known dam on the **Krishna** River (standard NCERT fact). Students must memorise dam–river pairings as they are frequently asked in MCQs and match-the-column questions.

Q12. § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT § MULTI-PURPOSE RIVER PROJECTS [5]
AND INTEGRATED WATER RESOURCES MANAGEMENT

How has the overuse of underground water created a serious crisis in many parts of India ? Explain with examples in the context of sustainable development. (2+3=5)

Previously asked in: 2025 32/2/1 Q33(b)

♦ **Water Resources**

Groundwater Crisis and Sustainable Development

Need for Water Conservation and Management

Overuse and depletion of groundwater

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Model Answer

Overuse of Underground Water and Water Crisis:

Overexploitation of groundwater has created a serious crisis across India due to the following reasons:

1. **Agriculture demand:** Irrigated agriculture is the largest consumer of water. Farmers use own tube-wells and bore-wells to expand irrigation, leading to rapidly **falling groundwater levels**, threatening food security.
1. **Urbanisation:** Housing colonies and societies in cities use private groundwater pumping devices excessively, causing **depletion of fragile water resources** in urban areas.
1. **Industrialisation:** Ever-increasing industries exert heavy pressure on freshwater and groundwater sources.

Examples in context of Sustainable Development:

- In cities, overuse has led to groundwater depletion, making water unavailable for future generations — violating the principle of sustainable development.
- **Atal Bhujal Yojana** addresses this by promoting conservation in 8,220 water-stressed Gram Panchayats across 7 states (Gujarat, Rajasthan, Haryana, etc.), shifting communities from consumption to **smart water management**.
- Sustainable solutions like **rooftop rainwater harvesting** (e.g., Gendathur, Karnataka; Shillong, Meghalaya) and **Pradhan Mantri Krishi Sinchayee Yojana** (per drop more crop) reduce dependence on groundwater.

Source: Chapter 3 — Water Scarcity and the Need for Water Conservation and Management

Explanation

- The question is split 2+3: 2 marks for explaining the crisis, 3 marks for sustainable development examples/solutions.
- Examiners expect you to mention **falling groundwater levels, agriculture/urbanisation/industry** as causes, and then link to government schemes or traditional methods as sustainable alternatives.
- Always name specific examples (Atal Bhujal Yojana, PMKSY, Gendathur) — these fetch marks in the 3-mark part.
- Avoid vague statements; be specific about consequences (food security, depletion, health hazards).

Q13. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Choose the correct option of the states that have been majorly benefitted by the Sardar Sarovar Dam.

- A Rajasthan, Gujarat, Punjab and Haryana
- B Maharashtra, Madhya Pradesh, Gujarat and Rajasthan
- C Maharashtra, Madhya Pradesh, Telangana and Andhra Pradesh
- D Madhya Pradesh, Rajasthan, Karnataka and Chhattisgarh

Previously asked in: 2025 32/2/1 Q8

♦ Water Resources

Sardar Sarovar Dam and beneficiary states

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Model Answer**Option B — Maharashtra, Madhya Pradesh, Gujarat and Rajasthan**

The Sardar Sarovar Dam is built over the Narmada River in Gujarat and covers four states: Maharashtra, Madhya Pradesh, Gujarat and Rajasthan.

Source: *Water Resources, Chapter 3 (Sardar Sarovar Dam box)*

Explanation

The textbook explicitly names the four states benefitted by the Sardar Sarovar Project in the highlighted box. Students must remember this specific combination — Punjab and Haryana (Option A) are linked to the Bhakra-Nangal project, not Sardar Sarovar. Eliminate options with Telangana, Andhra Pradesh, Karnataka, or Chhattisgarh, as these are not mentioned in connection with this dam.

