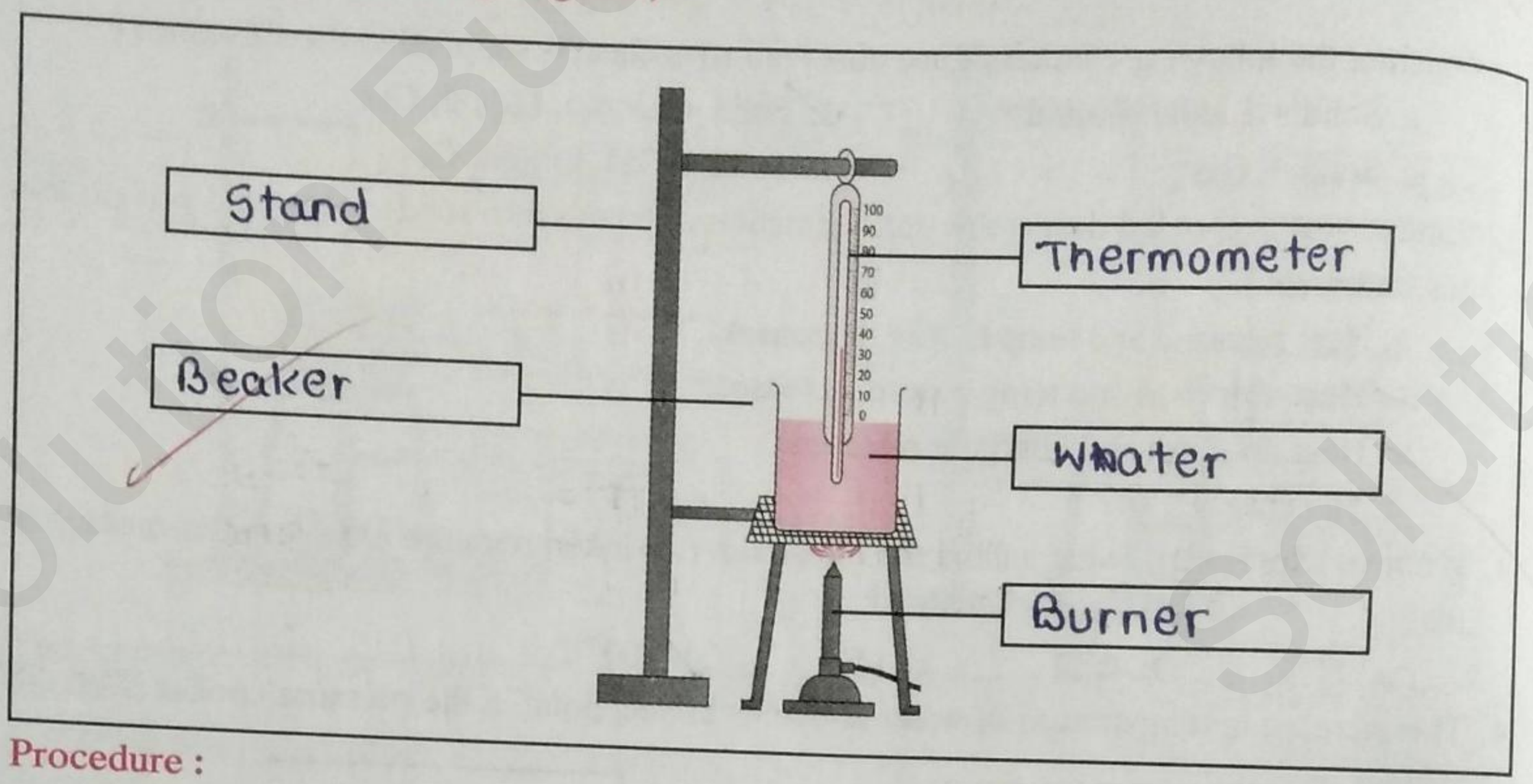
Practical No. 6

Aim : To measure temperature of hot water during natural cooling and plot the graph of temperature versus time.

