

## **CHAPTER 5:- COAL AND PETROLEUM**

- **Natural resources are classified into two types:**

**Inexhaustible Natural Resources:-** These sources present in unlimited quantity in nature and are not likely to be exhausted by human activities are called inexhaustible natural resources. Examples are sunlight, air.

**Exhaustible Natural Resources:-** These natural resources are present in limited amount and can be exhausted by human activities. Examples are forests, wildlife, minerals, coal, petroleum, natural gas etc.

Fossil fuels: fuels formed from the dead remains of living organisms (fossils) are called as

### **COAL:**

- It is hard black in color.
- It is useful in cooking food, steam engines, thermal power plants and as fuel.

### **FORMATION OF COAL:**

In the olden times earth had dense forest cover in low lying wetland areas. Due to flooding, these forests got buried under the soil. Over the years as more soil deposited over them, compression took place. The temperature also rose as they sank deeper inside the earth. Under high pressure and high temperature, dead plants got slowly converted to coal.

### **CARBONISATION:**

It is a slow process of conversion of dead vegetation into coal.

- Heating coal in presence of air produces carbon dioxide.
- Coal is processed in industry to get some useful products such as

**1) Coke:** a tough, porous and black substance, in pure form of carbon is called coke. Coke is used in the manufacture of steel and in extraction of many metals.

**2) Coal tar:** A black, thick liquid with an unpleasant smell is called tar. Products obtained from coal tar are used in manufacturing of various substances like synthetic dyes, drugs, explosives, perfumes, plastics, paints, photographic materials, roofing materials, etc.

**3) Coal gas:** the gas obtained during the processing of coal to get coke is coal gas. It is used as a fuel in many industries situated near the coal processing plants.

## **PETROLEUM:**

- The word petroleum is derived from 'Petra' meaning rock and 'oleum' meaning oil. It is mined from between the rocks under Earth.
- It is used as fuel

**FORMATION OF PETROLEUM:** Petroleum was formed from organisms living in the sea. As these organisms died, their bodies settled at the bottom of the sea and got covered with layers of sand and clay. Over millions of years, absence of air, high temperature and high pressure transformed the dead organisms into petroleum and natural gas.

**REFINING PETROLEUM:** Petroleum is a dark oily liquid, has an unpleasant odor. It has various constituents such as petroleum gas, petrol, diesel, lubricating oil, paraffin wax, etc.

The process of separation of constituents/fractions of petroleum is known as refining. It is carried out in a petroleum refinery.

## **PETROLEUM PRODUCTS AND USES:**

- Petroleum Gas is used in Liquid form Fuel for home and industry
- Petrol is used as Motor fuel, aviation fuel, solvent for dry cleaning
- Kerosene is used as Fuel for stoves, lamps and for jet aircrafts
- Diesel is a Fuel for heavy motor vehicles, electric generators
- Lubricating oil is used for Lubrication purpose.
- Paraffin wax is used as Ointments, making candles and Vaseline etc.
- Bitumen is used to manufacture Paints and also used in road surfacing.

## **Natural gas:**

- It is an important fossil fuel as it is easy to transport through pipes.
- Natural gas is stored under high pressure as compressed natural gas (CNG).
- CNG is used for power generation, fuel for transport vehicles because it is less polluting and is a cleaner fuel.
- Natural gas is also used for the manufacture of a number of chemicals and fertilizers.

### **Petroleum Conservation Research Association (PCRA)**

**The PCRA advises people how to save petrol/diesel while driving using following strategies:**

- Drive at a constant and moderate speed.
- Switch off the engine at traffic lights.
- Ensure correct tire pressure and regular maintenance of the vehicle.