Q14. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT

§ BAMBOO DRIP IRRIGATION

[1]

SYSTEM

Match Column I with Column II and choose the correct option :

Column I (River): a. Chambal, b. Ganga, c. Chenab, d. Satluj

Column II (Dam): i. Salal, ii. Bhakra Nangal, iii. Gandhi Sagar, iv. Tehri

- A a-ii, b-iii, c-i, d-iv
- B a-ii, b-iii, c-iv, d-i
- C a-iii, b-iv, c-i, d-ii
- D a-iii, b-iv, c-ii, d-i

Previously asked in: 2025 32/2/1 Q7

♦ Water Resources

Dams and Rivers – Match the Following (Salal, Bhakra Nangal, Gandhi Sagar, Tehri)

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Model Answer

The correct answer is **C: a-iii, b-iv, c-i, d-ii**

Chambal – Gandhi Sagar; Ganga – Tehri; Chenab – Salal; Satluj – Bhakra Nangal.

Explanation

Students must memorise river-dam pairs. Key ones: **Bhakra Nangal** is on the **Satluj** (also called Sutluj), **Gandhi Sagar** is on the **Chambal**, **Salal** is on the **Chenab**, and **Tehri** is on the **Ganga** (Bhagirathi tributary). The textbook specifically mentions the Bhakra-Nangal project in the Sutluj-Beas river basin. The others are standard NCERT Class 10 Geography facts from Chapter 3.

Q15. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[1]**

Match Column I with Column II and choose the correct option :

Column I (Dam) — Column II (River)

- a. Hirakud — i. Chambal
- b. Gandhi Sagar — ii. Krishna
- c. Nagarjuna Sagar — iii. Kaveri
- d. Mettur — iv. Mahanadi

- (A) a-iv, b-i, c-iii, d-ii
- (B) a-i, b-ii, c-iv, d-iii
- (C) a-iv, b-i, c-ii, d-iii
- (D) a-i, b-ii, c-iii, d-iv

Previously asked in: 2025 32/1/1 Q7

♦ Water Resources

Dams and their associated rivers in India

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Model Answer

The correct option is **(C) a-iv, b-i, c-ii, d-iii**

- Hirakud Dam — Mahanadi (iv)
- Gandhi Sagar Dam — Chambal (i)
- Nagarjuna Sagar Dam — Krishna (ii)
- Mettur Dam — Kaveri (iii)

Source: Water Resources, Chapter 3

Explanation

The textbook mentions Hirakud on the Mahanadi river explicitly. The other matches — Gandhi Sagar on Chambal, Nagarjuna Sagar on Krishna, and Mettur on Kaveri — are standard factual associations from the chapter's map and content. Examiners expect you to have memorised major dam–river pairs. Option (C) is the only one with all four correctly matched.

Q16. § WATER SCARCITY AND THE NEED FOR WATER CONSERVATION AND MANAGEMENT § MULTI-PURPOSE RIVER PROJECTS [4]
AND INTEGRATED WATER RESOURCES MANAGEMENT § RAINWATER HARVESTING

Pradhan Mantri Krishi Sinchayee Yojana

Floods have not only devastated life and property but also caused extensive soil erosion. Sedimentation also meant that the flood plains were deprived of silt, a natural fertilizer, further adding on to the problem of land degradation. It was also observed that the multipurpose projects induced earthquakes, caused water-borne diseases and pests and pollution resulting from excessive use of water.

Irrigation has also changed the cropping pattern of many regions with farmers shifting to water intensive and commercial crops. This has great ecological consequences like salinisation of the soil.

Pradhan Mantri Krishi Sinchayee Yojana has been started which ensures access to some means to protective irrigation for all agricultural farms in the country, thus bringing much desired rural prosperity. Some of the broad objectives of this programme are to enhance the physical access of water on the farm and expand cultivable area under assured irrigation (*har khet ko pani*), improve on farm water, use efficiency to reduce wastage and increase availability both in duration and extent, irrigation and other water saving technologies (*per drop more crop*) and introduce sustainable water conservation practices, etc.

