Affiliated to CBSE, New Delhi (Affiliation No. 1030642)

GNPS

GOMTI NANDAN PUBLIC SCHOOL

Gandhi Ward, Bina (M.P.) 470113. | 9165 609 333. | info@mygnps.com | www.mygnps.com

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

GEOGRAPHY · CHAPTER 5

Minerals and Energy Resources

Ore
Coal
Sun

Chapter Practice Booklet · Questions only

15 note blocks + minerals table | 7 power-plant map items | PYQs 2025–2026 | 68 practice questions | Model Answer Booklet

INSIDE THIS BOOKLET

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STUDENT DETAILS

NAME _____

CLASS & SECTION _____

ROLL NO. _____

BOOKLET STARTED ON _____

CHAPTER TEST SCORE _____ / 20

1

READ THIS FIRST

Chapter Notes

The whole chapter in short-note form: how minerals occur, their types and belts, mining and conservation, and every conventional and non-conventional energy source. Revise from here – you should not need the textbook again.

1 What is a mineral?

- A **mineral** is a **homogeneous, naturally occurring substance** with a **definable internal structure**.
- Minerals occur in many forms – from the hardest **diamond** to the softest **talc**. **Rocks** are combinations of minerals; some rocks, like limestone, are made of a single mineral.
- Minerals are **indispensable**: almost everything we use – from a tiny pin to a tall building, railway lines, cars, aeroplanes and even the food we eat (salt, minerals in our body) – comes from minerals.
- Geologists study the formation, age and chemistry of minerals; **geographers** study their **distribution** and economic use.

2 Mode of occurrence of minerals

Minerals are usually found in **ores** – an accumulation of a mineral mixed with other elements. Mining is worthwhile only when the concentration allows **commercially viable** extraction.

Where	How formed	Examples
Igneous and metamorphic rocks	in cracks, crevices, faults and joints; smaller = **veins**, larger = **lodes**; formed when molten or gaseous matter is forced up through cavities and cools	tin, copper, zinc, lead
Sedimentary rocks	in **beds or layers**, by deposition and concentration in horizontal strata, often under great heat and pressure; some by **evaporation** in dry regions	coal, some iron ore; gypsum, potash salt, sodium salt
Decomposition of surface rocks	soluble parts are removed, leaving a **residual mass** of weathered material with ore	**bauxite**
Alluvial (placer) deposits	in sands of **valley floors** and at the **base of hills**; minerals not corroded by water	gold, silver, tin, platinum
Ocean waters and beds	dissolved in sea water; nodules on the ocean floor	common salt, magnesium, bromine; **manganese nodules**

3 Classification of minerals

	Metallic		Non-metallic	Energy minerals
	Ferrous (contain iron)	**Non-ferrous**	**Precious**		
	iron ore, manganese, nickel, cobalt	copper, lead, tin, **bauxite**	gold, silver, platinum	mica, salt, potash, sulphur, granite, limestone, marble, sandstone	coal, petroleum natural gas

Rat-hole mining: most minerals in India are nationalised and can be mined only with government permission. But in many tribal areas of the **north-east**, minerals are owned by individuals or communities. In **Meghalaya** (Jowai and Cherrapunjee) coal is dug by family members through long, narrow tunnels – this is called **rat-hole mining**.

4 Where minerals are found in India

- **Peninsular rocks** hold most of the reserves of coal, metallic minerals, mica and many non-metallic minerals.
- **Sedimentary rocks** on the western and eastern flanks of the peninsula, in **Gujarat and Assam**, hold most of the **petroleum**.
- **Rajasthan**, with the rock systems of the peninsula, has reserves of many **non-ferrous** minerals.
- The vast **alluvial plains of north India** are almost **without economic minerals**.

- Minerals are unevenly spread because of differences in the **geological structure, processes and time** involved in their formation.

5 Ferrous minerals: iron ore

- Ferrous minerals make up about **three-fourths** of the value of metallic minerals produced; they are the base of metallurgical industries.
- Iron ore is the **backbone of industrial development**. **Magnetite** is the finest ore, with up to **70%** iron and excellent magnetic qualities (useful in the electrical industry). **Hematite** is the most important ore by quantity used, with **50–60%** iron.

