# Combustion

**Exercise 57:**

**Solution 1(a):**

A bright white flame/light is seen when a magnesium strip is placed over the flame of a lighted candle. This happens because magnesium reacts with oxygen.

**Exercise 58:**

**Solution 1(a):**

1. Straw from a broom: Burns
2. Match stick: Burns
3. Paper: Burns
4. Card board: Burns
5. Nail: Does not burn
6. Straw: Burns
7. Glass: Does not burn
8. Stone: Does not burn

**Solution 1(b):**

Combustible substances:
Methanol, Cotton, Biogas, Wood, Charcoal.
Non-combustible substances:
Carbon dioxide, Stone, Portland cement, Glass, Water.

**Exercise 59:**

**Solution 1(a)**

Order of burning time for the candle with respect to the given cases, is as follows:
**Case III > Case I > Case II**
Oxygen is one of the important factors in combustion. Candle will burn till it gets supply of

oxygen. In **Case III,** there is continuous supply of oxygen; in**Case I,** the water present at the bottom provides some oxygen apart from the oxygen present in the bottle; plus, there is an outlet for carbon dioxide; in **Case II,** thelid of the bottle is closed; so, carbon dioxide has no outlet due to which the candle goes off early as compare to **Case III** and **Case I.**

**Exercise 60:**

**Solution 1(a)**

Wood will take more time as compare to paper. For combustion of any substance that substance should attain a definite temperature which is higher for wood so, it takes time to burn.

**Exercise 61:**

**Solution 1(a):**

A substance catches fire at a definite temperature which is known as ignition point. If the temperature of a paper cup does not reach till its ignition point, it won't start burning. It will burn when paper cup reaches its ignition temperature.

**Exercise 64:**

**Solution 1(a):**

Yes, the substance burns with a blue flame during complete combustion and it burns with a yellow flame during incomplete combustion.

**Solution 1(b):**

Three parts are visible which are as follows:

1. The outermost zone which has blue flame.
2. The middle zone which has yellow flame.
3. The innermost zone which is black.

**Exercise 65:**

**Solution 2:**

Water is a good conductor of electricity. The person gets electric shock when it comes in contact with the water which is used to extinguish fire. Due to this reason, water is not used to put off the fire caused due to electricity.

**Solution 3:**

L.N.G/P.N.G are better due to following reasons:

1. L.N.G/P.N.G is a clean fuel (comparable with biogas); it releases less pollutants than any other fuel thus, protecting the health of women and children.
2. L.N.G/P.N.G gives off lower green house gas emissions than alternatives.
3. L.N.G/P.N.G is easy to light and provides instant heat after lighting.

- L.N.G/P.N.G cooks fast, is convenient to use, easy to store and transport.

**Solution 4:**

First of all, we will contact a fire brigade as soon as possible. Then, we will try to find out the reason due to which the fire had broken out i.e. whether it is due to electricity, due to oil, or some other reason. According to that, we will decide our action i.e. whether to use water or fire extinguisher or sand or blanket.

**Solution 5:**

We can find fire extinguishers at various offices, at corridors and stairways of a building, in kitchens and garages, in laboratories, in warehouses.

**Solution 6:**

Through these holes warm air is introduced into lantern / primus /gas stove.