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CLASS X · SOCIAL SCIENCE (087) · GEOGRAPHY · CBSE BOARD EXAMINATION 2027

GEOGRAPHY · CHAPTER 3

MODEL ANSWERS

Water Resources

Board-Style Answer Booklet · Answers as CBSE expects them

CBSE marking-scheme pattern | Word count on every answer | 69 model answers | Most-probable 2027 answers marked

INSIDE THIS BOOKLET

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HOW TO USE IT

1. Write your own answer first, in the practice notebook.
2. Then open this booklet. Tick each numbered point you also wrote.
3. Give yourself 1 mark per matching point – that is how the examiner marks.
4. Copy any point you missed into My Mistakes (last page of the Chapter Booklet).
5. Rewrite the answer after 3 days, from memory.

USE WITH Chapter Booklet, Geography Ch 3

M

READ THIS FIRST · BASED ON THE CBSE SAMPLE PAPER AND MARKING SCHEME 2026–27

How CBSE Marks Geography

Every answer in this booklet follows the official marking-scheme pattern: numbered value points, keyword first, inside the word limit. Under each answer you will see its word count and how the marks are split.

The Geography section of the 2027 paper

Section B · 20 marks

Item	Type	Marks	Words	What earns the marks
Q10–Q15	MCQs: statements, matching, assertion–reason, identify from clues	1 each	–	Letter + answer
Q16	Very short answer	2	40	2 points × 1 mark
Q17	Long answer, (A) **or** (B)	5	120	5 points × 1 mark
Q18	Source / case-based: 18.1, 18.2, 18.3	1+1+2	100 in all	From the passage + chapter facts
Q19	Map: locate and label any three of four items	3	–	Right place + name written

In both 2026 papers we read, this chapter gave the **Q18 case** (flood safety in 32/1/1; PM Krishi Sinchayee Yojana in 32/5/1). Dams are on the **Q19 map list** – Hirakud on the Mahanadi was asked in 2026 32/1/1.

How the marking scheme gives marks

SEVEN RULES

- **Marks come from value points.** Each correct, relevant point earns 1 mark: 2 marks = 2 points, 3 marks = 3 points, 5 marks = 5 points. The scheme accepts “any other relevant point”, so a correct NCERT point that is not in our answer also scores.
- **Points are numbered and short.** Official answers have no introduction or conclusion. Our 5-mark answers sometimes add one opening and one closing line only so the answer reads well – skip them when short of time.
- **Keyword first.** Start each point with the key word and underline it – the examiner scans for it. Then give one fact: a name, a date, a number or an example.
- **MCQs:** write the letter and the answer text. Combination questions are answered like “(b) Only a, b and d”.
- **Case / source-based:** (i) and (ii) need one clear line each; the 2-mark part needs two separate points. Use the passage’s own clues, then add chapter facts.
- **Internal choice:** write “(A)” or “(B)” in the margin and attempt only one.
- **Do not repeat** one idea in two points – it earns one mark only.

Answer frames – copy this shape

2-mark answer ≤ 40 words

1. Keyword: one reason or fact.
2. Keyword: a second, different reason or fact.

Two lines, no introduction.

3-mark answer ≤ 60 words

1. Keyword: point + name / date / number.
2. Keyword: point + example.
3. Keyword: point + result.

One sentence per point.

5-mark answer ≤ 120 words

→ Optional opening line that answers the question in short.

1–5 Five numbered points, keyword first, a fact in each.

→ Optional closing line: "So / Hence …".

Order the points in time, or from cause to result.

Case-based 1 + 1 + 2 · ≤ 100 words

(i) One line, from the passage.

(ii) One line: passage clue + chapter fact.

(iii) Two separate points, one line each.

Never copy the whole passage.