Read the given source carefully and answer the questions that follow :

18.1 Explain the role of floods in land degradation. [1]

18.2 How has irrigation changed cropping pattern ? [1]

18.3 Explain any two objectives of the 'Pradhan Mantri Krishi Sinchayee Yojana'. [2]

Previously asked in: 2026 32/5/1 Q18

♦ **Water Resources**

Impact of irrigation on cropping patterns

Pradhan Mantri Krishi Sinchayee Yojana – objectives and significance

Role of floods in land degradation and soil erosion

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Model Answer

18.1 Floods cause extensive soil erosion and lead to sedimentation. This deprives flood plains of silt — a natural fertilizer — thus contributing to land degradation.

18.2 Irrigation has shifted farmers towards water-intensive and commercial crops. This has led to ecological consequences like **salinisation of the soil**, degrading agricultural land.

18.3 Two objectives of PM Krishi Sinchayee Yojana:

- **Har Khet Ko Pani:** To enhance physical access of water on the farm and expand cultivable area under assured irrigation.
- **Per Drop More Crop:** To improve on-farm water use efficiency, reduce wastage, and promote water-saving irrigation technologies and sustainable water conservation practices.

Source: *Water Resources, Pradhan Mantri Krishi Sinchayee Yojana (extract)*

Explanation

- **18.1** focuses on the two-step process: soil erosion + loss of silt = land degradation. Both points needed for full credit.
- **18.2** The key terms examiners look for are "water-intensive/commercial crops" and "salinisation."
- **18.3** Use the scheme's own slogans (*har khet ko pani, per drop more crop*) — examiners reward these as they are from the prescribed text. Each objective should be explained briefly, not just named.

Q17. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT

[4]

Sardar Sarovar Project

Sardar Sarovar Dam has been built over the Narmada river in Gujarat. This is one of the largest water resources projects of India covering four states – Maharashtra, Madhya Pradesh, Gujarat and Rajasthan. The Sardar Sarovar Project would meet the requirement of water in drought prone and desert areas. Sardar Sarovar Project will provide irrigation facilities to 18.45 lakh hectare of land, covering 3112 villages in 15 districts of Gujarat. It will also irrigate 2,46,000 hectare of land in the strategic desert districts of Barmer and Jalore in Rajasthan and 37,500 hectare in the tribal hilly tract of Maharashtra through lift. About 75% of the command area in Gujarat is drought prone while entire command in Rajasthan is drought prone. Assured water supply will soon make this area drought proof.

Read the given source and answer the questions that follow :

18.1 Why is Sardar Sarovar Project considered important for Gujarat ? [1]

18.2 Why is Sardar Sarovar Project designed to cover four states ? [1]

18.3 In what ways does this project promote sustainability ? [2]

Previously asked in: 2026 32/4/1 Q18

♦ Water Resources

Multipurpose River Projects (Sardar Sarovar Dam on Narmada)

Sustainable use of water resources

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Model Answer

18.1 Sardar Sarovar Project is important for Gujarat because it provides irrigation to 18.45 lakh hectares covering 3112 villages in 15 districts, and about 75% of its command area is drought prone, so the project will make it drought proof.

18.2 The project covers four states — Maharashtra, Madhya Pradesh, Gujarat and Rajasthan — because the Narmada river flows through all these states and its water resources need to be shared equitably to meet the water requirements of their drought prone and desert areas.

18.3 The project promotes sustainability by:

- Providing assured water supply to drought prone areas, making them drought proof in the long run.
- Irrigating tribal hilly tracts of Maharashtra and desert districts of Rajasthan, ensuring long-term agricultural stability.
- Covering a large multi-state region, promoting balanced and sustainable water resource management across 18.45 lakh hectares of land.

Source: *Sardar Sarovar Project (Water Resources, Chapter 3)*

Explanation

- **18.1:** Pick the specific Gujarat-related statistics from the passage (18.45 lakh ha, 3112 villages, drought prone area) — examiners want data, not vague statements.
- **18.2:** The passage says it covers four states; reason out the inter-state water sharing angle from the passage context (drought prone/desert areas across states).
- **18.3 (2 marks):** Give **two distinct points** scaled to 1 mark each — drought proofing and long-term agricultural/water sustainability. Avoid going beyond the passage; examiners expect source-based answers.

