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Minerals and Energy Resources — CBSE Class 10 Social Science Chapter Test

FREE CHAPTER TEST · CLASS X · SOCIAL SCIENCE (087) · PATTERN OF THE CBSE SAMPLE QUESTION PAPER 2026-27

TIME ALLOWED	MAXIMUM MARKS	QUESTIONS	NAME / ROLL NO.
1½ hours	40	20 (A 10 · B 4 · C 3 · D 1 · E 2)	

GENERAL INSTRUCTIONS

Read the following instructions very carefully and strictly follow them:

1. This question paper contains 20 questions. All questions are compulsory.
2. This question paper is divided into five sections: A, B, C, D and E.
3. In Section A, Questions 1 to 8 are multiple choice questions (MCQs) and Questions 9 and 10 are assertion-reason based questions of 1 mark each.
4. In Section B, Q11–14 are very short answer (VSA) type questions, carrying 2 marks each.
5. In Section C, Q15–17 are short answer (SA) type questions, carrying 3 marks each.
6. In Section D, Q18 is a long answer (LA) type question, carrying 5 marks.
7. In Section E, Q19–20 are case study based questions, carrying 4 marks each, with sub-parts of the values of 1, 1 and 2 marks.
8. There is no overall choice. However, an internal choice has been provided in 1 question of Section B, 1 question of Section C, 1 question of Section D and in the 2-mark sub-part of each question of Section E.
9. Answer very short answer questions in about 40 words, short answer questions in about 60 words, long answer questions in about 120 words and case-based questions in about 100 words.
10. This chapter test follows the section structure, question types and marks per question of the CBSE Class X Social Science (087) Sample Question Paper 2026-27, at about half the length of the 80-mark board paper: 40 marks in 1½ hours.
11. The answer key and the marking scheme are at the end of this booklet. Attempt the paper in 1½ hours before you look at them.

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Chapter: Minerals and Energy Resources (Geography: Contemporary India – II) · **Topics:** What is a mineral · Mode of occurrence of minerals · Ferrous minerals: iron ore and manganese · Non-ferrous minerals · Non-metallic minerals · Conservation of minerals · Conventional sources of energy · Non-conventional sources of energy · Conservation of energy

SECTION A

This section comprises 10 questions of 1 mark each: 8 multiple choice questions (MCQs) and 2 assertion-reason based questions.

1. Which iron ore is the finest, with a very high content of iron of up to 70 per cent? 1

(A) Haematite (B) Limonite

(C) Magnetite (D) Siderite

2. The Balaghat mines of Madhya Pradesh, the Khetri mines of Rajasthan and the Singhbhum district of Jharkhand are leading producers of 1

(A) copper (B) mica

(C) bauxite (D) manganese

3. The Koderma–Gaya–Hazaribagh belt of Jharkhand is the leading producer of 1

(A) bauxite (B) copper

(C) manganese (D) mica

4. Limestone, found in association with rocks composed of calcium carbonates or calcium and magnesium carbonates, is the basic raw material for the 1

(A) textile industry (B) cement industry

(C) paper industry (D) sugar industry

5. Lignite, a low-grade brown coal, is mined mainly at 1

(A) Jharia (B) Raniganj

(C) Neyveli (D) Bokaro

6. Which of the following is a source of geothermal energy in India? 1

(A) Manikarn in the Parvati valley, Himachal Pradesh (B) Madhapur near Bhuj, Gujarat

(C) Nagarcoil, Tamil Nadu (D) Gulf of Khambhat, Gujarat

7. About 10 kg of which mineral is required to manufacture one tonne of steel? 1

(A) Bauxite (B) Mica

(C) Copper (D) Manganese

8. Monazite sands of Kerala are rich in 1

(A) uranium (B) thorium

(C) copper (D) gold

9. **Assertion (A):** Rat-hole mining is practised in Meghalaya. 1
Reason (R): In Jowai and Cherrapunjee, coal is mined by family members in the form of a long narrow tunnel.

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

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

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

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

10. **Assertion (A):** Conventional sources of energy will last for ever, so there is no need to conserve them. 1
Reason (R): Fossil fuels such as coal, petroleum and natural gas are exhaustible resources.

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

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

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

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

SECTION B

This section comprises 4 very short answer (VSA) type questions of 2 marks each.

11. (a) Distinguish between ferrous and non-ferrous minerals, with two examples of each. 2

OR

(b) How do minerals occur in (i) sedimentary rocks and (ii) igneous and metamorphic rocks? Give examples.