Short of time? Learn these ten first

Most probable for 2027

C3	What are multi-purpose river projects?	[5]	C4	How have multi-purpose projects led to conflicts?	[3]
C1	"Water scarcity is mostly caused by over-exploitation and …	[5]	C2	Suggest three ways to use groundwater sustainably.	[3]
C7	"Rainwater harvesting is a viable alternative to large …	[3]	C9	Describe traditional water harvesting in hills, flood …	[3]
D1	Case: When the River Rises	[4]	D2	Case: Water for Every Field	[4]

A

ANSWERS · PART A

Textbook Check – Answers

Model answers to every Textbook Check question. Underlined words are the keywords the examiner looks for.

Water scarcity

A1. Water is a renewable resource. Why then is there water scarcity in India? [3]

1. **Over-use:** more people need more water for homes and food; irrigation over-exploits it.
2. **Unequal access:** some groups get far more water than others.
3. **Pollution:** available water is polluted by sewage, chemicals and fertilisers.

33 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

A2. How have irrigation and agriculture caused water scarcity? [2]

1. **Largest user:** irrigated agriculture is the largest consumer of water.
2. **Groundwater:** private wells and tube-wells have lowered groundwater levels, threatening food security.

22 words · limit 40 | Marking: 2 points × 1 = 2 | MUST DO

A3. How have industrialisation and urbanisation added to water scarcity? [3]

1. **Industry:** industries use much water and need power, 22% of it hydroelectric.
2. **Cities:** growing cities and urban lifestyles demand more water.
3. **Pumping:** housing societies pump their own groundwater, depleting it.

30 words · limit 60 | Marking: 3 points × 1 = 3 | Groundwater over-use: 2025 32/1/1 Q33(A). | MUST DO

A4. Why is it necessary to conserve water? [2]

1. **Health and food:** to prevent health hazards and ensure food security.
2. **Livelihood and nature:** to keep livelihoods going and prevent damage to ecosystems.

23 words · limit 40 | Marking: 2 points × 1 = 2

Dams and multi-purpose projects

A5. Give three examples of hydraulic structures in ancient and medieval India. [3]

1. **Sringaverapura:** near Prayagraj, channelled Ganga flood water (1st century BC).
2. **Bhopal Lake:** one of the largest artificial lakes of the 11th century.
3. **Hauz Khas:** tank built by Iltutmish in the 14th century for Siri Fort.

35 words · limit 60 | Marking: 3 points × 1 = 3

A6. What is a dam? Why are dams now called multi-purpose projects? [3]

1. **Dam:** a barrier across flowing water that creates a reservoir.
2. **Many uses:** irrigation, power, water supply, flood control, navigation, recreation, fish breeding.
3. **Examples:** Bhakra Nangal for power and irrigation; Hirakud for conservation and flood control.

35 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

A7. Why did Nehru call dams the 'temples of modern India'? [2]

1. **Integration:** they would combine agricultural and village development with industrialisation.
2. **Growth:** they would supply power and water for the urban economy.

21 words · limit 40 | Marking: 2 points × 1 = 2

A8. Explain the ecological problems caused by large dams. [3]

1. **River flow:** sedimentation in reservoirs and rockier stream beds harm aquatic life.
2. **Fragmentation:** fish cannot migrate to spawn.
3. **Submergence:** vegetation and soil drown and decompose.

25 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

A9. Why have multi-purpose projects faced opposition from local people? [3]

1. **Displacement:** people lose land, livelihood and access to resources.
2. **Unequal benefits:** gains go to landowners, large farmers, industries and cities.
3. **Movements:** Narmada Bachao Andolan and Tehri Dam Andolan fought for oustees.

31 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

A10. What is the Krishna–Godavari dispute about? [2]

1. **Cause:** Maharashtra diverted more water at Koyna for a multi-purpose project.
2. **Objection:** Karnataka and Andhra Pradesh objected as their downstream flow fell.

22 words · limit 40 | Marking: 2 points × 1 = 2 | 2025 32/1/1 Q8. | MUST DO

A11. How have dams failed to control floods? [2]

1. **Sediment:** sedimentation reduced reservoir capacity and triggered floods.
2. **Release:** release of water in heavy rain worsened floods in Maharashtra and Gujarat (2006).