Q18. § RAINWATER HARVESTING

[4]

In ancient India, along with the sophisticated hydraulic structures, there existed an extraordinary tradition of water-harvesting system. People had an in-depth knowledge of rainfall regimes and soil types and developed wide ranging techniques to harvest groundwater, rainwater, river water and flood water in keeping with the local ecological conditions and their water needs. In hilly and mountainous regions, people built diversion channels like the kuls and guls of Western Himalayas for agriculture. Rooftop rainwater harvesting was very commonly practised to store drinking water, particularly in Rajasthan.

Read the given extract and answer the questions that follow :

(35.1) Mention any two methods of traditional water-harvesting used in India. [1]

(35.2) How do people of Rajasthan utilise rainwater ? [1]

(35.3) Explain any two benefits of rainwater harvesting. [2]

Previously asked in: 2023 32/5/1 Q35

♦ Water Resources

Benefits of Rainwater Harvesting

Rainwater Harvesting in Rajasthan (Khadins and Rooftop Harvesting)

Traditional Water-Harvesting Systems in India

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Model Answer

(35.1) Two methods of traditional water-harvesting used in India:

1. Building diversion channels like **kuls and guls** in hilly/mountainous regions.
2. **Rooftop rainwater harvesting** to store drinking water.

(35.2) In Rajasthan, people practised **rooftop rainwater harvesting** very commonly to store **drinking water**.

(35.3) Two benefits of rainwater harvesting:

1. **Conserves water** — harvested rainwater can be stored and used during dry periods, reducing dependence on groundwater.
2. **Recharges groundwater** — water collected seeps into the ground, raising the water table and ensuring water availability for future use.

Source: Chapter 3 – Water Resources, Contemporary India II

Explanation

- **(35.1) and (35.2)** must be answered **directly from the passage** — do not go beyond it.
- **(35.3)** is a 2-mark question requiring **two distinct points**; examiners expect one clear benefit per point. Benefits like reducing water scarcity, recharging groundwater, or reducing runoff are all accepted.
- Avoid writing long paragraphs; crisp, labelled answers score better in board exams.

Q19. § RAINWATER HARVESTING

[4]

RAINWATER HARVESTING

Many thought that given the disadvantages and rising resistance against the multi purpose projects, water harvesting system was a viable alternative, both socio-economically and environmentally. In ancient India, along with the sophisticated hydraulic structures, there existed an extraordinary tradition of water harvesting system. People had in-depth knowledge of rainfall regimes and soil types and developed wide ranging techniques to harvest rainwater, groundwater, river water and flood water in keeping with the local ecological conditions and their water needs. In hill and mountainous regions, people built diversion channels like the 'guls' or 'kuls' of the Western Himalayas for agriculture. 'Rooftop rainwater harvesting' was commonly practised to store drinking water, particularly in Rajasthan. In the flood plains of Bengal, people developed inundation channels to irrigate their fields. In arid and semi-arid regions, agricultural fields were converted into rain fed storage structures that allowed the water to stand and moisten the soil like the 'khadins' in Jaisalmer and 'Johads' in other parts of Rajasthan.

Read the given source and answer the questions that follow :

- (I) Why is water harvesting system a viable alternative ? [1]
- (II) Describe the process of 'rooftop rainwater harvesting.' [1]
- (III) Mention any two methods adopted by ancient India for water conservation. [2]

Previously asked in: 2023 32/4/1 Q35

♦ Water Resources

Ancient Water Conservation Methods in India

Rainwater Harvesting as a Viable Alternative

Rooftop Rainwater Harvesting

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Model Answer

- (I) Water harvesting system is a viable alternative because it is beneficial both **socio-economically and environmentally**, overcoming the disadvantages and rising resistance associated with multipurpose projects.
- (II) In rooftop rainwater harvesting, rainwater falling on rooftops is collected and stored for use as **drinking water**. It was commonly practised particularly in **Rajasthan**.
- (III) Two methods adopted by ancient India for water conservation:
 - **Guls/Kuls** — diversion channels built in hill and mountainous regions of the Western Himalayas for agriculture.
 - **Khadins and Johads** — agricultural fields in arid/semi-arid regions were converted into rain-fed storage structures to allow water to stand and moisten the soil.

