

Hots (Higher Order Thinking Skills)

Q. 1. “Minerals are indispensable part of our lives.” Support this statement with suitable examples.[CBSE (F) 2016, CBSE (Comp) 2017]

Ans. Minerals are indispensable part of our lives:

(i) Almost everything we use, from a tiny pin to a towering building or a big ship, all are made from minerals.

(ii) The railway lines and tarmac (paving) of the roads are made from minerals.

(iii) Cars, buses, trains, aeroplanes are manufactured from minerals and run on power resources derived from the earth.

(iv) Even the food that we eat contains minerals.

(v) In all stages of development, human beings have used minerals for their livelihood, decoration, festivities, religions and ceremonial rites.

Q. 2. Which type of minerals has provided a strong base for the development of metallurgical industries in India. Explain with the help of examples.

Ans. (i) Iron ore provides a strong base for the development of metallurgical industries in India. Iron ore is the basic mineral and the backbone of industrial development.

(ii) Manganese is mainly used in the manufacturing of steel and ferro manganese alloy. Nearly 10 kg of manganese is required to manufacture one tonne of steel.

(iii) Aluminium or Bauxite is an important metal because it combines the strength of metals such as iron with extreme lightness and also with good conductivity and great malleability.

(iv) Copper is a good conductor of heat and is therefore used for electric wires. It is also used in metallurgical industry.

Q. 3. “India is fortunate to have fairly rich and varied mineral resources.” Elaborate the statement.

Ans. India is endowed with fairly abundant resources of Iron Ore. Iron ore from the mines of DurgBastar-Chandrapur are exported to Japan and South Korea via Vishakhapatnam Port.

Coal is the most abundantly available fossil fuel. Bituminous coal which is most popular coal in commercial use is abundantly available in India.

By exporting these minerals, India is able to earn foreign exchange.

Mica is also abundantly available in India. Due to its excellent di-electric strength, low power loss factor, insulating properties and resistance to high voltage, mica is one of the most indispensable minerals used in electric and electronic industries.

Q. 4. Which is the basic mineral and is the backbone of industrial development?

Or

What is the status of iron ore in India?

Ans. (i) Iron ore is the basic mineral and is the backbone of Industrial development.

(ii) India is endowed with fairly abundant resources of iron ore.

(iii) India is rich in good quality iron ores.

(iv) Magnetite is the finest ore with a very high content of iron up to 70 per cent. It has excellent magnetic qualities, especially valuable in the electrical industries.

(v) Haematite ore is the most important industrial iron ore in terms of quantity used, but has a slightly lower iron content than magnetite. (50-60 per cent).

Q. 5. Which is the second most important energy resource in India after coal? Mention its two uses along with its deposits in India.

Ans. Petroleum or mineral oil is the second most important energy resource in India after coal.

Two uses:

(i) It provides fuel for heat & lighting, lubricants for machinery and raw materials for a number of manufacturing industries.

(ii) Petroleum refineries act as a 'nodal Industry' for synthetic textile fertiliser and numerous chemical industries.

Deposits of Petroleum:

(i) 63 per cent of India's Petroleum production is from Mumbai High, 18 per cent from Gujarat & 16 per cent from Assam.

(ii) Ankleshwar is the most important offshore field of Gujarat.

(iii) Assam is the oldest oil producing state of India.

(iv) Digboi, Naharkatia and Moran-Hugrijan are the important oil fields in the state.

Q. 6. Distinguish between Biogas and Natural Gas.

Ans.

Bio Gas	Natural Gas
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(i) Biogas is the man made energy resource.	(i) Natural gas is a natural resource.
(ii) It is prepared by using shrubs, farm waste, animal and human waste.	(ii) It is found beneath the earth usually above the oil.
(iii) It is produced for domestic uses.	(iii) It is basically used in Industries as raw material.
(iv) Biogas is the most efficient use of cow dung, farm waste and animal waste.	(iv) Compressed natural gas (CNG) is used as environment friendly fuel and is gaining popularity in India.

Q. 7. ‘Why is there a pressing need to use renewable energy resources in India.’ Explain giving any five reasons. [CBSE (Comptt) 2017]

Ans. (i) The growing consumption of energy has resulted in the country becoming increasingly dependent on fossil fuels such as coal, oil & gas.

(ii) Rising prices of oil and gas and their potential shortages have raised uncertainties about the security of energy supply in future, which in turn has serious repercussions on the growth of the national economy.

(iii) Moreover, increasing use of fossil fuels also causes serious environmental problems.

(iv) Hence, there is a pressing need to use renewable energy sources like solar energy, wind, tidal, biomass and energy from waste material. These are called non-conventional energy resources.

Q. 8. “Energy saved is energy produced.” Justify the statement by giving any six measures to conserve the energy resources. [CBSE (Delhi) 2017]

Ans. We have to adopt a cautious approach for the judicious use of our limited energy resources.

As concerned citizens, we can do our bit by:

(i) Using public transport systems instead of individual vehicles.

(ii) Switching off electricity when not in use.

(iii) Using power saving devices like stars appearing in electronic industries.

(iv) Using CNG as fuel which is environmental friendly.

(v) Increased use of renewable energy.

(vi) Using of biogas for domestic consumption in the rural areas.

(vii) Using non-conventional sources of energy.

Q. 9. Why is Conservation of mineral resources essential? Explain any three methods to conserve them. [CBSE 2015]

OR

Why is it necessary to conserve mineral resources? Explain any four ways to conserve mineral resources. [CBSE (AI) 2017]

Ans. Need for conservation of Minerals:

- (i)** We are rapidly consuming mineral resources that require millions of years to be created and concentrated.
- (ii)** The geological processes of mineral formation are so slow that the rates of replenishment are infinitely small in comparison to its consumption.
- (iii)** Continued extraction of ores leads to increasing costs as minerals extraction comes from greater depths along with decrease in quality.
- (iv)** Most of the minerals are unevenly distributed on the Earth's surface.

Mineral resources are therefore finite and non-renewable.

Three methods to conserve Minerals:

- (i)** We must make use of minerals in a planned and sustainable manner.
- (ii)** Improved technologies need to be constantly evolved to allow the use of low grade ores at low cost.
- (iii)** Recycling of metals.
- (iv)** Using scrap metals and other substitutes are steps in conserving ore mineral resources for the future.