22 words · limit 40 | Marking: 2 points × 1 = 2 | Floods: 2026 32/1/1 Q18 (case).

Rainwater harvesting

A12. Describe the rainwater harvesting methods used in different regions of India. [5]

1. **Hills:** guls and kuls – diversion channels in the Western Himalayas.
2. **Rajasthan homes:** rooftop harvesting into tankas for drinking water.
3. **Bengal:** inundation channels on flood plains irrigate fields.
4. **Arid fields:** khadins in Jaisalmer and johads elsewhere in Rajasthan.
5. **Meghalaya:** bamboo drip irrigation from springs and streams.

45 words · limit 120 | Marking: 5 points × 1 = 5 | MUST DO

A13. Explain how tankas work in western Rajasthan. [3]

1. **Tank:** an underground tank in the house or courtyard, as big as a room.
2. **Collection:** a pipe brings rain from the sloping roof; the first spell is let go.
3. **Uses:** stores palar pani for drinking; rooms beside it stay cool.

40 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

A14. Why is rooftop rainwater harvesting declining in western Rajasthan? [2]

1. **Canal:** the perennial Rajasthan Canal now supplies plenty of water.
2. **Some still use:** some families keep tankas as they dislike the taste of tap water.

25 words · limit 40 | Marking: 2 points × 1 = 2

A15. Give two examples of modern revival of rainwater harvesting. [2]

1. **Gendathur:** about 200 households in this Mysuru village harvest rooftop rainwater.
2. **Tamil Nadu:** first state to make rooftop harvesting compulsory for all houses.

23 words · limit 40 | Marking: 2 points × 1 = 2 | MUST DO

A16. Explain the bamboo drip irrigation system of Meghalaya. [3]

1. **Old method:** a 200-year-old system using bamboo pipes.
2. **Flow:** water from springs and streams flows by gravity over hundreds of metres.
3. **Drip:** 18–20 litres entering the pipes reach plants at 20–80 drops a minute.

36 words · limit 60 | Marking: 3 points × 1 = 3

B

ANSWER KEY · PART B

Objective – Answer Key

All 20 MCQ and assertion–reason answers, each with a one-line reason so you learn the fact, not only the letter.

Write the option letter **and** the answer, as the marking scheme does – e.g. "(b) ..." followed by the answer text.

Q	Answer	Why (one line)
B1	**(a) a-iii, b-i, c-iv, d-ii**	Type of 2025 32/1/1 Q7.
B2	**(b) Karnataka and Andhra Pradesh**	Type of 2025 32/1/1 Q8.
B3	**(c) Irrigated agriculture**	Irrigation.
B4	**(d) the Western Himalayas**	For agriculture in the hills.
B5	**(a) Tamil Nadu**	With legal penalties.
B6	**(b) Narmada**	Gujarat.
B7	**(c) rain-fed storage fields in Rajasthan**	Khadins – Jaisalmer; johads – other parts of Rajasthan.
B8	**(d) Iltutmish**	For Siri Fort.
B9	**(a) Only a, b and d**	Displacement is a problem.
B10	**(c) Both I and II are correct**	Both true.
B11	**(a) Meghalaya**	200 years old.
B12	**(d) Hirakud**	Type of 2026 32/1/1 Q19 (map).
B13	**(b) full rehabilitation of displaced people**	Earlier on trees to be submerged.
B14	**(b) Gendathur**	About 200 households.
B15	**(a) Rana Pratap Sagar**	Map list.
B16	**(d) Rainwater harvesting**	Harvesting is a solution.
B17	**(a) Both A and R are true, and R is the correct explanation of A.**	R explains A.
B18	**(a) Both A and R are true, and R is the correct explanation of A.**	R explains A.
B19	**(b) Both A and R are true, but R is not the correct explanation of A.**	Both true; R does not explain A.
B20	**(d) A is false, but R is true.**	A false – it caused salinisation in places; R true.

C

ANSWERS · PART C

Board Pattern – Answers

Model answers in the marking-scheme pattern. Orange tags show where a similar question came in a board or sample paper.

