

Lesson No. 4

Minerals & Energy Resources

Summary :

I. Mode of occurrence of Mineral :

Where are these minerals found.

Minerals are usually found in “Ores”. The term ore is described as accumulation of any mineral mixed with other elements, it should have sufficient concentration to make its extraction viable. The type of formation or structure in which they are found determines their relative ease of mining and cost of extraction.

Minerals Generally Occur in These forms :

- (i) In igneous and metamorphic rocks minerals may occur in the cracks, crevices, faults or joints. The smaller occurrences are called vein and the larger are called lodes. They are formed when minerals in liquid / molten & gaseous forms are forced upwards through cavities towards earth's surface. They cool and solidify as they rise. They include tin, copper, Zinc, lead etc.
- (ii) **Sedimentary Rocks** : No. of minerals occur in beds and layers. They have been formed as a result of deposition, accumulation and concentration. of horizontal strata eg Gypsum, potash salt & sodium salt. They are formed as a result of evaporation in arid region.
- (iii) **Decomposition of Surface Rocks** : Involves the removal of soluble constituents, leaving a residual mass of weathered material containing ores eg. Bauxite.
- (iv) **Alluvial Deposits** : Occur in sands of valley floors and the base of hills. These are called 'Placer deposits ' and are not corroded by water eg gold, silver, tin platinum.
- (v) Ocean waters contain vast quantities of minerals but most of these are too widely diffused to be of economic significance, however common salt, magnesium & bromine are largely derived.

II. Major Iron Ore Belts in India :

1. **Orissa Jharkand Belt** : In Orissa high grade hematite ore is found in Badampahar mines in the Mayurbhanj and Kendujhar. In Jharkand haematite iron ore is mined in Gua and Noamundi.
2. **Durg - Bastar - Chandrapur belt** : Lies in chattisgarh and Maharashtra high grade hematitis are found in Bailadila range of hills in Chatisgarh.

3. **Bellary Chitradurga - Chikmagalur - Tumkur Belt :** In Karnataka has large reserves of iron ore. Kudremukh mines located in western Ghats of Karnataka and known to be one of the largest.
4. **Maharashtra- Goa Belt :** Includes state of Goa and Ratnagir district of Maharashtra. Although ores are not of very high quality yet they are efficiently exploited.

III. Conservation of Energy Resources :

Energy is a basic requirement for economic development. Every sector of national economy agriculture, industry, transport, commercial and domestic needs inputs of energy. There is an urgent need to develop a sustainable path of energy development. India is presently one of the least energy efficient countries in the world. We have to adopt a caution approach for judicious use.

- Using public transport instead of individual.
- Switching of electricity when not in use.
- Using power saving devices.
- Using non conventional sources of power.

Answer the following questions :

1. Which minerals are formed by decomposition of rocks, leaving a residual mass of weathered material.
2. Minerals are deposited and accumulated in the stratas of which rocks?
3. Which mineral is contained in Monasite sand?
4. How are minerals formed in igneous & metamorphic rocks.?
5. Why do we need to conserve energy resources?
6. Explain the distribution of coal in India?
7. Explain the distribution of iron in India?