

QB365 Question Bank Software Study Materials

Thermal Physics 50 Important 1 Marks Questions With Answers (Book Back and Creative)


10th Standard

Science

Total Marks : 50

Multiple Choice Question

50 x 1 = 50

- 1) The value of universal gas constant
(a) $3.81 \text{ J mol}^{-1} \text{ K}^{-1}$ (b) $8.03 \text{ J mol}^{-1} \text{ K}^{-1}$ (c) $1.38 \text{ J mol}^{-1} \text{ K}^{-1}$ (d) **$8.31 \text{ J mol}^{-1} \text{ K}^{-1}$**
- 2) If a substance is heated or cooled, the change in mass of that substance is
(a) positive (b) negative (c) **zero** (d) none of the above
- 3) If a substance is heated or cooled, the linear expansion occurs along the axis of
(a) X or -X (b) Y or -Y (c) both (a) and (b) (d) **(a) or (b)**
- 4) Temperature is the average _____ of the molecules of a substance
(a) difference in K.E and P.E (b) sum of P.E and K.E (c) **difference in T.E and P.E** (d) difference in K.E and T.E
- 5) In the Given diagram, the possible direction of heat energy transformation is

(a) **A←B, A←C, B←C** (b) A→B, A→C, B→C (c) A→B, A←C, B→C (d) A←B, A→C, B←C
- 6) Which of the following has the fastest process of heat transfer?
(a) Conduction (b) convection (c) **Radiation** (d) all the above
- 7) At what temperature are Celsius and Fahrenheit equal
(a) 40° (b) **-40°** (c) 0° (d) 100°
- 8) In which process heat is transferred directly from one molecule to other?
(a) conduction (b) convection (c) Radiation (d) **all the above**
- 9) Temperature is a property which determines
(a) amount of heat a body contains (b) total absolute energy a body has (c) **direction of flow of heat**
(d) thermal energy
- 10) SI unit of temperature is
(a) celsius (b) fahrenheit (c) **kelvin** (d) none
- 11) SI unit of heat is
(a) calorie (b) **joule** (c) kilo calorie (d) kelvin
- 12) Thermal expansion at particular temperature is less in
(a) **solid** (b) liquid (c) gas (d) all above
- 13) Increase in area due to heating is called
(a) Linear expansion (b) **Superficial expansion** (c) Cubical expansion (d) real expansion

Linear expansion is the change in _____ when object is heated or cooled

- Linear expansion is the change in _____ when object is heated or cooled.
- 14) **(a) length** (b) area (c) volume (d) density
- 15) At constant temperature volume is inversely proportional to pressure of a gas is known as
(a) Boyle's law (b) Charles (c) Avogadro (d) None
- 16) According to Charles's law
(a) $P \propto \frac{1}{V}$ **(b) $V \propto T$** (c) $V \propto n$ (d) all the above
- 17) Gas laws state the relationship between _____ properties of gas.
(a) pressure (b) volume (c) Temperature & mass **(d) all the above**
- 18) The formula for conversion of temperature from Kelvin to Celsius is
(a) $C = K + 73$ **(b) $C = K - 273$** (c) $C = K + 460$ (d) $C = K - 460$
- 19) If the atoms or molecules of a gas do not interact with each other, then the gas is said to be _____.
(a) a real gas **(b) an ideal gas** (c) a noble gas (d) a rare gas
- 20) Absolute scale is also called as _____
(a) Kelvin scale (b) Celsius scale (c) Centigrade scale (d) Fahrenheit scale
- 21) Thermal conduction in metal is due to
(a) Free electrons (b) bound electrons (c) Vibration of molecules **(d) vibration of atoms**
- 22) _____ is the primary source of thermal energy for all living organisms.
(a) Sun (b) Moon (c) stars (d) None
- 23) _____ is the cause and temperature is the effect.
(a) Thermal energy (b) Heat energy (c) light energy (d) both a and c
- 24) The temperature is higher for a _____ body than for a _____ body.
(a) Hotter, Chiller **(b) Hotter, Colder** (c) Chiller, Hotter (d) Colder, Chiller
- 25) It is a _____ quantity
(a) Scalar (b) Vector (c) tensor (d) all
- 26) _____ Kelvin is the absolute scale of temperature of the body.
(a) One **(b) Zero** (c) None (d) 273
- 27) _____ Energy always flow from one body to the other due to a temperature difference between them.
(a) COOL **(b) Heat** (c) hot (d) cold
- 28) Co-efficient of cubic expansion of water is _____
(a) $20.7 \times 10^{-5}K^{-1}$ **(b) $20.7 \times 10^{-5}K^{-1}$** (c) $2.07 \times 10^{-5} K^{-1}$ (d) $20.7 \times 10^{-5}K^{-1}$
- 29) The coefficient of cubical expansion of liquid is _____ of temperature.
(a) dependent **(b) Independent** (c) either a or b (d) none
- 30) Value for Gases _____ on the temperature of gases
(a) Dependent (b) Independent (c) either a or b (d) none
- 31) According to Boyle's law, pressure is _____ proportional to its pressure.
(a) Directly **(b) indirectly** (c) invariably (d) either a or b