Source: *Water Resources, Rainwater Harvesting section*

Explanation

- (I) is a direct 1-mark lift from the passage — just pick the exact reason given.
- (II) The passage does not detail the mechanical process; answer only what is stated — collecting rainwater on rooftops for drinking water storage, especially in Rajasthan.
- (III) For 2 marks, name **two distinct methods** with a brief description each. Guls/Kuls and Khadins/Johads are the clearest examples from the passage. Inundation channels of Bengal is also acceptable as an alternative point.

Q20. § RAINWATER HARVESTING § BAMBOO DRIP IRRIGATION SYSTEM**[1]**

Which one of the following is the irrigation system in Meghalaya ?

- (A) To irrigate land only during rainy season.
- (B) To use large volumes of water for irrigation.
- (C) To remove water from soil.
- (D) To use bamboo drip irrigation system.

Previously asked in: 2024 32/3/1 Q8

♦ Water Resources Traditional Rainwater Harvesting and Irrigation Systems

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Model Answer

(D) To use bamboo drip irrigation system.

Explanation

The passage clearly states that Meghalaya has a 200-year-old tradition of using bamboo pipes to tap stream and spring water for irrigation — this is the **bamboo drip irrigation system**. Eliminate other options as they describe general irrigation practices, not specific to Meghalaya. In MCQs, always look for the most specific and textbook-supported option.

Q21. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION SYSTEM **[1]**

In which Indian state is 'Bamboo drip irrigation' system used ?

- A Himachal Pradesh
- B Kerala
- C Rajasthan
- D Meghalaya

Previously asked in: 2026 32/2/1 Q11

♦ Water Resources Bamboo Drip Irrigation System in Meghalaya

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Model Answer

D — Meghalaya

Explanation

The passage explicitly states: "In Meghalaya, a 200-year-old system of tapping stream and spring water by using bamboo pipes, is prevalent." This is a direct fact-based MCQ — just identify the correct state from the passage.

Q22. § BAMBOO DRIP IRRIGATION SYSTEM**[1]**

In which one of the following states is 'bamboo drip irrigation system' prevalent ?

- (A) Tamil Nadu
- (B) West Bengal
- (C) Meghalaya
- (D) Odisha

Previously asked in: 2024 32/5/1 Q6

♦ Water Resources

Bamboo Drip Irrigation System

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Model Answer

(C) Meghalaya

Explanation

The passage explicitly states: "In Meghalaya, a 200-year-old system of tapping stream and spring water by using bamboo pipes, is prevalent." This is a direct fact — memorise the state name and the key detail (200-year-old system). Source: Bamboo Drip Irrigation System, Chapter 3.

Q23. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § RAINWATER HARVESTING **[4]****FLOODS**

Basic safety Precautions To Be Taken :

- Listen to radio/TV for the latest weather bulletins and flood warnings. Pass on the information to others.
- Make a family emergency kit which should include; a portable radio/transistor, torch, spare batteries, a first aid box along with essential medicines, ORS, dry food items, drinking water, matchboxes, candles and other essential items.
- Keep hurricane lamp, ropes, rubber tubes, umbrella and bamboo stick in your house. These could be useful.
- Keep your cash, jewellery, valuables, important documents etc. in a safe place.
- If there is a flood, move along with your family members and cattle to safe areas like relief camps, evacuation centers, elevated grounds where you can take shelter.
- Turn off power and gas connections before leaving your house.

During floods :

- Don't enter into flood waters; it could be dangerous.
- Don't allow children to play in or near flood waters.
- Stay away from sewerage line, gutters, drains, culverts etc.
- Be careful of snakes; snakebites are common during floods.
- Stay away from electric poles and fallen power-lines to avoid electrocution.
- Don't use wet electrical appliances-get them checked before use.
- Eat freshly cooked and dry food. Always keep your food covered.
- Use boiled and filtered drinking water.
- Keep all drains, gutters near your house clean.
- Stagnation of water can breed vector/water-borne diseases. In case of sickness, seek medical assistance.
- Use bleaching powder and lime to disinfect the surroundings.

