

# Chapter 6: Effect of Heat on Substances

- Which of the following is the thermometric property of a mercury thermometer? [All Board-18]
  - Pressure
  - Length
  - Density
  - Resistance
- If mass, specific heat and thermal capacity of a body are  $m$ ,  $S$  and  $C$  respectively, then which of the following relation is correct? [D.B.-17]
  - $C = \frac{S}{m}$
  - $S = \frac{m}{C}$
  - $S = Cm$
  - $S = \frac{C}{m}$
- The length of a steel wire at  $20^\circ\text{C}$  is 100m. If the length of the wire at  $50^\circ\text{C}$  is 100.033m what is the co-efficient of linear expansion of steel? [D.B.-17]
  - $11 \times 10^{-6}\text{K}^{-1}$
  - $22 \times 10^{-6}\text{K}^{-1}$
  - $33 \times 10^{-6}\text{K}^{-1}$
  - $44 \times 10^{-6}\text{K}^{-1}$
- Which is the correct relationship? [R.B.-17]
  - $\alpha = 2\beta = \gamma$
  - $2\alpha = \beta = \gamma$
  - $2\alpha = 3\beta = \gamma$
  - $6\alpha = 3\beta = \gamma$
- What is the specific heat of water vapor in  $\text{Jkg}^{-1}\text{K}^{-1}$ ? [R.B.-17]
  - 400
  - 2000
  - 2100
  - 4200
- What is the normal temperature of human body in Kelvin scale? [D].B.-17]
  - 36.89K
  - 98.4K
  - 136.89K
  - 309.89K
- What is the temperature at the triple point of water? [C.B.-17]
  - 0 K
  - $\frac{1}{273}$  K
  - 273 K
  - 373 K
- Which of the matter's specific heat is minimum? [Cig.B.-17]
  - Lead
  - Silver
  - Copper
  - Water
- If the specific heat of copper is  $400 \text{ Jkg}^{-1}\text{K}^{-1}$ , what is the heat capacity of copper of mass 5 kg? [S.B.-17]
  - $400 \text{ JK}^{-1}$
  - $500 \text{ JK}^{-1}$
  - $1000 \text{ JK}^{-1}$
  - $2000 \text{ JK}^{-1}$
- What is the co-efficient of volume expansion of copper? [S.B.-17]
  - $50.1 \times 10^{-6}\text{K}^{-1}$
  - $33.4 \times 10^{-6}\text{K}^{-1}$
  - $16.7 \times 10^{-6}\text{K}^{-1}$
  - $13.7 \times 10^{-6}\text{K}^{-1}$
- The solid substances whose volumes contract on melting their melting point reduce with — [J.B.-17]
  - the increase of force
  - the decrease of power
  - the decrease of energy
  - the increase of pressure
- The temperature of a day is increased from  $25^\circ\text{C}$  to  $30^\circ\text{C}$ . What will be the increased temperature in Fahrenheit scale? [J.B.-17]
  - $5^\circ\text{F}$
  - $9^\circ\text{F}$
  - $32^\circ\text{F}$
  - $41^\circ\text{F}$
- Flow goes longitudinal wave propagate with the direction of frequency? [J.B.-17]
  - Perpendicularly
  - Parallel
  - Transversely
  - Producing crest
- Which pair is thermometric property of matter? [B.B.-17]
  - volume, force
  - pressure, density
  - resistance, mass
  - velocity, resistivity
- Which change occurs due to latent heat? [D.B.-16]
  - Temperature
  - State
  - Pressure
  - Heat
- At  $0^\circ\text{C}$  the length of a steel bar is 100 m, but at  $40^\circ\text{C}$  the length of the bar is 100.046 m. What is the value of co-efficient of linear expansion of steel in  $\text{K}^{-1}$ ? [D.B.-16]
  - $11.5 \times 10^{-6}$
  - $11.0 \times 10^{-6}$
  - $23.0 \times 10^{-6}$
  - $34.5 \times 10^{-6}$
- The heat which transforms a liquid into vapor state is called what? [R.B.-16]
  - Evaporation
  - Boiling
  - latent heat
  - latent heat of vaporization
- Which one of the following does show the highest melting point? [D].B.-16]
  - Copper
  - Silver
  - Nichrome
  - Tungsten
- What is the relation between the co-efficient of linear ( $\alpha$ ), superficial ( $\beta$ ) and volume ( $\gamma$ ) expansion? [C.B.-16]
  - $3\alpha = 2\beta = \gamma$
  - $\alpha = 6\beta = 2\gamma$
  - $6\alpha = 3\beta = 2\gamma$
  - $6\alpha = 3\beta = 3\gamma$
- Which one is correct? [C.B. 2016]
  - $\frac{C}{5} = \frac{F}{9}$
  - $\frac{C}{9} = \frac{F-32}{3}$
  - $\frac{F-32}{9} = \frac{K-273}{5}$
  - $\frac{C}{5} = \frac{K-273}{9}$
- If the thermal capacity of a body of mass 10 kg is  $4000 \text{ JK}^{-1}$ , then what is the specific heat of the body? [C.B.-16]
  - $40000 \text{ Jkg}^{-1}\text{K}^{-1}$
  - $400 \text{ Jkg}^{-1}\text{K}^{-1}$
  - $40 \text{ Jkg}^{-1}\text{K}^{-1}$
  - $2.5 \times 10^{-3} \text{ Jkg}^{-1}\text{K}^{-1}$
- Which one is the thermal property of a material? [Cig.B.-16]
  - Density
  - Weight
  - Pressure
  - Buoyancy
- Specific heat of silver is  $230 \text{ Jkg}^{-1}\text{K}^{-1}$ , if the mass of silver is 5 kg, then what is the amount of thermal capacity? [Cig.B.-16]
  - $0.22 \text{ JK}^{-1}$
  - $46 \text{ JK}^{-1}$
  - $235 \text{ JK}^{-1}$
  - $1150 \text{ JK}^{-1}$
- $40^\circ\text{C}$  temperature equals to what reading in Fahrenheit scale? [S.B.-16]
  - $40^\circ\text{F}$
  - $72^\circ\text{F}$
  - $104^\circ\text{F}$
  - $313^\circ\text{F}$
- When pressure creates, the melting point of paraffin becomes — [B.B.-16]
  - less
  - more
  - as the same
  - independent pressure
- What is the triple point of water? [B.B.-16]
  - $0.16^\circ\text{C}$
  - $273.00\text{K}$
  - $273.16^\circ\text{C}$
  - $373.16\text{K}$
- In which temperature, Centigrade and Fahrenheit scale will be the same reading? [B.B.-16]
  - $40^\circ\text{C}$
  - $40\text{K}$
  - $-40^\circ\text{C}$
  - $-40\text{K}$
- In which substance, specific heat is the highest? [B.B.-16]
  - Lead
  - Iron
  - Copper
  - Ice
- Thermometric property of matter is used in — [J.B.-17]
  - wire of electric fuse
  - filament of bulb
  - alcoholic thermometer
 Which one is correct
  - i and ii
  - i and iii
  - ii and iii
  - i, ii and iii