12. Why is aluminium an important metal? Name the main bauxite deposits of India. 2

13. Why is the conservation of minerals necessary? Give two ways to conserve them. 2

14. Name two places in India each known for (i) wind energy and (ii) tidal energy. 2

SECTION C

This section comprises 3 short answer (SA) type questions of 3 marks each.

15. (a) Describe the four types of coal found in India. 3

OR

(b) Describe the occurrence of petroleum and natural gas in India, and the importance of the HVJ pipeline.

16. Describe any three iron ore belts of India. 3

17. Why should we use non-conventional sources of energy? Give three reasons. 3

SECTION D

This section comprises 1 long answer (LA) type questions of 5 marks each.

18. (a) Describe five non-conventional sources of energy in India, giving one place or example of each. 5

OR

(b) Describe five modes of occurrence of minerals, with examples.

SECTION E

This section comprises 2 case study based questions of 4 marks each, with sub-parts of 1, 1 and 2 marks.

19. Coal is the most abundantly available fossil fuel in India and provides a substantial part of the nation's energy needs. It is used for power generation, to supply energy to industry and for domestic needs. India is highly dependent on coal for meeting its commercial energy requirements. In India coal occurs in rock series of two main geological ages, Gondwana and tertiary.

(i) Name the coal that has the highest carbon content and heating capacity. [1]

(ii) Where are the major Gondwana coal fields of India located? [1]

(iii) Where are tertiary coal deposits found, and why is coal mined near the deposits used locally rather than transported? [2]

OR

(iii) Why is metallurgical coal important? Name one major coal field of the Damodar valley. [2]

20. Energy is needed for all activities: to cook, to provide light and heat, to propel vehicles and to drive machinery in industries. Energy can be generated from fuel minerals such as coal, petroleum, natural gas and uranium, and from electricity. Energy resources can be classified as conventional and non-conventional sources.

(i) Name two conventional sources of energy. [1]

(ii) Name one non-conventional source of energy used in rural areas. [1]

(iii) Suggest two ways in which you can conserve energy in your daily life. [2]

OR

(iii) Distinguish between thermal electricity and hydroelectricity, with one example of each. [2]

END OF THE QUESTION PAPER

ANSWER KEY — SECTION A

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
(C)	(A)	(D)	(B)	(C)	(A)	(D)	(B)	(A)	(D)

MARKING SCHEME AND WORKED SOLUTIONS

Marks for each step are shown in brackets, as in the CBSE marking scheme. Any correct alternative method earns full marks.

Q1. Answer (C). Magnetite has up to 70 per cent iron and excellent magnetic qualities, especially valuable in the electrical industry; haematite (50–60 per cent) is the most important industrial iron ore by quantity used.

Q2. Answer (A). Copper, malleable, ductile and a good conductor, is used mainly in electrical cables, electronics and the chemical industries; India is critically deficient in its reserve and production.

Q3. Answer (D). Mica, made up of thin plates, is indispensable in the electric and electronic industries because of its excellent di-electric strength.

Q4. Answer (B). Limestone is the basic raw material for the cement industry and is essential for smelting iron ore in the blast furnace.

Q5. Answer (C). The principal reserves of lignite are in Neyveli, Tamil Nadu; Jharia, Raniganj and Bokaro have Gondwana (bituminous) coal in the Damodar valley.

Q6. Answer (A). Experimental geothermal projects are in the Parvati valley near Manikarn and the Puga valley in Ladakh; Madhapur is solar, Nagarcoil wind and the Gulf of Khambhat tidal.

Q7. Answer (D). Manganese is mainly used in manufacturing steel and ferro-manganese alloy, and also in bleaching powder, insecticides and paints.

Q8. Answer (B). Uranium and thorium are used to generate nuclear power; the monazite sands of Kerala are rich in thorium.

Q9. Answer (A). Both true, and R explains A: in most of the north-east, minerals are owned by individuals or communities, and coal is extracted through such tunnels. Answer (A).

Q10. Answer (D). A is false: conventional sources such as fossil fuels are limited, and their use also causes pollution. R is true. Answer (D).

