

Minerals and Energy Resources

Mineral

A Mineral is a natural substance of organic or inorganic origin with definite chemical and physical properties. On the basis of chemical and physical properties of minerals, they can be classified into three main categories and they are:

- (i) **Metallic Minerals** such as iron, manganese, copper, lead etc.
- (ii) **Non-Metallic Minerals** such as graphite, phosphate, mica etc.
- (iii) **Energy Minerals** such as coal, petroleum and natural gas.

Distribution of Important Minerals in India

- Minerals provide necessary base for industrial development of any country. India is endowed with a rich variety of mineral resources due to its varied geological structure but their distribution is highly uneven.
- Plateau regions of India such as the Deccan and Chottanagpur plateaus have a rich mineral distribution.

Minerals	Distribution	Highest Producing State
1. Coal	W.B, Jharkhand, Odisha, M.P and Chhattisgarh	Jharkhand
2. Copper	M.P, Rajasthan, Jharkhand and Karnataka	Madhya Pradesh (M.P)
3. Iron	Karnataka, Chhattisgarh, Jharkhand and Odisha	Odisha
4. Manganese	Odisha, Maharashtra, M.P, Karnataka, Andhra Pradesh	Odisha
5. Mica	Jharkhand, Andhra Pradesh and Rajasthan	Andhra Pradesh
6. Gold	Karnataka and Andhra Pradesh	Karnataka
7. Diamond	Panna (M.P) and Banda (U.P)	Madhya Pradesh
8. Limestone	Andhra Pradesh, Rajasthan, M.P, Gujarat and Chhattisgarh	Andhra Pradesh

Uses and Conservation of Minerals

- Hard minerals are used as gems for making jewellery. Copper is used in a variety of items like coins, wires, pipes etc.
- Silicon, which is obtained from the mineral quartz, is used in the electronics and computer industries.

- Bauxite is refined to produce aluminium, which is used in automobiles, aircraft, electrical industry, buildings and in cookware.
- Mica is used to make electrical appliances and glass.
- Steel, which is obtained from iron ore, is used in every industry
- Minerals are the non-renewable resources. Thus, over exploitation of minerals is harmful for environment. Further, it is necessary to reduce wastage in the process of mining minerals. Recycling of metals is another way to conserve mineral resources.

Energy Resources

Energy plays a vital role in our lives. We need energy resources for industry, domestic use, agriculture, transport, communication and defence. Energy resources are of two types:

1. Conventional Sources

- These are energy resources which have been in common use for a long time.
- Firewood and fossil fuels are two major conventional energy sources.
- Fossil fuels include coal (also known as buried sunshine), petroleum (also known as black gold) and natural gas.
- Hydroelectricity is electricity generated by river water falling from a height through a dam.

Energy Resources	Distribution	Highest Producing State
Crude Oil/Petroleum	Maharashtra, Rajasthan, Asom, U.P	Maharashtra (Mumbai High)
Natural Gas	K.G. Basin, Asom, Gulf of Khambhat, Tamil Nadu and Rajasthan	Asom
Coal	Raniganj , Jharia , Dhanbad and Bokaro in Jharkhand	Jharkhand

2. Non-conventional Sources

- These sources of energy are renewable in nature.
- Solar energy, wind energy, biogas, tidal energy, geothermal energy and nuclear energy are example of non-conventional sources of energy.
- They are usually more expensive than conventional sources because they need technological upgradation.
- India has a great potential for solar energy.

Types of Energy	Power Plants	States
Wind Energy	Muppandal	Tamil Nadu
	Perungudi	Tamil Nadu
	Kayattar	Tamil Nadu
	Satara	Maharashtra
	Jogimati	Karnataka
	Lamba,Mandvi	Gujarat
Geothermal Energy	Manikaran	Himachal Pradesh
	Puga Valley	Jammu and Kashmir
	Tattapani	Chhattisgarh
Tidal Energy	Gulf of Khambat	Gujarat
	Gulf of Kachchh	Gujarat
	Sunderban	West Bengal
Wave Energy	Vizhinjam	Kerala
Solar Energy	Tirupati	Andhra Pradesh



Practice Exercise

1. On the basis of chemical and physical properties, minerals can be divided into following category. Choose appropriate option?
(a) Organic and Inorganic
(b) Metallic, Non-Metallic and Energy
(c) Metallic and Energy
(d) None of the above
2. Which of the following is the example of energy minerals?
(a) Iron (b) Copper
(c) Lead (d) Petroleum
3. Which of the following region of India is minerally rich?
(a) Jammu region
(b) Asom
(c) North Bihar
(d) Deccan and Chottanagpur region
4. Which state has highest reserve of Coal in India?
(a) Jharkhand (b) Karnataka
(c) West Bengal (d) Rajasthan
5. Which of the following state is the leading producer of copper in India?
(a) UP (b) MP
(c) Odisha (d) Gujarat
6. Silicon, which is obtained from the mineral quartz, is used in which of the following industries?
(a) Plastic (b) Electronics
(c) Chemical (d) Infrastructure
7. Which of the following mineral is used to make glass?
(a) Steel
(b) Bauxite
(c) Mica
(d) Cement
8. The energy resources which have been in common use for a long time are known as
(a) Conventional sources
(b) Non-conventional
(c) Energy resources
(d) Mineral resources
9. Which of the following resources is also known as 'Black Gold'?
(a) Petroleum (b) Coal
(c) Mica (d) Silver
10. 'Buried Sunshine' is the name given to which of the following resource?
(a) Natural Gas (b) Coal
(c) Water (d) Petroleum
11. Which of the following state has maximum potential for the wind energy in India?
(a) Tamil Nadu (b) Jharkhand
(c) Asom (d) West Bengal
12. In which of the following states geothermal energy plant is located in India?
(a) Himachal Pradesh (b) Bihar
(c) Karnataka (d) Jharkhand
13. Which state has maximum potential for tidal energy in India?
(a) Gujarat (b) Maharashtra
(c) Odisha (d) Kerala
14. Which one of the following is the example of conventional source of power?
(a) Solar energy (b) Geothermal energy
(c) Nuclear energy (d) Firewood and fossil fuels
15. Which amongst the following state is highest producer of crude oil and petroleum?
(a) Digboi, Asom
(b) Rajasthan
(c) Mumbai High (Maharashtra)
(d) Uttar Pradesh

Answers

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