ECAT Physics Chapter 11 Heat & Thermodynamics

Sr	Questions	Answers Choice
1	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
2	If the volume of the gas is to be increased by 4 times, then	A. Temperature and pressure must be doubled B. At constant P the temperature must be increased by 4 times C. At constant T the pressure must be increased by four times D. It cannot be increased
3	Absolute zero is considered as that temperature at which:	A. All liquid become gases B. All gases become liquid C. Water freezes D. None of these
4	Boyle's law is applicable in	A. Isochoric process B. Isothermal process C. Isobaric process D. Isotonic process
5	Carnot heat engine only used	A. isothermal processes B. adiabatic processes C. both of them D. none of them
6	Which of the following does not have the same units:	A. Work B. Heat C. Kinetic energy D. Power
7	The length of a metallic rod is 5 meter at 100°C. The coefficient of cubical expansion of the metal will be	A. 2.0 x 10⁻⁵/°C B. 4.0x10⁻⁵/°C C. 6.0x10⁻⁵/°C D. 2.33x10⁻⁵/°C
8	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
9	A real gas can be approximated to an ideal gas at	A. Low density B. High pressure C. High density D. Low temperature
10	When two objects are rubbed together, their internal energy	A. remains same B. decreases C. remains the same then decreases D. increases
11	In case of an ideal gas, the P.E associated with its molecule is	A. maximum B. zero C. minimum

		C. minimum D. not fixed
12	While deriving the equation for pressure of a gas we consider the	A. rotational motion of molecules B. vibrational motion of molecules C. linear motion of molecules D. all of them
13	At absolute temperature, the kinetic energy of the molecules	A. Becomes zero B. Becomes maximum C. Becomes minimum D. Remain constant
14	The number of translation degress of freedom for a diatomic gas is	A. 2 B. 3 C. 5 D. 6
15	A typical four stroke petrol engine undergoes how many successive processes in each cycle	A. one B. two C. three D. four
16	The unit of thermodynamical scale is	A. centigrade B. fahrenheit C. kelvin D. none of them
17	Two metal rods A and B have their initial lengths in the ratio 2 : 3 and coefficients of linear expansion in the ratio 4 : 3. When they are heated through same temperature difference the ratio of their linear expansion is	A. 1 : 2 B. 2 : 3 C. 3 : 4 D. 8 : 9
18	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 %
19	Which of the following is a state variable	A. entropy B. pressure C. volume D. all of them
20	During the whole carnot cycle	A. Thermal equilibrium is maintained B. mechanical equilibrium is maintained C. both the thermal and mechanical equilibriumis maintained D. both the thermal and mechanical equilibrium is not maintained