Read the following source carefully and answer the questions that follow :

35.1 Mention any two essential items that should be included in a 'family emergency kit'. [1]

35.2 Why are the items of family emergency kit important during flood situation ? [1]

35.3 In case of a flood, what are the recommended actions to ensure the safety of your family and belongings ? Describe any two. [2]

Previously asked in: 2024 32/1/1 Q35

♦ Water Resources

Reading a factual/informational passage and answering questions (source-based comprehension)

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Model Answer

35.1 Two essential items in a family emergency kit are:

- Torch with spare batteries
- First aid box with essential medicines

35.2 These items are important because during a flood, normal facilities like electricity, medical services, and clean water may not be available. The kit ensures basic survival needs — light, communication, food, and medical care — are met until help arrives.

35.3 Two recommended actions during a flood:

1. **Ensure family safety:** Move along with family members and cattle to safe areas such as relief camps, evacuation centres, or elevated grounds.

2. Protect belongings and prevent accidents: Keep cash, jewellery, important documents in a safe place and turn off power and gas connections before leaving the house.

Source: *Floods — Basic Safety Precautions To Be Taken*

Explanation

- **35.1** is 1 mark — just name two items directly from the list; no explanation needed.
- **35.2** is 1 mark — give a concise reason (1–2 lines). The key idea is unavailability of normal services during floods.
- **35.3** is 2 marks — describe **two** actions clearly; each action must be distinct and taken directly from the passage. Name the action + briefly explain it for full credit.
- Always use exact words/phrases from the passage in source-based questions — examiners match them.

Q24. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § BAMBOO DRIP IRRIGATION [1]
SYSTEM

Choose the correctly matched pair :

I (Multi-purpose River Project) — II (River)

- A Gandhi Sagar — Chambal
- B Hirakud — Godavari
- C Nagarjuna Sagar — Kaveri
- D Salal — Beas

Previously asked in: 2025 32/6/1 Q20

♦ **Water Resources** Multi-purpose River Projects and Associated Rivers

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Model Answer

The correctly matched pair is:

A — Gandhi Sagar — Chambal

Gandhi Sagar Dam is built on the Chambal River in Madhya Pradesh. (Hirakud is on Mahanadi; Nagarjuna Sagar is on Krishna; Salal is on Chenab.)

Source: Water Resources, Chapter 3

Explanation

The textbook mentions Hirakud on the Mahanadi basin, which rules out option B. Nagarjuna Sagar is on the Krishna River (not Kaveri), ruling out C. Salal Project is on the Chenab River (not Beas), ruling out D. Gandhi Sagar on Chambal is the only correct match. Examiners expect you to know the correct river-dam pairing for all major multipurpose projects.

Q25. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT**[4]**

Most of the objections to the projects arose due to their failure to achieve the purposes for which they were built. Ironically, the dams that were constructed to control the floods have triggered floods due to sedimentation in the reservoir. Moreover, the big dams have mostly been unsuccessful in controlling floods at the time of excessive rainfall. You may have seen or read how the release of water from the dams during heavy rains aggravated the flood situation in Maharashtra and Gujarat in 2006. The floods have not only devastated life and property but also caused extensive soil erosion. Sedimentation also meant that the flood plains were deprived of silt, a natural fertiliser, further adding on to the problem of land degradation. It was also observed that the multi-purpose projects induced earthquakes, caused water-borne diseases and pests and pollution resulting from excessive use of water.

Read the given source and answer the questions that follow :

(35.1) Name the movement against the river project in Gujarat. [1]

(35.2) How have the big dams mostly been unsuccessful in controlling floods at the time of excessive rainfall ? [1]

(35.3) Analyse any two merits of multi-purpose river projects. [2]

Previously asked in: 2023 32/2/1 Q35

♦ Water Resources

Merits of Multi-purpose River Projects

Multi-purpose River Projects – Objections and Controversies

Narmada Bachao Andolan

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Model Answer

(35.1) The movement against the Sardar Sarovar Dam project on the Narmada River in Gujarat is known as the **Narmada Bachao Andolan**.

