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STUDY MATERIAL SCIENCE CLASS-VIII

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► 6. Combustion

Flame of a candle :

- ✧ The outermost layer is almost colourless or blue in colour and is the hottest zone of the flame where complete combustion of wax vapour takes place.
- ✧ The second layer is cooler and is the area where the combustion is incomplete. It is in this layer that hot carbon particles glow and give off light.
- ✧ The innermost layer the area immediately around the wick, the coolest and contains unburnt wax vapours.
- ✧ If a candle flame could be cut horizontally, concentric circles marking the different zones are seen.

The presence of wax vapour in the flame can be easily tested by inserting a glass tube into the flame so that its bottom end gets close to the wick. If a lighted matchstick is brought near the top end of the glass tube, it lights up and produces a flame, as the wax vapours that come up through the tube are burnt.

Similarly, the presence of carbon particles in the flame can be demonstrated by holding a small piece of a glass pane horizontally over the flame such that it touches the luminous part of the flame. When the glass pane is removed after a few seconds, a black ring formed by carbon deposits (soot) can be seen on it.