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## Chapter – 03 Geography

### Minerals and Power Resources

- Minerals are naturally occurring substances that have a definite chemical composition.
  - Minerals are formed in different types of geological environments, under varying conditions.
  - Minerals can be identified on the basis of their physical properties such as colour, density, hardness and chemical property such as solubility.
  - **Types of Minerals:**
    - (i) On the basis of composition, minerals are classified into metallic and non-metallic types.
    - (ii) Metallic minerals contain metals in raw form.
    - (iii) Metals are hard substances that conduct heat and electricity and have lustre or shine. For example, iron ore and bauxite.
    - (iv) Metallic minerals are of two types: (a) Ferrous and (b) Non-ferrous.
    - (v) Ferrous minerals contain iron ore, manganese and chromites.
    - (vi) Non-ferrous minerals do not contain iron but may contain some other metals like gold, silver, copper or lead.
    - (vii) Non-metallic minerals do not contain metals. For example, limestone, mica, gypsum, coal and petroleum.
    - (viii) Mining, drilling and quarrying are the three extraction methods of minerals.
    - (ix) Mining is the process of taking out minerals from rocks buried under the earth's surface.
    - (x) The process of mining includes two methods: (a) Open cast mining, (b) Shaft mining
    - (xi) Deep wells are bored to take minerals out and this process is called drilling.
    - (xii) In the process of quarrying, minerals that lie near the surface are simply dug out.
  - **Distribution of Minerals:**
    - (i) Minerals are found in igneous rock, metamorphic rocks and sedimentary rocks.
    - (ii) Iron ore, nickel, copper minerals are found in igneous and metamorphic rocks.
    - (iii) Limestone is found in sedimentary rocks.
  - **Uses of Minerals:**
    - (i) Some minerals which are usually hard are used as gems for making jewellery.
    - (ii) Copper is used in almost everything from coins to pipes.
    - (iii) Silicon is used in almost everything from coins to pipes.
    - (iv) Silicon is used in the computer industry which is obtained from quartz.
    - (v) Aluminium is used in automobile, airplanes, bottling industry, building and in kitchen cookware.
  - **Conservation of Minerals:**
    - (i) Minerals are the non-renewable resources.
    - (ii) It is necessary to reduce wastage in process of mining.
    - (iii) Recycling of metals is the way to conserve mineral resources.
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- **Power Resources:**

- (i) Power resources are of two types: (a) Conventional Resources, (b) Non-conventional Resources
- (ii) We need power resources for industry, agriculture, transport, communication and defence.

- **Conventional Sources of Minerals:**

- (i) The energy resources which have been in common use for a long time are known as conventional sources.
- (ii) Firewood and fossil fuels are two main conventional energy sources.

- **Non-Conventional Sources of Minerals:**

- (i) Non-conventional sources of energy are renewable.
  - (ii) Solar energy, wind energy, tidal energy, etc. are non-conventional sources of energy.
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