Belt	Key mines / facts
Odisha–Jharkhand	high-grade hematite at **Badampahar** (Mayurbhanj and Kendujhar, Odisha); **Gua and Noamundi** (Singhbhum, Jharkhand)
Durg–Bastar–Chandrapur	Chhattisgarh and Maharashtra; **Bailadila** hills (Bastar) have 14 deposits of super high-grade hematite with the best properties for steel; exported to **Japan and South Korea** through **Visakhapatnam**
Ballari–Chitradurga–Chikkamagaluru–Tumakuru	Karnataka; **Kudremukh** mines (Western Ghats) are a **100% export unit**, among the largest deposits in the world; ore goes as **slurry through a pipeline** to a port near **Mangaluru**
Maharashtra–Goa	Goa and Ratnagiri; ore not of very high grade but well exploited; exported through **Marmagao**

6 Manganese and non-ferrous minerals

- **Manganese**: used to make **steel** and ferro-manganese alloy – about **10 kg** is needed for one tonne of steel; also used in bleaching powder, insecticides and paints. **Odisha** is the largest producer.
- India's reserves and production of **non-ferrous** minerals (copper, bauxite, lead, zinc, gold) are **poor**, though they are vital for metallurgical, engineering and electrical industries.
- **Copper**: India is critically deficient. It is **malleable, ductile** and a **good conductor** – used in electric cables, electronics and chemical industries. Mines: **Balaghat** (MP), **Khetri** (Rajasthan), **Singhbhum** (Jharkhand).
- **Bauxite**: the ore of **aluminium**; formed by **decomposition** of rocks rich in aluminium silicates. Aluminium combines the strength of metals like iron with extreme **lightness**, good conductivity and great malleability. Deposits: **Amarkantak plateau, Maikal hills, Bilaspur–Katni** plateau. **Odisha** is the largest producer; **Panchpatmali** (Koraput) is its most important deposit.

7 Non-metallic and rock minerals

- **Mica** is made of a series of thin **plates or leaves** and splits easily into sheets; it may be clear, black, green, red, yellow or brown.
- Its excellent **di-electric strength**, low power loss, insulating property and resistance to **high voltage** make mica indispensable in **electric and electronic** industries.
- Mica areas: northern edge of the Chota Nagpur plateau – the **Koderma–Gaya–Hazaribagh** belt of Jharkhand leads; also around **Ajmer** (Rajasthan) and the **Nellore** belt (Andhra Pradesh).
- **Limestone** is found with rocks made of calcium carbonate or calcium and magnesium carbonates, in **sedimentary** rocks. It is the basic raw material of the **cement** industry and is needed for **smelting iron ore** in the blast furnace.

8 Hazards of mining and conservation of minerals

Hazards of mining

- Miners breathe **dust and harmful fumes**, which cause **lung (pulmonary) diseases**.
- Risk of **collapsing mine roofs, flooding and fires**.
- Water sources near mines get **contaminated**; dumping of waste and slurry **degrades land and soil** and pollutes streams and rivers.
- Need: **stricter safety rules** and enforcement of environmental laws.

Why conserve minerals?

- Workable deposits are a tiny fraction (about **1%**) of the earth's crust.

- Minerals are **finite and non-renewable**; they form over millions of years, so the rate of replenishment is **infinitely small** compared with our rate of use.
- Continued mining means deeper mines, **higher costs** and **lower quality** ore.

How? Planned and sustainable use; **improved technology** to use low-grade ores at low cost; **recycling** metals; using **scrap** and **substitutes**.

9 Energy resources: conventional and non-conventional

- Energy is needed for cooking, lighting, heating, running vehicles and machinery. It comes from fuel minerals (coal, petroleum, natural gas, uranium) and from electricity.
- **Conventional** sources: firewood, cattle dung cake, coal, petroleum, natural gas and electricity (hydel and thermal).
- **Non-conventional** sources: solar, wind, tidal, geothermal, biogas and atomic (nuclear) energy.
- In rural India, **firewood and dung cakes** meet most household energy needs (over 70% as per the textbook). This is getting harder as **forests shrink**, and burning dung wastes **valuable manure**.

