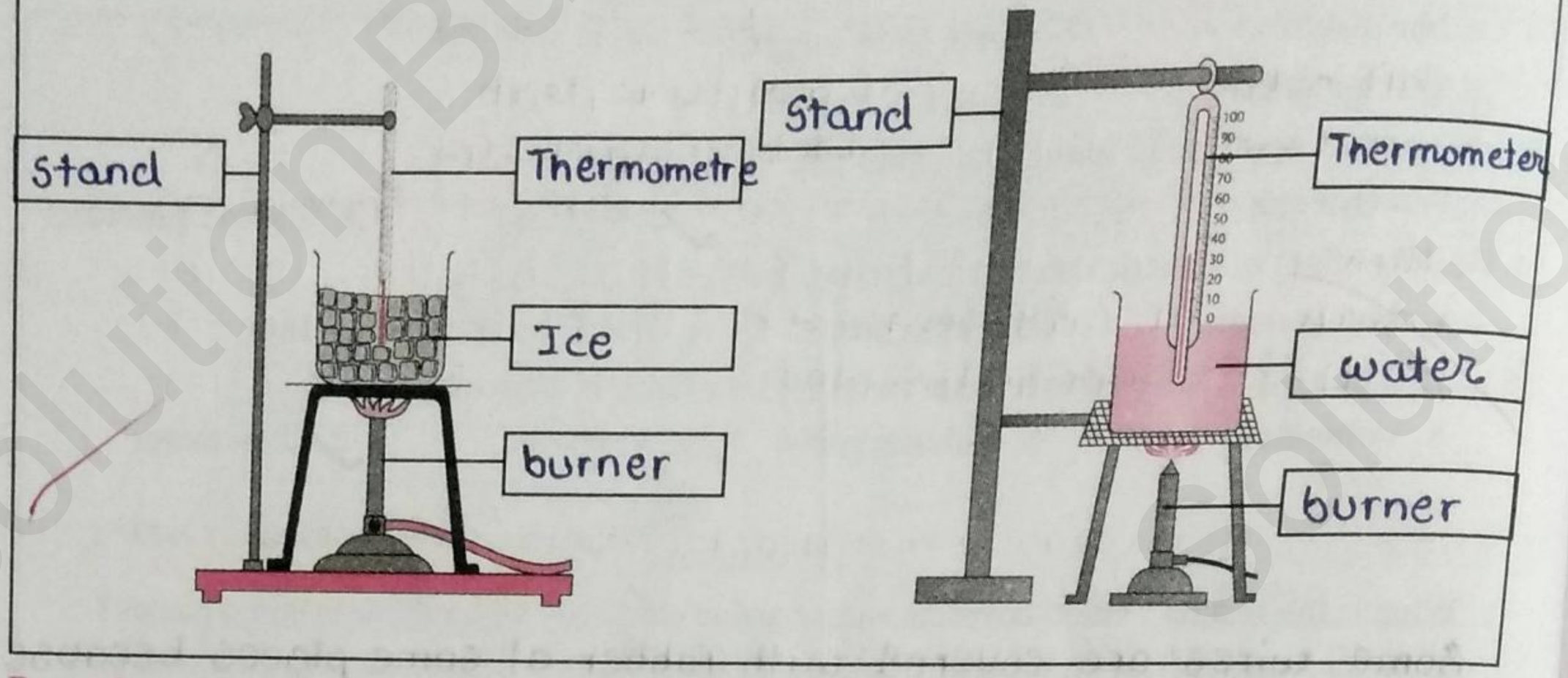
Practical No. 5

Aim : To study the effect of heat on ice by using a graph.

Apparatus : Glass beaker, ice, thermometer, stand, tripod stand, spirit lamp or burner.

Figure : (Label the following diagram.)



Procedure :

