

ECAT Physics Chapter 11 Heat & Thermodynamics

Sr	Questions	Answers Choice
1	The work done by the system on its environment is considered as	A. positive B. negative C. zero D. any one of them
2	At the constant temperature, if the value of a given mass of a gas is double, then the density of gas becomes:	A. Double B. Remains constant C. Half D. None of these
3	According to kinetic theory of gases, molecules of a gas behave like	A. Inelastic spheres B. Perfectly elastic rigid sphere C. Perfectly elastic non-rigid spheres D. Inelastic non-rigid spheres
4	The volume of given mass of a gas will be doubled at atmosphere pressure if the temperature of the gas is changed from 150°C to	A. 300 °C B. 573 °C C. 600 °C D. 743 °C
5	It is impossible to devise a processes which may convert heat, extracted from a single reservoir, entirely into work without leaving any change in the working system. This is the statement of	A. Clausius statement of second law B. Kelvin's statement of second law C. Clausius statement of first law D. Kelvin's statement of first law
6	In an adiabatic process the work is done at the expense of the	A. energy supplied to the system B. energy gained from the surroundings C. internal energy D. none of them
7	Pressure applied at any point of gas at rest is transmitted equally to all parts of the gas. This is the statement of:	A. Newton's second law B. Pascal's law C. Carnot theorem D. Second law of thermodynamics
8	The temperature of gas is produced by	A. At potential energy of its molecules B. The kinetic energy of its molecules C. The attractive force between its molecules D. The repulsive force between its molecules
9	We can express the work in term of	A. directly measurable variables B. indirectly measurable variables C. either of them D. both of them
10	The relationship between Boltzmann constant k with R and N_A is given as:	A. $k = RN_A$ B. $k = R/N_A$ C. $k = NR/N_A$ D. None of these
11	On the exhaust stroke, the outlet valves opens. The residual gases are expelled and piston moves	A. outwards B. inwards C. in either way D. none of these
12	The disorder in the system increases due to the	A. removal of heat B. addition of heat C. removal or addition of heat D. none of them
13	If N is the total number of molecules and V is the volume of the container, then the expression for the pressure of gas is	A. $P = \frac{1}{3} \frac{Nm\overline{v^2}}{V}$ B. $P = \frac{2}{3} \frac{Nm\overline{v^2}}{V}$ C. $P = \frac{2}{3} \frac{N\overline{mv^2}}{V}$ D. $P = \frac{1}{3} \frac{N\overline{mv^2}}{V}$

14	The percentage of available heat energy converted into work by a petrol engine is roughly	A. 35 % B. 40 % C. 35 to 40 % D. 25 %
15	The product of the pressure and volume of an ideal gas is	A. A constant B. Approximately equal to the universal gas constant C. Directly proportional to its temperature D. Inversely proportional to its temperature
16	The second law of thermodynamics is concerned with the circumstances in which	A. heat can be converted into work B. direction of flow of heat C. none of them D. both of them
17	Rice takes longest to cook	A. In a submarine 100 m below the surface of the sea B. At sea level C. At Murree D. At Mount Everest
18	The ideal gas law is	A. $P = nRT$ B. $V = nRT$ C. $PV = RT$ D. $PV = nRT$
19	The bicycle pump provides a good example of	A. first law of thermodynamics B. second law of thermodynamics C. third law of thermodynamics D. none of them
20	What temperature is the same on Celsius scale as well as on Fahrenheit scale?	A. 32°C B. -32°C C. -40°C D. -212°C