10 Coal

- The **most abundant fossil fuel** in India; used for power, industry and homes. Formed by **compression of plant material** over millions of years; its type depends on the degree of compression and the depth and time of burial.

Type	Features
Peat	decaying plants in swamps; low carbon, high moisture, low heating capacity
Lignite	low-grade **brown coal**, soft, high moisture; main reserves at **Neyveli** (Tamil Nadu); used for electricity
Bituminous	buried deep under higher heat; **most popular** commercial coal; **metallurgical coal** is high-grade bituminous, used to smelt iron in blast furnaces
Anthracite	**highest quality** hard coal

- **Gondwana coal** (a little over **200 million years** old): metallurgical coal, mainly in the **Damodar valley** (West Bengal–Jharkhand) – **Jharia, Raniganj, Bokaro**; also Godavari, Mahanadi, Son and Wardha valleys.
- **Tertiary coal** (about **55 million years**): north-east – Meghalaya, Assam, Arunachal Pradesh, Nagaland.
- Coal is **bulky** and loses weight on use (turns to ash), so heavy industries and **thermal power stations** are located **on or near coalfields**.

11 Petroleum and natural gas

Petroleum (mineral oil) – the next major energy source after coal.

- Gives fuel for heat and lighting, **lubricants** for machines and raw material for many industries. **Refineries** are a **nodal industry** for synthetic textiles, fertilisers and chemicals.
- In India, oil occurs in **anticlines and fault traps** in rocks of the **tertiary age**. In an anticline (upfold), oil collects in the crest in a **porous** layer (limestone or sandstone) held between **non-porous** layers; gas, being lighter, lies above the oil.
- Textbook shares: about **63%** from **Mumbai High**, 18% from **Gujarat**, 16% from **Assam**. **Ankaleshwar** is Gujarat's most important field. **Assam is the oldest** oil-producing state – **Digboi, Naharkatiya, Moran-Hugrijan**.

Natural gas

- A **clean** energy source found with or without petroleum; a fuel and a raw material for **petrochemicals**; **environment-friendly** because of low carbon dioxide emissions – the **fuel of the present century**.
- Reserves: **Krishna–Godavari basin**; Mumbai High and allied fields with the **Gulf of Cambay** on the west coast; **Andaman and Nicobar** islands.
- The **1700 km Hazira–Vijaipur–Jagdishpur (HVJ)** pipeline links Mumbai High and Bassien with fertiliser, power and industrial complexes of western and northern India. Power and fertiliser industries are key users; **CNG** is replacing liquid fuels in vehicles.

12 Electricity: hydel and thermal

- Electricity has a wide range of uses in homes, farms, industry and transport. **Per capita consumption of electricity** is taken as an **index of development**.

Hydro-electricity	Thermal power

How	**fast-flowing water** turns hydro turbines	**burning coal, petroleum or natural gas** turns turbines
Resource	**renewable**	**non-renewable** fossil fuels
Examples	Bhakra Nangal, Damodar Valley Corporation, Kopili Hydel Project	over 310 thermal plants (textbook); Namrup, Singrauli, Ramagundam

13 Non-conventional energy 1: why, nuclear, solar, wind

Why we need them: growing energy use makes India heavily dependent on fossil fuels; rising oil and gas prices and possible shortages make energy supply **uncertain**, which can hurt the economy; burning fossil fuels causes **pollution**. So we must use renewable sources – sun, wind, tide, biomass and waste.

- **Nuclear (atomic) energy**: released by **altering the structure of atoms**; the heat is used to make electricity. **Uranium and thorium** from **Jharkhand** and the **Aravalli** ranges of Rajasthan; **monazite sands of Kerala** are rich in thorium.
- **Solar energy**: India is a **tropical** country with huge potential. **Photovoltaic** technology turns sunlight directly into electricity. A large solar plant is at **Madhapur, near Bhuj**, where solar energy sterilises milk cans. It can cut rural use of firewood and dung cakes.
- **Wind power**: India is called a '**wind super power**'. The largest wind farm cluster is in **Tamil Nadu, from Nagarcoil to Madurai**; others in AP, Karnataka, Gujarat, Kerala, Maharashtra and Lakshadweep. **Nagarcoil and Jaisalmer** use wind energy well.

