

## Coal and Petroleum

- A. 1. Diesel, Kerosene; 2. L.P.G., C.N.G.
- B. 1. (c); 2. (d); 3. (b); 4. (d)
- C. 1. coke; 2. coaltar; 3. coal gas
- D. 1. False; 2. False; 3. True; 4. False
- E. 1. Petroleum; 2. Coal; 3. Coal distillation; 4. Methane
- F. 1. Coal is one of the earliest used fossil fuels. It is hard and black in colour. It is found in deep mines, beneath the surface of earth and is extracted by mining.
2. Uses of Coal tar :
- As a raw material for many dyes.
  - As a water proofing, and insulating material for buildings and for surfacing of roads.
  - In making paints, explosives, perfumes, plastics etc.
3. Petroleum is found trapped in underground rocks. This is why, it is called petroleum. Because of its importance in today's world it is referred as black gold.
4. Fuels like coal, natural gas and petroleum formed by the decomposition of animals and plants are called fossil fuels.
- G. 1. Even long before the dinosaurs lived on this Earth, most of the Earth was just oceans with tiny sea organisms, called the phytoplankton. With the passage of time these organisms died and sank to the bottom of the sea and slowly got covered with silt and sand. The sand and sediments formed impervious sedimentary rocks. Pressure due to the weight of these rocks and heat of the Earth converted the dead plants and animals into petroleum.
2. Over long periods of time they make up, the Earth's surface is changed and seas and great rivers caused deposits of sand, clay and other mineral matter to accumulate burying the peat. Increasing deeper burial and the heat associated with it gradually changed the material to coal.
- Uses of coal :
- Used as fuels for cooking in chulhas.
  - Used in many industries to produce organic compounds.
  - Used in thermal power plants to produce electricity.
3. Now-a-days consumption of natural gas increasing due to :
- Easy transportation through pipelines directly to the site where it to be used.

- Its used as a raw material for the manufacture of fertilisers and a number of chemicals.
- It has less polluting characteristics.

4. PCRA (Petroleum Conservation Research Association) advises people how to save fuel :
- Avoid fast start and sudden braking automobiles.
  - Try to follow the 4R's principles – Reuse, Reduce, Recycle, Recover.
  - Use public transport wherever you can or form a car pool for everyday travel.
  - Switch off engine at traffic lights where you have to wait for longer durations.
- H. 1. Inexhaustible natural resources : Those natural resources which are abundance in nature are called inexhaustible resources.
- Exhaustible natural resources : Those natural resources which are limited in nature are called exhaustible natural resources.
2. Renewable resources : Those resources which are replenished called renewable resources.
- Non-renewable resources : Those resources which are not replenished called non-renewable resources.

## Combustion and Flame

- A. 1. Petrol, C.N.G; 2. Carbon dioxide, Foam type
- B. 1. (d); 2. (c); 3. (a); 4. (a)
- C. 1. Rapid combustion; 2. Ignition temperature; 3. Renewable; 4. CO<sub>2</sub>; 5. blue
- D. 1. True; 2. False; 3. False; 4. True; 5. True
- E. 1. The minimum temperature at which a fuel catches fire is called Ignition temperature.
2. The process of burning fuels in presence of oxygen is called combustion.
3. Conditions necessary for burning of a substance are as follows:
- Presence of a combustible substance.
  - Presence of a supporter of combustion.
  - Attainment of ignition temperature.
4. When water is thrown on the fire, it cools the combustible substance below its ignition temperatures and this prevents the fire from spreading.
- F. 1. At airport and petrol pumps, the fire extinguisher which is based o the principle of smothering the fire is used. These fire extinguishers are called hydrocarbon fire extinguishers. Example, sodium bicarbonate fire extinguisher.