Water scarcity and groundwater

★★☆ 1 of 3 papers · 3–5 marks

C1. "Water scarcity is mostly caused by over-exploitation and unequal access." Explain. [5]

1. **Population:** a large population needs more water for homes and food.
2. **Irrigation:** irrigated farming, the largest user, over-uses ground and surface water.
3. **Industry:** industries use much water and depend on hydroelectric power.
4. **Cities:** urban colonies pump their own groundwater, depleting it.
5. **Quality and access:** pollution makes water unusable; poorer groups get less.

52 words · limit 120 | Marking: 5 points × 1 = 5 | Groundwater: 2025 32/1/1 Q33(A). | MUST DO

C2. Suggest three ways to use groundwater sustainably. [3]

1. **Recharge:** build percolation tanks, johads and check dams.
2. **Harvest:** make rooftop rainwater harvesting compulsory, as in Tamil Nadu.
3. **Save:** use drip and sprinkler irrigation and regulate private tube-wells.

28 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

Multi-purpose projects

★★★ 2 of 3 papers · 1–5 marks

C3. What are multi-purpose river projects? Explain their advantages and disadvantages. [5]

1. **Meaning:** dams serving many uses at once – Bhakra Nangal, Hirakud.
2. **Advantages:** irrigation, hydroelectricity, water supply, flood control, navigation and fish breeding.
3. **Ecology:** they disturb river flow, cause sedimentation and block fish migration.
4. **People:** they displace communities; benefits go to large farmers and cities.
5. **Other:** salinisation, floods, earthquakes and water-borne diseases.

50 words · limit 120 | Marking: 5 points × 1 = 5 | MUST DO

C4. How have multi-purpose projects led to conflicts? Give examples. [3]

1. **Urban vs rural:** Sabarmati farmers almost rioted over priority to urban supply.
2. **Inter-state:** Krishna–Godavari dispute over Maharashtra's diversion at Koyna.
3. **Displaced people:** Narmada Bachao Andolan demanded rehabilitation of oustees.

30 words · limit 60 | Marking: 3 points × 1 = 3 | Krishna–Godavari: 2025 32/1/1 Q8. | MUST DO

C5. "Dams did not fulfil their purpose of flood control." Explain. [3]

1. **Sediment:** sedimentation in reservoirs triggered floods.
2. **Release:** water released in heavy rain worsened floods, as in 2006.
3. **Lost silt:** flood plains lost natural fertiliser, adding to land degradation.

28 words · limit 60 | Marking: 3 points × 1 = 3 | Flood case: 2026 32/1/1 Q18.

C6. Explain the Narmada Bachao Andolan. [2]

1. **Who:** tribals, farmers, environmentalists and activists against the Sardar Sarovar Dam.
2. **Aim:** first saving forests from submergence; later rehabilitation of oustees.

21 words · limit 40 | Marking: 2 points × 1 = 2

Rainwater harvesting

★★☆ NCERT core · 3–5 marks

C7. "Rainwater harvesting is a viable alternative to large dams." Justify. [3]

1. **Low cost:** it is cheap, local and needs no displacement.
2. **Local fit:** methods suit local rainfall and soil, like tankas and kuls.
3. **Recharge:** it recharges groundwater and meets drinking needs, as in Gendathur.

33 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

C8. Explain how rooftop rainwater harvesting is carried out in Rajasthan and in Shillong. [3]

1. **Rajasthan:** sloping roofs drain through pipes into underground tankas.
2. **Clean first:** the first rain is let go to clean roofs and pipes.
3. **Shillong:** almost every house harvests rain, meeting 15–25% of its needs.

34 words · limit 60 | Marking: 3 points × 1 = 3

C9. Describe traditional water harvesting in hills, flood plains and arid areas. [3]

1. **Hills:** guls and kuls divert stream water to fields.
2. **Flood plains:** inundation channels in Bengal irrigate fields.
3. **Arid areas:** khadins and johads store rain in fields to moisten soil.