14 Non-conventional energy 2: biogas, tidal, geothermal

- **Biogas**: shrubs, farm waste and animal and human waste decompose to give gas with **higher thermal efficiency** than kerosene, dung cake and charcoal. Plants are set up at municipal, cooperative and individual levels. **Gobar gas plants** give farmers **twin benefits** – energy and **better manure** – and save trees and manure from being burnt.
- **Tidal energy**: **floodgate dams** are built across inlets. At high tide water enters and is trapped when the gate closes; after the tide falls, the water flows back to the sea through a pipe and turns a **turbine**. Ideal sites: **Gulf of Khambhat**, **Gulf of Kachchh** (Gujarat) and the **Gangetic delta in the Sunderbans** (West Bengal).
- **Geothermal energy**: heat from the **earth's interior**. The earth gets hotter with depth; where this gradient is high, **groundwater** absorbs heat from rocks and rises as **steam**, which drives turbines. India has hundreds of hot springs; two experimental projects: **Parvati valley near Manikarn** (Himachal Pradesh) and **Puga valley** (Ladakh).

15 Conservation of energy resources

- Energy is a **basic need for economic development** – agriculture, industry, transport, commerce and homes all need it; its use is rising steadily.
- We need a **sustainable path** of energy development. **Promoting energy conservation** and **using more renewable sources** are the **twin planks** of sustainable energy.
- India is among the **least energy-efficient** countries, so we must use limited energy **judiciously**.
- What citizens can do: use **public transport** instead of private vehicles; **switch off** lights and fans when not needed; use **power-saving devices** (LED bulbs, star-rated appliances); use **non-conventional** sources.

> **'Energy saved is energy produced'** – every unit we save is a unit that need not be generated: it saves fossil fuel, money and the environment. (Board 2026, 5 marks.)

Minerals, mines and fields at a glance

Matching MCQs come from here (2025: match minerals with mines)

Mineral / fuel	Type	Main use	Mines / fields / states
Iron ore	Ferrous	steel; backbone of industry	Mayurbhanj (Odisha), Durg and Bailadila (Chhattisgarh), Ballari and Kudremukh (Karnataka)
Manganese	Ferrous	steel, ferro-manganese, paints	Odisha (largest)
Copper	Non-ferrous	cables, electronics	Balaghat (MP), Khetri (Rajasthan), Singhbhum (Jharkhand)
Bauxite	Non-ferrous	aluminium	Panchpatmali (Koraput, Odisha), Amarkantak, Maikal hills
Mica	Non-metallic	electric and electronic goods	Koderma–Gaya–Hazaribagh (Jharkhand), Ajmer, Nellore
Limestone	Non-metallic	cement; smelting iron	sedimentary rocks
Coal	Energy	power, industry	Jharia, Raniganj, Bokaro (Damodar valley); Talcher (Odisha); lignite – Neyveli (TN)
Petroleum	Energy	fuel, lubricants, raw material	Mumbai High, Bassien; Ankaleshwar, Kalol (Gujarat); Digboi, Naharkatiya (Assam)
Natural gas	Energy	fuel, fertiliser, CNG	Krishna–Godavari basin, Mumbai High, Gulf of Cambay, Andaman and Nicobar
Uranium, thorium	Atomic	nuclear power	Jharkhand, Aravallis (Rajasthan); thorium in Kerala's monazite sands

Key terms

1- and 2-mark answers

Mineral – homogeneous, naturally occurring substance with a definable internal structure

Ore – accumulation of a mineral mixed with other elements

Veins and lodes – small and large mineral deposits in cracks of igneous or metamorphic rocks