- 32) According to Charles 's law, the volume of the gas is _____proportional to the temperature of the gas.
 (a) Indirectly **(b) directly** (c) variably (d) none
- 33) According to Avogadro's law, Volume is _____proportional to number of atoms or molecules present in it.
 (a) Indirectly **(b) directly** (c) variably (d) none
- 34) Temperature is the
(a) average kinetic energy of the molecules (b) average potential energy of the molecules
 (c) total energy of the molecules. (d) none of the above
- 35) The absolute scale of temperature of a body is
 (a) 1 K **(b) 0 K** (c) 100 K (d) None
- 36) Two or more physical system or bodies are said to be in equilibrium
 (a) if there is a flow of thermal energy between the systems.
(b) if there is no net flow of thermal energy between the systems
 (c) if there may or may not be a flow of thermal energy between the systems (d) None of the above
- 37) Unit of heat energy is
 (a) Kelvin **(b) Calorie** (c) Celsius (d) Fahrenheit
- 38) For any exchange of heat
(a) heat gained by the cold system is equal to the heat lost by the hot system.
 (b) heat gained by the cold system is more than the heat lost by the system.
 (c) heat gained by the cold system is lesser than the heat lost by the system. (d) none of the above
- 39) When a certain amount of heat energy is given to the substance
 (a) Temperature of the substance rises (b) the substance may change its state (c) The substance will expand
(d) All the above
- 40) Rise in temperature depends on the
(a) nature and mass of the substance (b) nature of the substance only (c) mass of the substance only
 (d) none of the above
- 41) The SI unit of co-efficient of linear expansion is
(a) K^{-1} (b) K (c) mK (d) $m^{-1}K^{-1}$
- 42) The co-efficient of linear expansion is
(a) different for different material (b) same for all the metals (c) independent on the nature of the metals
 (d) different for same metals under different conditions
- 43) Which of the statements given below is true?
(a) The real expansion is always more than that of apparent expansion
 (b) The real expansion and apparent expansion are equal
 (c) The real expansion is always lesser than that of apparent expansion (d) None of the above
- 44) Charles's law is otherwise called as
 (a) law of mass (b) law of temperature (c) law of pressure **(d) law of volume**
- 45) According to Avogadro's law
 (a) $\frac{V}{T}$ is constant (b) $PV = a$ constant **(c) $\frac{V}{n} = a$ constant** (d) $Vn = a$ constant

- 46) Practically in an ideal gas
- (a) there is no interaction of molecules **(b) the interaction of molecules are weaker**
- (c) the interaction of molecules are stronger (d) the interaction of molecules are either weaker or stronger
- 47) The value of Boltzmann's constant is
- (a) $1.38 \times 10^{-23} \text{ JK}^{-1}$** (b) $13.8 \times 10^{-23} \text{ JK}^{-1}$ (c) $1.38 \times 10^{-21} \text{ JK}^{-1}$ (d) $1.38 \times 10^{-22} \text{ JK}^{-1}$
- 48) The value of universal gas constant is _____.
- (a) $8.21 \text{ J mol}^{-1} \text{ K}^{-1}$ (b) $8.27 \text{ J mol}^{-1} \text{ K}^{-1}$ **(c) $8.31 \text{ J mol}^{-1} \text{ K}^{-1}$** (d) $8.21 \text{ J mol}^{-1} \text{ K}^{-1}$
- 49) The co-efficient of linear expansion depends on
- (a) original length (b) increasing temperature (c) natural material **(d) both (a) & (b)**
- 50) SI unit of co-efficient of real expansion is
- (a) K^{-1}** (b) K (c) K^2 (d) mK