(35.2) Big dams have been mostly unsuccessful because during excessive rainfall, water has to be released from the reservoirs to prevent overflow. This release itself aggravates the flood situation in downstream areas, as seen in Maharashtra and Gujarat in 2006.

(35.3) Two merits of multi-purpose river projects:

- They help in **irrigation**, ensuring water supply to agricultural fields throughout the year, increasing crop production.
- They generate **hydroelectric power**, providing cheap and renewable electricity for industrial and domestic use, contributing to economic development.

Source: Chapter 3 – Water Resources, NCERT Geography Class 10

Explanation

- **(35.1)** is a direct recall question — Narmada Bachao Andolan is the expected answer. The passage mentions Gujarat/Narmada context.
- **(35.2)** must be answered using the passage itself — the key phrase is "release of water from dams during heavy rains aggravated the flood situation."
- **(35.3)** asks for **merits**, which are NOT in the passage (the passage only lists demerits). This tests broader textbook knowledge — irrigation and hydroelectric power generation are the two most standard merits examiners expect. Write one clear point per merit.

Q26. § MULTI-PURPOSE RIVER PROJECTS AND INTEGRATED WATER RESOURCES MANAGEMENT § RAINWATER HARVESTING **[4]****FLOODS**

Basic safety precautions to be taken :

- Listen to radio/TV for the latest weather bulletins and flood warnings. Pass on the information to others.
- Make a family emergency kit which should include, a portable radio/transistor, torch, spare batteries, a first aid box along with essential medicines, ORS, dry food items, drinking water, matchboxes, candles and other essential items.
- Keep hurricane lamp, ropes, rubber tubes, umbrella and bamboo stick in your house. These could be useful.
- Keep your cash, jewellery, valuables, important documents etc. in a safe place.
- If there is a flood, move along with your family members and cattle to safe areas like relief camps, evacuation centers, elevated grounds where you can take shelter.
- Turn off power and gas connections before leaving your house.

During Floods

- Don't enter into flood waters; it could be dangerous.
- Don't allow children to play in or near flood waters.
- Stay away from sewerage line, gutters, drains, culverts etc.
- Be careful of snakes; snakebites are common during floods.
- Stay away from electric poles and fallen power-lines to avoid electrocution.
- Don't use wet electrical appliances, get them checked before use.
- Eat freshly cooked and dry food. Always keep your food covered.
- Use boiled and filtered drinking water.
- Keep all drains, gutters near your house clean.
- Stagnation of water can breed vector/water-borne diseases. In case of sickness, seek medical assistance.
- Use bleaching powder and lime to disinfect the surroundings.

Read the given source carefully and answer the questions that follow :

- 18.1** Suggest one precaution before using water after floods. [1]
- 18.2** Mention any two measures related to protection of food items during floods. [1]
- 18.3** Suggest two actions to be taken before leaving the house during a flood warning. [2]

Previously asked in: 2026 32/1/1 Q18

♦ **Water Resources** Floods - disaster management and safety precautions

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Model Answer

- 18.1** Use boiled and filtered drinking water after floods.
- 18.2** Two measures to protect food during floods:
1. Eat freshly cooked and dry food.
 2. Always keep your food covered.
- 18.3** Two actions to be taken before leaving the house during a flood warning:
1. Keep cash, jewellery, valuables, and important documents in a safe place.
 2. Turn off power and gas connections before leaving the house.

Source: Floods – Basic Safety Precautions / During Floods

Explanation

- **18.1** is 1 mark — one clean, direct line from the passage suffices.
- **18.2** is also 1 mark for two points — keep both points brief; examiners award the mark if both are present.
- **18.3** is 2 marks — one mark per action. Draw only from the "Basic safety precautions" section. Avoid mixing with "during floods" points. Writing clearly numbered actions ensures you don't lose marks.
- Always use the exact language of the passage in source-based questions — it shows you've read carefully and prevents errors.

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