Placer deposit – mineral found in sands of valley floors and the base of hills

Ferrous – metallic minerals containing iron

Non-ferrous – metallic minerals without iron – copper, bauxite, lead

Rat-hole mining – coal dug through long, narrow tunnels by families in Meghalaya

Magnetite / Hematite – finest iron ore (up to 70% iron) / most used iron ore (50–60%)

Lignite – low-grade brown coal; Neyveli

Metallurgical coal – high-grade bituminous coal used to smelt iron

Anticline – upfold in rocks where oil and gas collect

Nodal industry – an industry that supplies raw material to many others, e.g. refineries

Photovoltaic – technology that converts sunlight directly into electricity

Gobar gas plant – biogas plant using cattle dung; gives energy and manure

Geothermal energy – power from the heat of the earth's interior

Exam snapshot

What the board asks, and how to prepare

SYLLABUS 2026–27

- Types of minerals; distribution; use and economic importance; conservation
- Types of power resources: conventional and non-conventional; distribution and use; conservation
- **Map:** power plants (locate and label) – thermal: Namrup, Singrauli, Ramagundam; nuclear: Narora, Kakrapar, Tarapur, Kalpakkam

BOARD WEIGHTAGE

20 / 80

Geography is Section B (Q10–Q19). In **both 2026 papers** we read, this chapter gave **Q13** (MCQ) and **both choices of Q17** (5 marks), and 32/1/1 had a **nuclear plant** in Q19 (map). 2025 gave two MCQs and an atomic plant on the map. Expect **6–7 marks** – the heaviest Geography chapter in recent papers.

MOST ASKED IN BOARD PAPERS, 2025–2026 (3 PAPERS READ IN FULL)

How often	Topic / question type	Marks	Papers
★★★	Energy conservation; 'energy saved is energy produced'	5	2 of 3
★★★	Type of a mineral (bauxite, coal…); why minerals matter	1	3 of 3
★★☆	Modes of occurrence of minerals	5	1 of 3
★★☆	Electricity: uses; per capita use as an index of development	5	1 of 3
★★☆	Map: nuclear and thermal power plants	1	2 of 3
★★☆	Match minerals with mines	1	1 of 3

ANSWER-WRITING RULES FOR SOCIAL SCIENCE (CBSE 2026–27)

2 marks
Very short answer · up to 40 words · 2 clear points

3 marks
Short answer · up to 60 words · 3 points

4 marks
Case / source based · up to 100 words in all · answer from the source

5 marks
Long answer · up to 120 words · 5 points, with an intro line

Write in points, underline key words, and give one example or date wherever you can. Read every "OR" choice before you start, and attempt only one.

MISTAKES THAT COST MARKS

- Calling bauxite or copper ferrous – they are **non-ferrous**; only iron, manganese, nickel, cobalt are ferrous.
- Writing that magnetite has 50–60% iron – **magnetite up to 70%**, **hematite 50–60%**.
- Placing nuclear plants wrongly: **Narora – UP**, **Kakrapar – Gujarat**, **Tarapur – Maharashtra**, **Kalpakkam – Tamil Nadu**.
- Saying lignite is high-grade – it is **low-grade brown coal** (Neyveli); **anthracite** is the best.
- Listing only switching off lights for conservation – add **public transport, power-saving devices, renewables** and the reason (finite, costly, polluting).
- Writing 'oil is found in valleys' – it collects in **anticlines and fault traps** of tertiary rocks.

HOW TO USE THIS BOOKLET

1. **Day 1:** Read the Chapter Notes twice; learn the key terms.
2. **Next day:** Parts A and B. **Then:** Parts C and D – MUST DO questions first.
3. Part E: mark every map item on a fresh outline map of India.
4. Check every answer against the **Model Answer Booklet**: same points, same keywords, within the word limit.
5. Write every mistake on the My Mistakes page and redo it after 3 days.

A

PART A · NCERT PRACTICE

Textbook Check

Every section of the chapter and every NCERT exercise idea, asked in new words. Model answers for all of these are in the Model Answer Booklet.

