Chapter 5 – Minerals and Energy Resources

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Question 1:

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

(ii) Koderma, in Jharkhand is the leading producer of which one of the following minerals?

(a) bauxite

(b) mica

(c) iron ore

(d) copper

(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

(iv) Which one of the following minerals is contained in the Monazite sand?

(a) oil

(b) uranium

(c) thorium

(d) coal

Answer:

(i) (b) bauxite

(ii) (b) mica

(iii) (a) sedimentary rocks

(iv) (c) thorium

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Question 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) Minerals containing iron are called ferrous minerals, e.g., iron ore and manganese. Minerals which do not contain iron are called non-ferrous minerals, e.g., bauxite, lead and gold.

(b) Conventional sources of energy are generally exhaustible and polluting, e.g., firewood, coal and petroleum. Non conventional sources of energy are usually inexhaustible and non-polluting, e.g., solar, wind, tidal and atomic energy.

(ii) A mineral is a homogeneous, naturally occurring substance with a definable interior structure. Minerals are formed by a combination of elements, and the mining of some minerals is very profitable.

(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) Mineral resources need to be conserved because they are limited. It takes billions of years for them to be replenished in nature. Continued extraction of ores leads to increasing costs of extraction and a decrease in quality as well as quantity.

Question 3:

Answer the following questions in about 120 words.

(i) Describe the distribution of coal in India.

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

Answer:

(i) The distribution of coal in India is more abundant on the eastern side of the country. In India, coal occurs in rock series of two main geological ages—Gondwana and tertiary. While Gondwana coal is about 200 million years old, tertiary deposits are approximately 55 million years old. The major resources of Gondwana (metallurgical) coal are located in the Damodar valley (West Bengal, Jharkhand), Jharia, Raniganj and Bokaro. The Godavari, Mahandi, Son and Wardha valleys also contain coal deposits. Tertiary coals occur in the north-eastern states of Meghalaya, Assam, Arunachal Pradesh and Nagaland.

(ii) Being a tropical country, India has an abundance of sunlight. Hence, there are huge possibilities of tapping solar energy. Solar energy is a non-conventional source of energy, but it is gaining popularity in rural and remote areas whose households' dependence on firewood and dung cakes is reduced as a result. This in turn helps in conserving environment and ensuring an adequate supply of manure in agriculture.