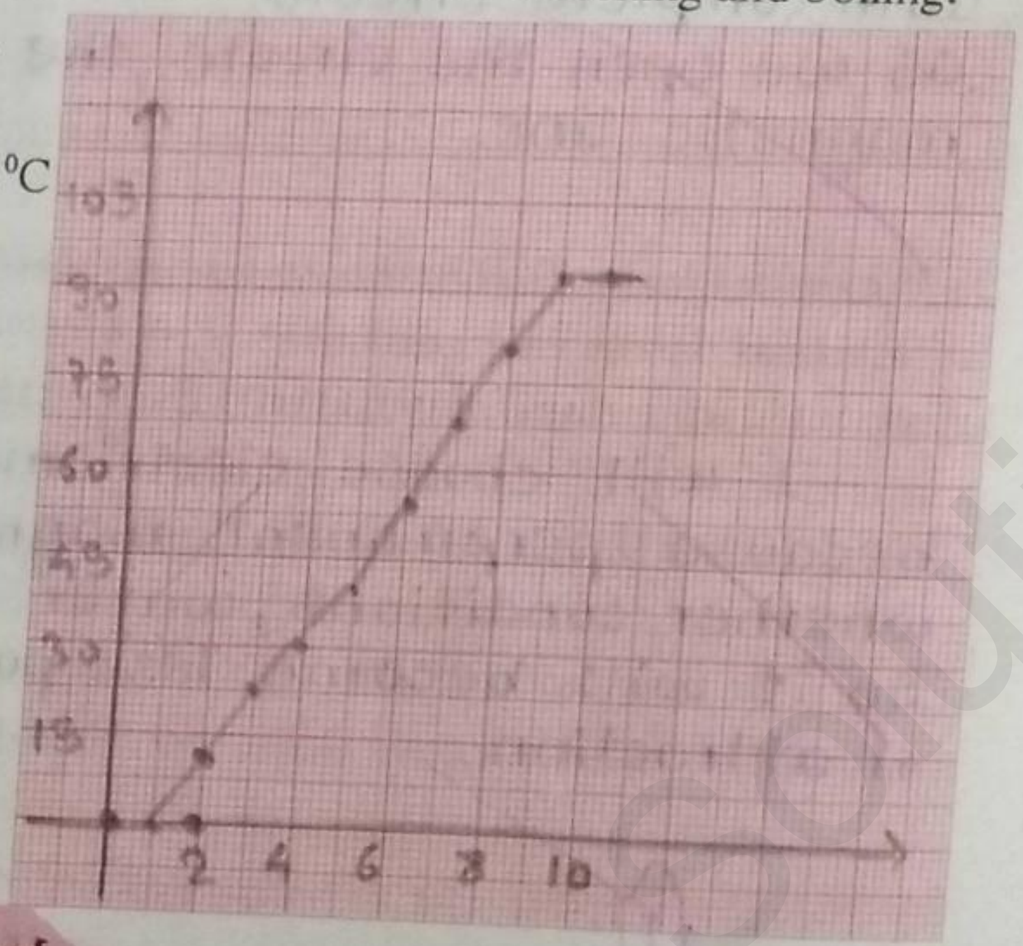
1. Take a few pieces of ice in a glass beaker.
2. Keep beaker on tripod stand and put it on the stand.
3. Attach a thermometer on the stand in such a way that the thermometer bulb will completely dip in the ice.
4. Measure the temperature of ice.
5. Arrange the apparatus as shown in figure.
6. Heat the ice using a burner or spirit lamp.
7. Record the temperature using the thermometer after every minute.
8. Continue the heating and recording temperature even after ice starts melting and boiling.
9. Draw a graph of temperature versus time.

Observation :

1. Least count of thermometer = ...0..... ^0C

Observation table :

Time	Temp ^0C	Time	Temp ^0C
0	0	5	42
1	0	6	56
2	10	7	72
3	21	8	81
4	30	9	92



Inference / Conclusion :

1. Heat energy is absorbed during the transformation of ice in to water and water in to vapours.

The heat energy absorbed during transformation of fice and water into vapours is latent heat of fussion and vaporization

Multiple Choice Questions

1. Which of the following conditions are observed when heat is supplied to the substance?

a. Solid + Liquid, Liquid
b. Solid + Liquid, Liquid, Gas
c. Solid + Gas
d. Solid + Gas, Liquid, Gas

2. 'Latent heat is evovled during the transformation of liquids into solids.' How will you explain this statement?

a. Heat released and temperature decreases.
b. Heat absorbed and temperature increases.
c. Heat does not absorbed nor released.
d. Not sure.

3. In above experiment, what will be the maximum rise in temperature of water after melting of ice?

a. 27 °C b. 0 °C c. 4 °C d. 100 °C

4. The increase in temperature of water above its boiling point in the pressure cooker is due to change in .....

a. pressure b. volume c. mass d. all of these

5. The temperature of ice can be decreased below 0 °C by mixing ..... in it.

a. saw dust b. sand c. salt d. coal

: Exercise :

1. What could be explained from the straight horizontal line observed at the begining and end of the graph?

when any object is heated afrom its temprature 0°c then, for somewhile it is maintened at 0°c and then its is grow at straight line and stop at 100°c for some time. This maintained temprature is because of its change in state. for the change in state., it is maintened for sometime.

2. How could latent heat be explained from the graph? Explain in detail.

At the begining the temprature is statable for some time because of lateral fussion of latent heat and at last (in 100°c) it is stable because of latent heat of vapourization. this things can be explained from graph.

Remark and Signature