Q11. (2 marks) Answer: (a) ferrous contain iron (iron ore, manganese); non-ferrous do not (copper, bauxite); (b) beds in sedimentary rocks (coal, gypsum); veins and lodes in igneous rocks (tin, copper).
(a) Ferrous minerals contain iron; they account for about three-fourths of the total value of the production of metallic minerals and provide a strong base for metallurgical industries — e.g. iron ore, manganese, nickel, cobalt. [1]
Non-ferrous minerals do not contain iron — e.g. copper, bauxite, lead, zinc, gold. [1]
OR (b) In sedimentary rocks, minerals occur in beds or layers formed by deposition, accumulation and concentration in horizontal strata — e.g. coal, some iron ore, gypsum, potash salt, sodium salt. [1]
In igneous and metamorphic rocks, minerals occur in cracks, crevices, faults or joints; smaller occurrences are called veins and larger ones lodes — e.g. tin, copper, zinc, lead. [1]

Q12. (2 marks) Answer: Strong yet light, conductive, malleable; Amarkantak, Maikal hills, Bilaspur–Katni, Panchpatmali (Koraput).
Aluminium combines the strength of metals such as iron with extreme lightness, and has good conductivity and great malleability. [1]
India's bauxite deposits are mainly in the Amarkantak plateau, the Maikal hills and the plateau region of Bilaspur–Katni; Odisha is the largest producer, with the Panchpatmali deposits in Koraput district. [1]

Q13. (2 marks) Answer: Finite and slow to form; planned use, better technology, recycling and substitutes.
Minerals are finite and non-renewable; the geological processes of mineral formation are so slow that the rate of replenishment is infinitely small compared with the present rate of consumption. [1]
We should use them in a planned and sustainable manner; improved technologies allow low-grade ores to be used at low costs; recycling of metals, using scrap metals and other substitutes also conserve them. [1]

Q14. (2 marks) Answer: Nagarcoil–Madurai and Jaisalmer; Gulf of Khambhat, Gulf of Kachchh, Sunderbans.
(i) Wind: the largest wind farm cluster is in Tamil Nadu from Nagarcoil to Madurai; Jaisalmer in Rajasthan is also well known (Andhra Pradesh, Karnataka, Gujarat, Kerala, Maharashtra and Lakshadweep also have wind farms). [1]
(ii) Tidal: the Gulf of Khambhat and the Gulf of Kachchh in Gujarat on the western coast, and the Gangetic delta in the Sunderban region of West Bengal. [1]

Q15. (3 marks) Answer: (a) peat, lignite (Neyveli), bituminous and anthracite; (b) petroleum regions; natural gas uses; HVJ pipeline.
(a) Peat: decaying plants in swamps produce peat, which has low carbon and high moisture content and low heating capacity. [1]
Lignite: a low-grade brown coal, soft with high moisture content; the principal reserves are in Neyveli in Tamil Nadu, used for generating electricity. [1]
Bituminous: coal buried deep and subjected to increased temperatures; the most popular coal in commercial use, and metallurgical (high-grade bituminous) coal is used in smelting iron in blast furnaces; anthracite is the highest quality hard coal. [1]
OR (b) Petroleum: most of India's petroleum occurs in anticlines and fault traps in the rock formations of the tertiary age; Mumbai High, Gujarat (Ankeleshwar) and Assam (Digboi, Naharkatia, Moran-Hugrijan) are the main producers. [1]
Natural gas: found with or without petroleum; large reserves have been discovered in the Krishna-Godavari basin; it is used as a fuel in the power sector, as an industrial raw material in fertiliser plants, and as CNG for vehicles. [1]
The 1,700 km long Hazira–Vijaipur–Jagdishpur (HVJ) cross-country gas pipeline links Mumbai High and Bassein with fertiliser, power and industrial complexes in western and northern India. [1]

Q16. (3 marks) Answer: Odisha–Jharkhand; Durg–Bastar–Chandrapur (Bailadila); Ballari–Chitradurga–Chikkamagaluru–Tumakuru (Kudremukh).
Odisha–Jharkhand belt: high-grade haematite is found in the Badampahar mines in the Mayurbhanj and Kendujhar districts of Odisha, and in Gua and Noamundi in Singhbhum, Jharkhand. [1]
Durg–Bastar–Chandrapur belt (Chhattisgarh and Maharashtra): the Bailadila range of hills in Bastar has very high-grade haematite, exported to Japan and South Korea via Visakhapatnam port. [1]
Ballari–Chitradurga–Chikkamagaluru–Tumakuru belt (Karnataka): the Kudremukh mines in the Western Ghats are known to be one of the largest in the world; the ore is transported as slurry by pipeline to a port near Mangaluru. (The Maharashtra–Goa belt has lower-grade ore, exported through Marmagao port.) [1]

