Chapter 5 Minerals and Energy Resources Solutions

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Multiple choice questions

(i) Which one of the following minerals is formed by decomposition of rocks, leaving a residual mass of weathered material? (a) coal (b) bauxite (c) gold (d) zinc

► (b) bauxite

(ii) Koderma, in Jharkhand is the leading producer of which one of the following minerals? (a) bauxite (b) mica (c) iron ore (d) copper

► (b) mica

(iii) Minerals are deposited and accumulated in the stratas of which of the following rocks? (a) sedimentary rocks (b) metamorphic rocks (c) igneous rocks (d) none of the above

► (a) sedimentary rocks

(iv) Which one of the following minerals is contained in the Monazite sand? (a) oil (b) uranium (c) thorium (d) coal

► (c) thorium

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2. Answer the following questions in about 30 words.

(i) Distinguish between the following in not more than 30 words.

(a) Ferrous and non-ferrous minerals (b) Conventional and non-conventional sources of energy.
(ii) What is a mineral?
(iii) How are minerals formed in igneous and metamorphic rocks?
(iv) Why do we need to conserve mineral resources?

Answer

(i) (a)

Ferrous minerals	Non-ferrous minerals
Metallic minerals which contain iron are called ferrous minerals, e.g. iron ore, manganese, nickel, cobalt, etc.	Metallic minerals which do not contain iron are called non-ferrous minerals, e.g. copper, bauxite, tin, etc.

(b)

Ferrous minerals	Non-ferrous minerals
Conventional sources of energy are those sources which have been use since the early times.	Non-conventional sources of energy have generally been identified in the recent past.
They are exhaustible except hydro-energy.	They are inexhaustible.
They cause pollution when used as they emit smoke and ash.	Generally these are pollution-free.
Their generation and use involve huge expenditure.	Low expenditure required.
Very expensive to maintain, store, transmit as they are carried over long distances through transmission grids.	Less expensive due to local use and easy maintenance.
Examples are – coal, natural gas, water, fire-wood.	Examples are – geothermal energy, solar energy, wind energy, tidal energy, biogas energy, nuclear energy.

(ii) A mineral is a homogeneous, naturally occurring substance with a definable interior structure.

(iii) In igneous and metamorphic rocks, molten/liquid and gaseous minerals are forced upwards into the cracks. They then solidify and form veins or lodes.

(iv) It takes millions of years for the formation of minerals. Compared to the present rate of consumption, the replenishment rate of minerals is very slow. Hence, mineral resources are finite and non-renewable. Due to this, it is important that we conserve the mineral resources.

3. Answer the following questions.

(i) Describe the distribution of coal in India.

(ii) Why do you think that solar energy has a bright future in India?

Answer

→ The major resources of metallurgical coal belong to the Gondwana age and are located mainly in the north eastern part of the peninsula.

→ Rich reserves of coal are found in the Damodar Valley region in the states of West Bengal and Jharkhand. Raniganj in West Bengal and Jharia and Bokaro in Jharkhand are important coalfields. One third of the total production comes from here.
→ Coal is also found in the Godavari, Mahanadi, Son and Wardha valleys. Korba in Chhattisgarh, Singrauli and Penah-kanhan valley in Madhya Pradesh, Talcher in Orissa, Kamptee and Chandrapur in Maharashtra and Singareni of Andhra Pradesh are important coal mines.
→ Tertiary coal occur in the north eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland.
→ Principal lignite reserves are found in Neyveli in Tamil Nadu.

(ii) Solar energy has a bright future in India because –
→ India being a tropical country receives sunlight in abundance throughout the year.
→ Solar plants can be easily established in rural and remote areas.
→ It will minimize the dependence of rural households on firewood and dunk cakes which in turn will contribute to environmental conservation and adequate supply of manure in agriculture.