30. The amount of heat gained or lost by the body depends on — [R.B.-16]

- i. mass of a body
- ii. material of the body
- iii. temperature of the body

Which one is correct?

- Ⓐ i and ii
- Ⓑ i and iii
- Ⓒ ii and iii
- Ⓓ i, ii and iii

31. The temperature of any object does not increase even though more heat is given after reaching its melting point since — [D.J.B.-16]

- i. the heat is mainly used for the transformation of state of the object
- ii. the heat is really wasted in the surrounding environment
- iii. the heat provides the required energy for breaking the bond in between the molecules of the object

Which one of the following is correct?

- Ⓐ i and ii
- Ⓑ i and iii
- Ⓒ ii and iii
- Ⓓ i, ii and iii

32. Surid takes some water in a bowl and keep it on a table. After two days he observed that there was no water in the bowl. What is called this process? [J.B.-16]

- i. Evaporation
- ii. Boiling
- iii. Condensation

Which one is correct?

- Ⓐ i
- Ⓑ i & ii

- Ⓒ i & iii
- Ⓓ i, ii & iii

33. Thermometric properties of matter is — [B.B.-16]

- i. volume
- ii. pressure
- iii. resistance

Which one is correct?

- Ⓐ i & ii
- Ⓑ ii & iii
- Ⓒ i & iii
- Ⓓ i, ii & iii

Answer questions no. 34 & 35 based on the stem given below:

A piece of ice dropped into boiled water, it is seen that the ice melts gradually and the temperature of boiled water is decreasing. [J.B.-16]

34. How long time will be taken to exchange of heat between the water and ice?

- Ⓐ Until the whole ice has melted completely
- Ⓑ Until the temperature of water reaches at zero
- Ⓒ Until the temperature of water and ice melted water became not equal
- Ⓓ Until the water condensed into ice or converted into vapour

35. The temperature of body of an adult man is 98.4°F. What would be the reading in Celsius scale?

- Ⓐ 36.89°C
- Ⓑ 73°C
- Ⓒ 24.33°C
- Ⓓ 44.93°C