ECAT Physics Online Test

Sr	Questions	Answers Choice
1	The process which is carried out at constant temperature is known as	A. adiabatic process B. isothermal process C. isochoric process D. none of them
2	If 42 J heat is transferred to the system and the work done by the system is 32 J then what will be the change in internal energy	A. 0 J B. 2 J C. 5 J D. 10 J
3	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
4	A diatomic gas molecule has	A. translational energy B. rotaional energy C. vibrational energy D. all of them
5	We can express the work in term of	A. directly measurable variables B. indirectly measurable variables C. either of them D. both of them
6	If an amount of heat enters the system it could	A. decrease the internal energy B. not change the internal energy C. increase the internal energy D. none of them
7	The work done on the system by the environment is considered as	A. positive B. negative C. zero D. any one of them
8	The work done by the system on its environment is considered as	A. positive B. negative C. zero D. any one of them
9	The internal energy of a system does not depend upon the	A. initial state of the system B. final state of the system C. path D. none of them
10	In thermodynamics, internal energy is the function of	A. temperature B. pressure C. state D. none of them
11	When two objects are rubbed together, their internal energy	A. remains same B. decreases C. remains the same then decreases D. increases
12	The internal energy of an ideal gas system is generally the	A. translational K.E of molecules B. vibrational K.E of molecules C. rotational K.E of molecules D. all of them
13	In the study of thermodynamics, which gas is considered as the working substance	A. real gas B. ideal gas C. any gas may be ideal or real D. none of them
14	Internal energy is the sum of all the forms of	A. K.E B. P.E C. both of them D. none of them
		A. 300°C B. 573

15	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	...°C C. 600°C D. 743°C
16	The absolute temperature for an ideal gas is	A. directly proportional to the rotational K.E of gas molecules B. directly proportional to the vibrational K.E of gas molecules C. directly proportional to the average translational K.E.of gas molecules D. directly proportional to the P.E. of gas molecules
17	The Boltzman constant has the value	A. $1.38 \times 10^{-23} JK^{-1}$ B. $1.28 \times 10^{-23} JK^{-1}$ C. $1.38 \times 10^{-26} JK^{-1}$ D. $1.28 \times 10^{-26} JK^{-1}$
18	The ideal gas law is	A. $P = nRT$ B. $V = nRT$ C. $PV = RT$ D. $PV = nRT$
19	The pressure exerted by the gas is	A. directly proportional to the P.E B. inversely proportional to the P.E C. inversely proportional to the K.E D. directly proportional to the K.E
20	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
21	The pressure of gas everywhere inside the vessel will be the same provided the gas is of	A. Non-uniform density B. uniform density C. high density D. low density
22	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. $P = P/V < 1/2mv^2 >$ B. $P = 2N/V < 1/2mv^2 >$ C. $P = 2/3N/V < 1/2mv^2 >$ D. $P = 2/3N/V < mv^2 >$
23	Which of the following is not an assumption of kinetic energy	A. a finite volume of gas consists of very large number of molecules B. the gas molecules are in random motion C. collision between the gas molecules are inelastic D. the size of the gas molecules is much smaller than the separation between molecules
24	The behaviour of gases is well accounted by the kinetic theory based on	A. microscopic approach B. macroscopic approach C. both of them D. none of them
25	A semi-conductor in its extremely pure form is known as	A. extrinsic semi-conductor B. intrinsic semi-conductor C. either of them D. none of them
26	The materials in which there are plenty of free electrons for electrical conduction are known as	A. conductors B. insulators C. semi-conductors D. all of them
27	The materials in which valence electrons are bound very tightly to their atoms and are not free, are known as	A. conductors B. insulators C. semi-conductors D. all of them
28	The bands below the valence band are	A. completely filled and play active part in conduction process B. completely filled and plays no part in conduction process C. completely filled and play active part in conduction process

		D. not completely filled and play no part in conduction process
29	The conduction band in a solid	A. may be empty B. cannot be empty C. should be filed D. all of them
30	The electrons occupying the conduction band are known as	A. conduction electrons B. free electrons C. both of them D. none of them