Minerals

A1. What is a mineral? Why are minerals called indispensable? MUST DO [2]

A2. How do minerals occur in igneous and in sedimentary rocks? MUST DO [3]

A3. Classify minerals into three groups with two examples each. MUST DO [3]

A4. What is rat-hole mining? Where is it practised? [2]

A5. Distinguish between magnetite and hematite. MUST DO [2]

A6. Name the four iron-ore belts of India with one mine in each. MUST DO [3]

A7. State two uses of manganese. [2]

A8. Why is copper important? Name two copper-producing areas. [2]

A9. How is bauxite formed? Why is aluminium important? [3]

A10. Why is mica indispensable for the electric and electronic industries? Where is it found? MUST DO [3]

A11. Describe the hazards of mining for miners and the environment. MUST DO [3]

A12. Why is it necessary to conserve minerals? Suggest two ways. MUST DO [3]

Energy

A13. Distinguish between conventional and non-conventional sources of energy. MUST DO [3]

A14. Describe the four types of coal. MUST DO [3]

A15. In which geological structures is petroleum found in India? [3]

A16. Why is natural gas called the fuel of the present century? MUST DO [2]

A17. Distinguish between hydro-electricity and thermal power. MUST DO [3]

A18. How is nuclear energy obtained? Name its raw materials and where they are found. [2]

A19. Why does solar energy have a bright future in India? [2]

A20. What are gobar gas plants? Give their benefits. MUST DO [3]

A21. How is tidal energy produced? Name two suitable places in India. [3]

A22. How is geothermal energy produced? Name the two experimental projects. [3]

B

PART B · SECTION B STYLE

Objective Practice

All the MCQ types used in the board paper: type of a mineral, matching minerals with mines, statements and assertion–reason.

ASSERTION–REASON: HOW TO ANSWER

(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.

Multiple choice

1 mark each

B1. Bauxite belongs to which group of minerals? [1]

(a) Ferrous **(b)** Non-ferrous **(c)** Precious **(d)** Non-metallic

B2. In the classification of minerals, coal is placed among: [1]

(a) ferrous minerals **(b)** non-metallic minerals
(c) energy minerals **(d)** precious minerals

B3. Match the minerals with the places: [1]
(a) Iron ore (b) Copper (c) Mica (d) Bauxite
(i) Koderma (ii) Khetri (iii) Bailadila (iv) Panchpatmali

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

B4. Which iron ore contains up to 70 per cent iron? [1]

(a) Hematite **(b)** Limonite **(c)** Siderite **(d)** Magnetite

B5. Gold and platinum found in the sands of valley floors are called: [1]

(a) veins **(b)** placer deposits **(c)** lodes **(d)** nodules

B6. Iron ore from Kudremukh reaches the port near Mangaluru: [1]

(a) as slurry through a pipeline **(b)** by ropeway
(c) by river barges **(d)** by air

B7. Lignite (brown coal) is mainly mined at: [1]

(a) Jharia **(b)** Raniganj **(c)** Neyveli **(d)** Talcher

B8. Which is the oldest oil-producing state of India? [1]

(a) Gujarat **(b)** Maharashtra **(c)** Rajasthan **(d)** Assam

B9. The HVJ gas pipeline links Hazira, Vijaipur and: [1]

(a) Jamnagar **(b)** Jagdishpur **(c)** Jodhpur **(d)** Jabalpur

B10. India's two experimental geothermal projects are at: [1]

(a) Nagarcoil and Jaisalmer **(b)** Madhapur and Bhuj
(c) Manikarn and Puga valley **(d)** Gulf of Kachchh and Sunderbans

B11. Read the statements: [1]
I. Mica has high di-electric strength.
II. Mica is a ferrous mineral.
Choose the correct option.