Apparatus : A 250 ml glass beaker, thermometer with gradation from 0^0 C to 100^0 C, a clock, etc.

Figure : (Label the following diagram.)



Procedure :

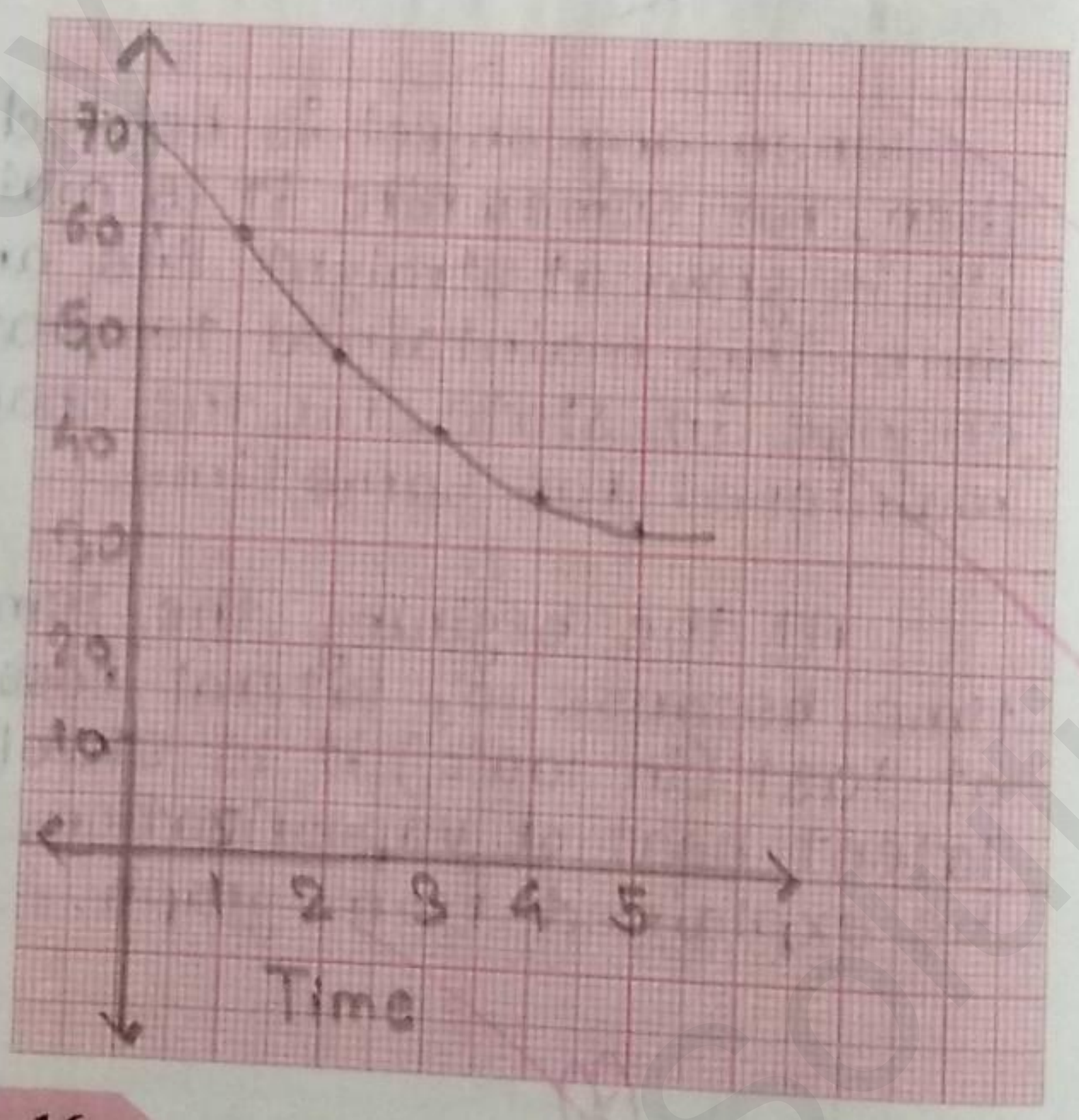
1. Heat the water in the beaker up to 100 ^{0}C.
2. Put off the burner.
3. When the water reaches 70 ^{0}C, start measuring the temperature after every minute.
4. Measure the temperature till the water reaches ambient temperature.
5. Plot the graph of temperature versus time (in mins.).