29 words · limit 60 | Marking: 3 points × 1 = 3 | MUST DO

C10. How do community programmes help conserve water? Give two examples. [2]

1. **Neeru-Meeru:** Andhra Pradesh – water-harvesting structures with people's participation.
2. **Arvary Pani Sansad:** Alwar – percolation tanks, johads and check dams.

18 words · limit 40 | Marking: 2 points × 1 = 2

D

ANSWERS · PART D

Case-Based – Answers

One line each for the 1-mark parts; separate points for the 2-mark parts. The whole answer stays within the word limit.

D1. Case-Based · When the River Rises (printed in the booklet) [4]

(i) Why were the dam gates opened? [1]

The reservoir was full, so water was released to protect the dam.

(ii) Give one safety step from the passage. [1]

Move to higher ground (or switch off electricity / avoid moving water).

(iii) Why have big dams not always controlled floods? Give two reasons. [2]

(i) Sedimentation reduces reservoir capacity.
(ii) Releasing water during heavy rain worsens floods downstream.

38 words in all · limit 100 | Marking: 1 + 1 + 2 = 4 | Same theme as 2026 32/1/1 Q18 (flood safety).

D2. Case-Based · Water for Every Field (printed in the booklet) [4]

(i) Name the scheme. [1]

Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).

(ii) What does 'more crop per drop' mean? [1]

Getting more output from less water through drip and sprinkler irrigation.

(iii) Give two benefits of such irrigation for farmers. [2]

(i) They can grow more than one crop a year.
(ii) Groundwater is saved and the water table stops falling.

37 words in all · limit 100 | Marking: 1 + 1 + 2 = 4 | Same theme as 2026 32/5/1 Q18 (PMKSY).

D3. Case-Based · Rooms Under the Courtyard (printed in the booklet) [4]

(i) What is the tank called? [1]

Tanka.

(ii) Why is the first rain not collected? [1]

It cleans the roof and pipes.

(iii) Why is this practice declining? Give two reasons. [2]

(i) The Rajasthan Canal now supplies plenty of water.
(ii) Piped water is easier, though some still prefer the taste of tanka water.

30 words in all · limit 100 | Marking: 1 + 1 + 2 = 4

D4. Case-Based · The River Divided (printed in the booklet) [4]

(i) Name the dispute described. [1]

The Krishna–Godavari dispute.

(ii) Which states objected? [1]

Karnataka and Andhra Pradesh.

(iii) Give two other conflicts caused by multi-purpose projects. [2]

(i) Urban vs rural use – Sabarmati basin farmers in Gujarat.
(ii) Displaced people vs the state – Narmada Bachao Andolan.

27 words in all · limit 100 | Marking: 1 + 1 + 2 = 4 | Same topic as 2025 32/1/1 Q8.

D5. **Case-Based · Bamboo Water** (printed in the booklet) **[4]**

(i) **Name the state.** [1]

Meghalaya.

(ii) **How old is this system?** [1]

About 200 years.

(iii) **Give two advantages of this method.** [2]

(i) Water is carried by gravity, without power.
(ii) Drip feeding saves water and wets only the roots.

22 words in all · limit 100 | Marking: 1 + 1 + 2 = 4

ANSWERS · PART E

E Map Work – Key

Where each map item lies, so you can check your own outline map.

Map answers are marked only if the place is shown at the right spot **and** its name is written. Use the school's printed outline map. This key tells you where each item lies.

Item	Where it is – check your map against this
Salal	**Jammu and Kashmir – on the Chenab, north-west of Jammu**
Bhakra Nangal	**Punjab–Himachal Pradesh border**
Tehri	**Uttarakhand (Garhwal hills)**
Rana Pratap Sagar	**South-east Rajasthan, near Kota**
Sardar Sarovar	**Gujarat (near the MP–Maharashtra border)**
Hirakud	**Western Odisha, near Sambalpur**
Nagarjuna Sagar	**Telangana–Andhra Pradesh border**
Tungabhadra	**Karnataka, near Hosapete (Bellary district)**