## Chapter - 03
## 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.
- Minerals are distributed in rocks and sea bed also.
- Tropical regions are very rich in terms of mineral resources.

**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. Most of the Iron and steel industries and heavy industries depends on this mineral.
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.
xiii. Mineral based industries are the backbone of industrial development of a naion.
xiv. Mining needs cheep labour and resources to extract it off.

**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.
iv. Plateau region of India such as Daccan and chota nagpur plateau provides the rich level of mineral distribution.

**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.
vi. Mica is used to make electrical appliances and glass making industries.
vii. Iron and steel is used in every indurstry.

**Distribution of Minerals in India:**

i. Iron: Jharkhand, Odisha and Chattisgarh
ii. Bauxite: Jharkhand, Odisha and Chattisgarh
iii. Mica: India is the leading producer of mica in the world. Jharkhand, Bihar, Andhra Pradesh are major producing states.
iv. Gold: Kolar in Karnataka

**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.
iv. over exploitation is harmful for environment as well.

· **Power Resources:**

i. Power resources are of two types: (a) Conventional Resources, (b) Non-conventional

Resources

ii. We need power resources for industry,domastic use, 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.
iii. Fossil fuels comprises of Coal( known as burried sunshine), Patroleum (known as black gold), Natural Gas and Hydroelectricity.

**Non-Conventional Sources of Minerals:**

i. Non-conventional sources of energy are renewable in nature.
ii. Solar energy, wind energy, tidal energy, etc. are the examples of non-conventional sources of energy.
iii. They are more expensive as it needs technological upgradation.
iv. India has a great potential for Solar energy.