(a) Only I is correct (b) Only II is correct
(c) Both I and II are correct (d) Neither I nor II is correct

B12. The largest wind farm cluster of India stretches from: [1]

(a) Bhuj to Jamnagar (b) Jaisalmer to Barmer
(c) Nagarcoil to Madurai (d) Pune to Satara

B13. Limestone is the basic raw material of which industry? [1]

(a) Textile (b) Paper (c) Aluminium (d) Cement

B14. Which nuclear power station is located in Uttar Pradesh? [1]

(a) Kakrapar (b) Narora (c) Tarapur (d) Kalpakkam

B15. Which gives farmers both energy and better manure? [1]

(a) Gobar gas plant (b) Thermal power plant
(c) Tidal power plant (d) Burning dung cakes

B16. The monazite sands of Kerala are rich in: [1]

(a) bauxite (b) manganese (c) copper (d) thorium

Assertion–Reason

1 mark each

B17. ASSERTION–REASON [1]
Assertion (A): Minerals are an indispensable part of our lives.
Reason (R): Almost everything we use, from a pin to a building, is made from minerals.

B18. ASSERTION–REASON [1]
Assertion (A): Thermal power stations are usually built near coalfields.
Reason (R): Coal is formed from plant material compressed over millions of years.

B19. ASSERTION–REASON [1]
Assertion (A): Natural gas is called an environment-friendly fuel.
Reason (R): Natural gas is found only in the Krishna–Godavari basin.

B20. ASSERTION–REASON [1]
Assertion (A): India is one of the most energy-efficient countries in the world.
Reason (R): Energy conservation and renewable energy are the twin planks of sustainable energy.

C

PART C · BOARD PATTERN

Board Pattern Practice

Written-answer questions grouped by topic. ★★★ = asked in 2 or more of the 3 papers read · ★★ = asked once or NCERT core · ★ = supporting topic.

Conservation of energy

★★★ both 2026 papers · 5 marks (Q17)

C1. "Energy saved is energy produced." Explain with five suitable points. MUST DO [5]

C2. How is energy conservation linked to sustainable development? Suggest measures to conserve energy. MUST DO [5]

C3. Why is there a pressing need to use non-conventional sources of energy in India? MUST DO [3]

Electricity

★★☆ 2026 32/1/1 · 5 marks (Q17)

C4. Explain the importance of electricity. Why is its per capita consumption treated as an index of development? MUST DO [5]

C5. How is electricity generated in India? Compare the two main methods. [3]

Minerals: occurrence, types and belts

★★★ all 3 papers · 1–5 marks

C6. Describe the modes of occurrence of minerals with examples. MUST DO [5]

C7. Distinguish between ferrous and non-ferrous minerals with examples. Why is India poor in the latter? MUST DO [3]

C8. Describe the distribution of iron ore in India. MUST DO [5]

C9. Describe the occurrence of coal in India. [3]

C10. Suggest any three measures to conserve mineral resources. MUST DO [3]

C11. Describe any five non-conventional sources of energy in India. MUST DO [5]

D

PART D · CASE-BASED STYLE

Case-Based Questions

Each case carries 4 marks (1 + 1 + 2), as in Q18 of the board paper.

D1. Case-Based · Gold in the Riverbed [4]

In a hilly district, villagers wash the sand of a stream bed in wide pans after the rains and pick out tiny shining grains of gold. A geologist explains that the metal was carried down from rocks upstream and, unlike iron, it does not rust in water.

(i) What type of deposit is this? [1]

(ii) Why does gold collect in such deposits? [1]

(iii) Name two other ways in which minerals occur, with one example each. [2]

D2. Case-Based · Red Earth to Japan [4]

In the hills of Bastar, huge machines dig out red-black lumps of ore so rich in metal that steel makers abroad pay a high price. Trains carry it to an east-coast port, from where ships sail to Japan and South Korea.

(i) Name the mineral and the hill range. [1]

(ii) Name the port used. [1]

(iii) Give two reasons why iron ore is called the backbone of industrial development. [2]

D3. Case-Based · The Village Gas Plant [4]

Ramesh fills a closed pit with cow dung and water every morning. A pipe from the pit lights his family's stove, and the slurry that comes out goes to his fields. His mother no longer spends hours making dung cakes.

(i) Name this type of plant. [1]

(ii) Why is this gas better than dung cake as a fuel? [1]

(iii) State the twin benefits this plant gives the farmer. [2]

D4. Case-Based · Oil under the Sea [4]

About 160 km off the Mumbai coast, drilling platforms tap oil trapped in an upward fold of porous rock sealed above and below by non-porous layers. Gas collected above the oil is sent by pipeline to fertiliser and power plants in northern India.