Observation :

1. Initial temperature of water before heating = ...70°..... ^{0}C

2. Observation Table

Time (mins)	Temperature (^{0}C)
0	70°
1	60°
2	48°
3	41°
4	36°
5	33°



Conclusion / Inference :

1. The rate of cooling of water is ~~minimum~~ higher when the difference in the temperature of water and the ambience is large.
2. This rate reduce as the temperature of water reduces due to cooling.

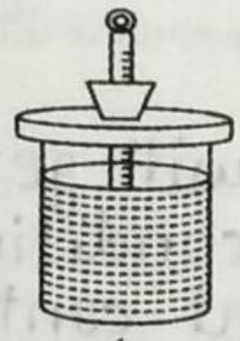
Precautions :

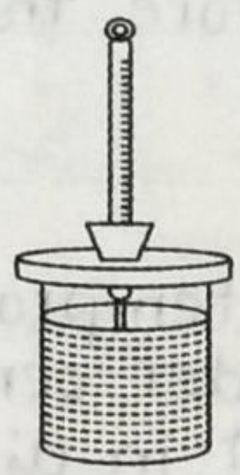
1. Switch off the ceiling fans in the laboratory before the observations.
2. Let the clock run continuously while cooling, do not stop it.

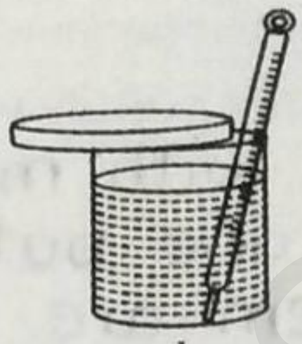
Multiple Choice Questions

1. Out of the following, ...C..... is the proper method for measuring the temperature of water.

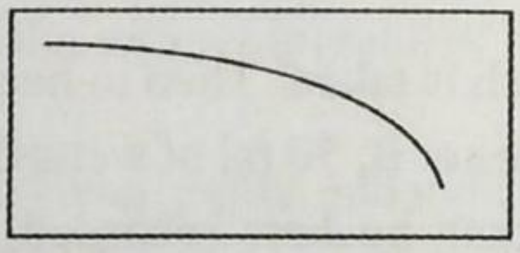

a.

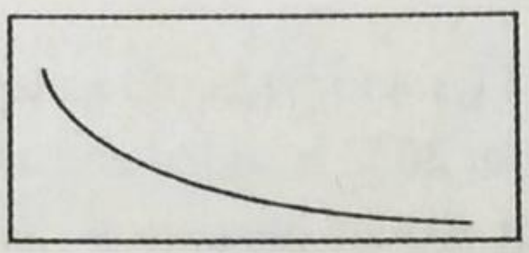

b.

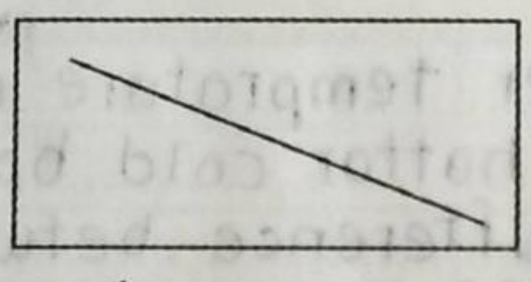

c.

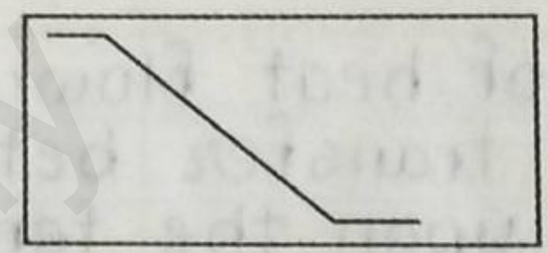

d.

