

PPSC Physics Topic 3 Thermal Properties of Matter

Sr	Questions	Answers Choice
1	Which of the following is heat transfer by means of the emission or absorption of electromagnetic radiation such as sunshine.	A. Conduction or diffusion B. Convection C. Radiation D. Mass transfer
2	During an adiabatic gas expansion the environment	A. Serves as a heat sink B. Serves as a heat source C. Must be at a higher temperature than the gas D. Does not have to participate
3	In order of a cyclic heat engine operating between two heat reservoirs to be as efficient as a Carnot engine. It must be.	A. A gas engine B. Adiabatic C. Reversible D. A refrigerator
4	A mercury thermometer has	A. Low conductivity and low thermal capacity B. High conductivity and high thermal capacity C. Low conductivity and high thermal capacity D. High conductivity and high thermal capacity
5	When a hot liquid is mixed with a cold liquid temperature of the mixture.	A. First decreases and then becomes constant B. First increases and then becomes constant C. Continuously decreases D. Is undefined for some time and then nearly becomes constant
6	A sample of an ideal gas may i) energy adiabatically, or ii) Expand isothermally. the net flow of heat into the gas from the exterior is.	A. Positive in each case B. Negative for i) and positive for ii) C. Zero for i) and positive for ii) D. Positive for i) and negative for ii)
7	The gas temperature is increased from 27 °C to 127 °C What is the ratio of mean kinetic energies.	A. 3/4 B. 4/3 C. 9/10 D. 10/9
8	Which quantity must be the same for two bodies if they are to be in thermal equilibrium.	A. Internal energy B. P.E C. Temperature D. Mass
9	Diffusion of gases occurs because the molecules of the	A. Gas present in a higher concentration exerts a high pressure B. Gases are different C. Gases attract each other D. Gases move about randomly
10	Difference between the molar heat capacity constant pressure and that at constant volume is equal to	A. Root mean square velocity B. Mean free path C. Boltzmann's constant D. Universal gas constant
11	An ice making machine extracts energy at the rate of 500 W The specific latent heat of fusion of ice is 300 kJ kg ⁻¹ . How long does it take to freeze 2 kg of water at 0 °C.	A. 120 s B. 150 s C. 1200 s D. 1500 s
12	Which is the heat transfer mode between an object and its environment due to circular fluid motion.	A. Conduction B. Convection C. Radiation D. Mass transfer
13	Which of the following is a thermodynamic potential	A. Internal energy B. Enthalpy C. Gibbs free energy D. All of these
		A. 90 K B. 100 K

14	A Carnot engine has the same efficiency between (i) 100 K and 500 K and ii) T and 900 K. What will be T.	B. 100 K C. 180 K D. 200 K
15	Gas law $PV = \text{constant}$ is for	A. Adiabatic change B. Isothermal changes C. Isobaric changes D. Isochoric changes
16	The number of molecules or atoms in a specific volume of a gas is independent of their	A. Volume B. Pressure C. Size D. Temperature
17	Which of the following is an example of irreversible process.	A. Melting of ice B. Work done against friction C. Peltier heating and cooling D. All isothermal and adiabatic changes
18	A cup of coffee at 80 °C is left to cool to 30 °C if the heat capacity of the cup and coffee is 2.0 kJ K ⁻¹ how much heat is released during the cooling.	A. 0.04 kJ B. 100 kJ C. 60 kJ D. 160 kJ
19	When all the systems taking part in a process are included, the entropy.	A. Decreases B. Either remains constant or increases C. Either remains constant or decreases D. Remains constant
20	Which of the following can be used to visualize the third law of thermodynamics	A. Light B. Heat C. Water D. All of these