(i) Name the oil field and the structure that traps the oil. [1]

(ii) Why does the gas lie above the oil? [1]

(iii) Why are refineries called a nodal industry? Give two industries they feed. [2]

D5. Case-Based · The School Energy Audit [4]

Class 10 students checked their school for a week. They found lights on in empty rooms, old tube lights, and many teachers coming alone in cars. They prepared a poster titled 'Every unit saved is a unit produced'.

(i) Which idea of energy use does the poster show? [1]

(ii) Why is energy conservation needed in India? [1]

(iii) Suggest two steps the school can take. [2]

E

PART E · MAP SKILL

Map Work: Power Plants

Thermal and nuclear power plants from the CBSE map list (locate and label). Q19 asks any three of four items.

WHAT THE BOARD ASKS

Q19 (3 marks) gives four map items from the whole Geography list; you **locate and label any three**. Mark the plant with a dot and write its name. 2026 (32/1/1 Q19) asked **a nuclear power plant in Uttar Pradesh**; 2025 (32/1/1 Q37(b)) asked **an atomic power plant in Gujarat**.

Locate and label	What to remember
☐ Namrup – thermal	Gas-based, north-east
☐ Singrauli – thermal	Coal belt, super thermal
☐ Ramagundam – thermal	On the Godavari
☐ Narora – nuclear	On the Ganga
☐ Kakrapar – nuclear	Near Surat
☐ Tarapur – nuclear	India's first, coast
☐ Kalpakkam – nuclear	Coast, south of Chennai

Practice drill – use one fresh outline map of India for each round

1. Round 1: the three thermal plants – Namrup, Singrauli, Ramagundam.
2. Round 2: the four nuclear plants – Narora, Kakrapar, Tarapur, Kalpakkam.
3. Round 3: all seven from memory, then say the state of each aloud.

F

PART F · REAL BOARD QUESTIONS

Board PYQ Index

Real questions from recent Social Science board papers, by topic. Open the official paper and attempt the listed questions.

Frequency	Topic	Marks	Where asked (year: paper code, question number)	Practise here
★★★	**Energy conservation; 'energy saved is energy produced'**	5	**2026:** 32/1/1 Q17(A); 32/5/1 Q17(A) (conservation and sustainable development)	A13, B20, C1–C3, D5
★★★	**Type of a mineral; why minerals matter**	1	**2026:** 32/1/1 Q13 (bauxite – non-ferrous); 32/5/1 Q13 (coal – energy mineral) · **2025:** 32/1/1 Q10 (A–R: minerals indispensable)	A1, A3, A9, B1–B2, B17, C7
★★☆	**Modes of occurrence of minerals**	5	**2026:** 32/5/1 Q17(B)	A2, B5, C6, D1
★★☆	**Electricity: uses; per capita consumption as an index**	5	**2026:** 32/1/1 Q17(B)	A17, C4–C5
★★☆	**Map: power plants**	1	**2026:** 32/1/1 Q19 (nuclear plant in UP – Narora) · **2025:** 32/1/1 Q37(b) (atomic plant in Gujarat – Kakrapar)	B14, map work
★★☆	**Match minerals with mines**	1	**2025:** 32/1/1 Q11	A5–A10, B3–B4, B6, B11, C8, D2
★☆☆	**Coal, petroleum, gas; non-conventional sources**	1–5	Not asked as a written question in the papers read – NCERT core.	A14–A22, B7–B10, B12, B15–B16, B18–B19, C9, C11, D3–D4

Papers read in full (3): 2026 – 32/1/1, 32/5/1 · 2025 – 32/1/1. Both choices of Q17 came from this chapter in both 2026 papers. Download official papers from cbse.gov.in → Previous Year Question Papers.

G

PART G · YOUR RECORD

My Mistakes

Write down each mistake from this chapter, including the Sunday Chapter Test.

Every wrong answer is a free lesson. Write it here, find the point you missed, and redo the question after three days.

Date	Part & Q No.	What went wrong	Correct point or fact	Redone ✓