2. While cooling hot water in natural ambience, it follows ..... type of behaviour out of the following.

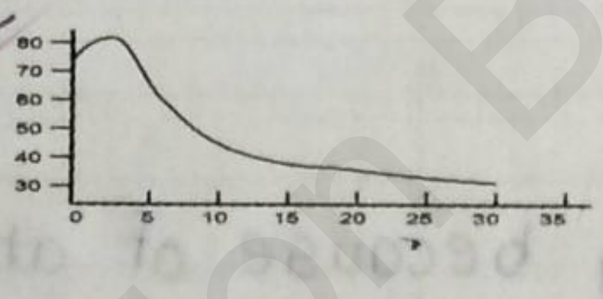
a. 

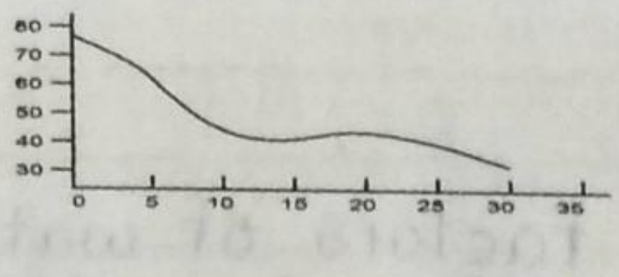
b. 

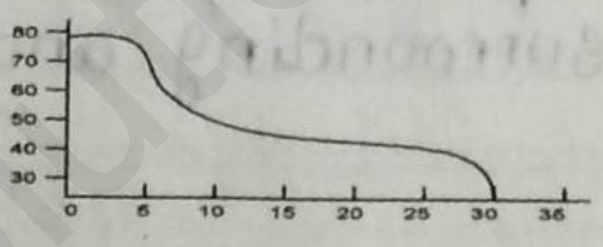
c. 

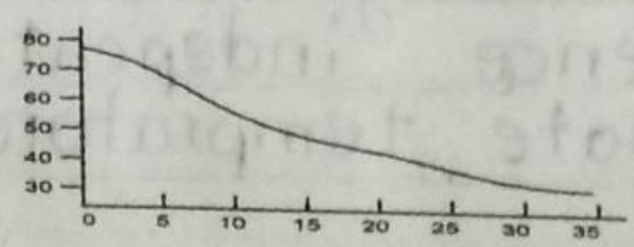
d. 

3. Following are the temperature – time graphs obtained by 4 students in this experiment. Which one is likely to be correct?

a. 

b. 

c. 

d. 

4. Hot liquids gets cooled faster .....
   a. inside house in winter.
   b. in the open in winter.
   c. in the open in summer.
   d. inside house in summer.

5. Heat is liberated when .....

a. water converts into vapour.
b. ice melts.
c. water heats.
d. water vapours condenses.

: Exercise :

1. What is indicated by time – temperature graph in above activity?

often a scale is given an the diagram sotha you can see which length and the diagram represend standard length such as ammeter on the diagram represent standard length such as ammetre on the real object thefore this always use standard length

2. If water of temperatures 80 °C and 60 °C is cooled in two different vessels, which water gets cooled faster? Justify your answer.

Water with more temprature will get cooler than other one but under certain condition like see if both of them are kept in different contain index of difference surface are a ~~different~~ other best attain stability

3. In two beakers (A and B) 50 ml water of about 70 °C each is taken. Then in beaker A, 50 ml of water of about 30°C is added and after 5 minutes, in beaker B, 50 ml of water of about 30 °C is added. What would observe if the temperatures of both beakers recorded immediately? Why?

Rate of heat flow from higher temprature rate at heat transfer between two hottor cold body depends upon the temprature difference between them that mean higher the difference will the heat transfer rate from tohotter to cold.

4. On which factors does cooling of water depends?

A factors of water calling because of atmosphere surrounding in water vapour process, a calling presence indepents upon surrounding and climate temprature.

Remark and Signature .....