

**11.11** Refer to the plot of temperature versus time (Fig. 11.2) showing the changes in the state of ice on heating (not to scale).

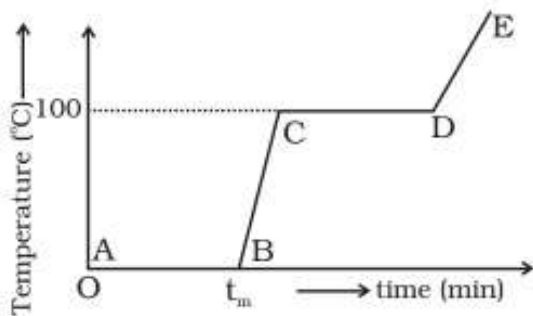


Fig. 11.2

Which of the following is correct?

- (a) The region AB represents ice and water in thermal equilibrium.
- (b) At B water starts boiling.
- (c) At C all the water gets converted into steam.
- (d) C to D represents water and steam in equilibrium at boiling point.

On applying heat continuously, if the temperature doesn't change (i.e. latent heat), then, state of the body (solid, liquid or gas) changes.

The given curve shows two steep rises (at B and D respectively).

⇒ Also,  $AB = 0^\circ\text{C}$  and  $CD = 100^\circ\text{C}$

⇒ In region AB, ice and water are <sup>in</sup> thermal equilibrium with each other.

⇒ At B, ice converts to water and is in water form upto C.

⇒ At CD, water ~~converts to steam~~ is in thermal equilibrium with steam at boiling point.

Hence, options (a) and (d) are correct.