



Class 11 Physics | Thermal Properties Of Matter

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. A temperature rise of 20°C equals a rise of:

- A. 253 K B. 20 K C. 36 K D. 293 K

2. A 2 m rod has $\alpha=10^{-5}\text{ K}^{-1}$. On heating by 50 K , extension is:

- A. 100 mm B. 10 mm C. 1 mm D. 0.1 mm

3. For an isotropic solid at small expansion, volume coefficient is approximately:

- A. $\alpha/3$ B. α^2 C. 3α D. 2α

4. A hole in a metal plate expands on heating because:

- A. Only the outer edge expands
B. Metal fills the hole
C. Its area remains constant
D. All lengths scale up

5. Heat needed to warm 0.5 kg of water by 10 K ($c=4200\text{ J/kg K}$) is:

- A. 8400 J B. 2100 J C. 42000 J D. 21000 J

6. Equal masses of water at 20°C and 60°C mix without heat loss. Final temperature is:

- A. 30°C B. 80°C C. 40°C D. 50°C

7. During melting of pure ice at constant pressure, supplied heat mainly:

- A. Changes phase without raising temperature
B. Raises temperature continuously
C. Reduces molecular spacing to zero
D. Lowers internal energy

8. Melt 0.1 kg ice at 0°C ; $L=3.34\times 10^5\text{ J/kg}$. Required heat is:

- A. 3340 J B. 33400 J C. 334 J D. 334000 J

9. Water has maximum density approximately at:

- A. -4°C B. 4°C C. 0°C D. 100°C

10. Conduction through a slab doubles when, with other factors fixed:

- A. Thermal conductivity halves
B. Area doubles
C. Thickness doubles
D. Temperature difference halves

11. Two identical slabs are stacked, doubling thickness. Heat-current ratio to one slab is:

- A. 2 B. 1 C. $1/2$ D. 4

12. Heat transfer that requires no material medium is:

- A. Conduction B. Convection
C. Diffusion D. Radiation

13. An ideal black body is a:

- A. Perfect absorber of incident radiation
B. Body that emits no radiation
C. Perfect reflector
D. Body necessarily at 0 K

14. A black body's absolute temperature doubles. Total emitted power per unit area becomes:

- A. 4 times B. 8 times C. 16 times D. 2 times

15. A star's temperature doubles. Peak-emission wavelength becomes:

- A. Four times B. Half C. One-fourth D. Twice

ANSWER KEY — check after completing all 15 questions

1.B 2.C 3.C 4.D 5.D 6.C 7.A 8.B 9.B 10.B 11.C 12.D 13.A 14.C 15.B

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper