Thermal Properties of Matter

CHAPTER 11

TRY YOURSELF

ANSWERS

1. The kinetic energy of the bullet gets converted into heat energy which in turn heats up the bullet.

2. No, this is because the absolute zero on the Kelvin scale is the minimum possible temperature.

3. When both iron and wood are at the temperature of the human body, they appear equally hot or equally cold.

4. This is because platinum begins to evaporate above 1200°C.

5. No, temperature coefficient α is positive for metals and alloys and negative for semiconductors and insulators.

6. If no gap is left between the iron rails, the rails may bend due to expansion in summer and the train may get derailed.

7. No, all solids do not expand on heating.

8. All have the same unit, *i.e.*, K^{-1} or $°C^{-1}$.

9. Glass is a bad conductor of heat. It does not pass down the heat quickly to the lower surface. Different layers of the bottom are at different temperatures and expand differently. This causes breakage of the glass at the bottom.

10. Gas expands more as compared to liquid.

11. The specific heat is, how much amount is needed to raise the temperature of a substance. Specific heat of water is much higher than that of sand.

12. The phenomenon in which ice melts when pressure is increased and again freezes when pressure is removed is called regelation.

13. The principle of calorimetry states that the heat gained by the cold body must be equal to the heat lost by the hot body, provided there is no exchange of heat with the surroundings.

14. The SI unit of latent heat is $J\ kg^{-1}$.

15. Conduction is the only way to transfer heat through a solid.

16. Although air is poor conductor of heat, it carries away heat from the body due to convection. Hence, we do not feel warm without clothes.

17. The fall in temperature in a body per unit distance is called the temperature gradient $\left(\frac{dT}{dx}\right)$.

18. A body stops radiating at 0 K.

19. By radiation, heat energy from the Sun reaches the Earth.

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