Q17. (3 marks) Answer: Fossil fuels limited; energy security and prices; pollution; renewables are clean.
The growing consumption of energy has made the country increasingly dependent on fossil fuels such as coal, oil and gas, which are limited. [1]
Rising prices of oil and gas and their potential shortages have raised uncertainties about the security of future energy supply, with serious effects on the growth of the economy. [1]
Increasing use of fossil fuels also causes serious environmental problems; non-conventional sources such as solar, wind, tidal, geothermal and biogas are renewable and cleaner. [1]

Q18. (5 marks) Answer: (a) nuclear, solar (Madhapur), wind (Nagarcoil), biogas and tidal, geothermal (Manikarn, Puga); (b) veins and lodes; beds; residual (bauxite); placer deposits; ocean waters.

(a) Nuclear energy is obtained by altering the structure of atoms; uranium and thorium are found in Jharkhand and the Aravalli ranges of Rajasthan, and the monazite sands of Kerala are rich in thorium. [1]

Solar energy: India is a tropical country with enormous possibilities; photovoltaic technology converts sunlight directly into electricity; the largest solar plant is at Madhapur near Bhuj, where solar energy is used to sterilise milk cans. [1]

Wind power: India is ranked among the major wind power producers; the largest cluster of wind farms is from Nagarcoil to Madurai in Tamil Nadu, with others in Jaisalmer and elsewhere. [1]

Biogas: shrubs, farm waste and animal and human waste are used to produce biogas; 'gobar gas plants' give energy and improved manure to farmers. Tidal energy: the Gulf of Khambhat, the Gulf of Kachchh and the Sunderbans provide ideal conditions. [1]

Geothermal energy: heat and electricity produced using the heat from the interior of the Earth; experimental projects are in the Parvati valley near Manikarn in Himachal Pradesh and the Puga valley in Ladakh. [1]

OR (b) Minerals are found in different types of rocks; in igneous and metamorphic rocks they occur in veins and lodes (tin, copper, zinc, lead). [1]

In sedimentary rocks they occur in beds or layers (coal, some iron ore, gypsum, potash salt, sodium salt). [1]

Some form by the decomposition of surface rocks and the removal of soluble constituents, leaving a residual mass of weathered material containing ores, such as bauxite. [1]

Some occur as alluvial deposits in the sands of valley floors and the base of hills; these are 'placer deposits' containing minerals not corroded by water, such as gold, silver, tin and platinum. [1]

Ocean waters contain vast quantities of minerals; common salt, magnesium and bromine are largely derived from ocean waters, and ocean beds are rich in manganese nodules. [1]

Q19. (4 marks) Answer: (i) anthracite; (ii) Damodar valley; (iii)(a) north-eastern States; bulky, loses weight, so used near the field; (b) smelting iron; Jharia.

(i) Anthracite. [1]

(ii) In the Damodar valley (West Bengal–Jharkhand) — Jharia, Raniganj, Bokaro; also the Godavari, Mahanadi, Son and Wardha valleys. [1]

(iii)(a) Tertiary coals occur in the north-eastern States of Meghalaya, Assam, Arunachal Pradesh and Nagaland. [1]

Coal is a bulky material that loses weight on use (it is reduced to ash), so heavy industries and thermal power stations are located on or near the coalfields. [1]

OR (iii)(b) Metallurgical coal is high-grade bituminous coal of special value for smelting iron in blast furnaces. [1]

Jharia (or Raniganj or Bokaro). [1]

Q20. (4 marks) Answer: (i) coal, petroleum; (ii) biogas; (iii)(a) public transport, switching off, power-saving devices; (b) hydro (Bhakra Nangal) vs thermal (Singrauli).

(i) Any two: firewood, cattle dung cake, coal, petroleum, natural gas, electricity (hydel and thermal). [1]

(ii) Biogas (gobar gas). [1]

(iii)(a) Use public transport systems instead of individual vehicles, and switch off electricity when not in use. [1]

Use power-saving devices and non-conventional sources of energy, such as solar water heaters. [1]

OR (iii)(b) Hydroelectricity is generated by fast-flowing water, a renewable resource — e.g. Bhakra Nangal, Damodar Valley Corporation, Kopili Hydel Project. [1]

Thermal electricity is generated by using coal, petroleum and natural gas, non-renewable fossil fuels — e.g. thermal power stations such as Singrauli and Ramagundam. [1]

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