MDCAT Physics Chapter 5 Thermodynamics Online Test

Sr	Questions	Answers Choice
1	Avogadro number is known as number of molecules in:	A. One kg of a substance B. Unit volume of a substance C. One mole of a substance D. None of these
2	The nature of thermal radiation is smaller to:	A. Ultraviolet rays B. Light rays C. Both of them D. None of these
3	In which process the change in internal energy of the system is zero:	A. Isochoric process B. Isobaric process C. Adiabatic process D. Isothermal process
4	Carnot cycle is:	A. Reversible B. Irreversible C. Sometimes A, Sometimes B D. None of these
5	The efficiency of a particle heat engine:	A. can be 100% B. Cannot be 100% C. Is always zero D. None of these
6	Number of spark plugs needed in diesel engine is:	A. Four B. Five C. Six D. None of these
7	No entropy change is associated with:	A. Isothermal B. Adiabatic process C. Isobaric process D. None of them
8	Only those processes are probable to take place for which entropy os the system:	A. Increases B. Remains constant C. Both A and B are correct D. None of above
9	When heat is added to the system, the entropy change is:	A. Positive B. Negative C. Zero D. None of these
10	Hotness and coldness of an object is represented in terms of:	A. Heat B. Temperature C. Chemicial D. None of these
11	Absolute zero is considered as that temperature at which:	A. All liquids become gases B. All gases become liquids C. Water freezes D. None of these
12	When two objects come to common temperature, the body is said to be in:	A. Static equilibrium B. Dynamic equilibrium C. Thermal equilibrium D. None of these
13	A gas which strictly obeys the gas laws under all conditions of temperatures and pressure is called:	A. Ideal gas B. Inert gas C. Real gas D. None of these
14	Real gases strictly obey gas laws at:	A. High pressures and low temperatures B. Low pressures and high temperatures C. High pressures and & temperatures D. None of these
		A. Double

15	At constant temperature, if the volume of a given mass of a gas is doubled, then the density of gas becomes:	B. Remains constant C. Half D. None of these
16	The only significant motion possessed by the mono-atomic gas molecules is:	A. Translatory B. Rotatory C. Vibratory D. None of these
17	In the theory of dimensional analysis, heat may be properly represented by:	A. ML²T⁻² B. MT⁻² C. ML⁻¹T⁻¹ D. None of these
18	The temperature scale approved in SI units is:	A. Calslus scale B. Kelvin scale C. Fehrenhelt scale D. None of these
19	Which of the following does not have the same units:	A. Work B. Heat C. Kinetic energy D. Power
20	In an ideal gas, the molecules have:	A. Kinetic energy only B. Potential energy only C. Both KE and PE D. None of these
21	The motion of molecules in gases i:	A. Orderly B. Random C. Circular D. All of these
22	At constant temperature, if the density of the gas is increased, its pressure will:	A. Decrease B. Increase C. Remain unchanged D. None of these
23	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
24	The nature of thermal radiation is similar to:	A. Ultraviolet rays B. Light rays C. Both of them D. None of them
25	Electromagnetic waves emitted by hot bodies are called:	A. Photoelectrons B. Alpha rats C. Thermal radiation D. None of these
26	Truth of kinetic energy theory is confirmed by:	A. Diffusion of gases B. Brownian motion C. Both A and B D. None of these
27	Pressure may be defined as_____per second per unit area:	A. Change in force B. Change in momentum C. Change in energy D. Work done
28	If a molecule with momentum mv strikes a wall and rebound then the change in momentum will be:	A. -2 mv B. Zero C. 2 mv D. mv
29	The rate of change of momentum of a molecule is equal to:	A. Pressure B. Work C. Density D. Force
30	Change in momentum per second is:	A. Product force and time B. Product of pressure and area C. Ratio of pressure and area D. None of these
31	The pressure exerted on the walls on the vessel by gas molecules is defined as:	A. Force per unit volume B. Energy per unit area C. mass per unit volume D. None of these
32	According to boyle's law, volume of a given mass of a gas is	A. Inversely proportional mass at constant pressure B. Directly proportional to pressure at constant temprerature C. Inversely proportional pressure at

		constant temprature D. None of these
33	Brownian motion confirms the truth of :	A. Wave theory of light B. Boyle's law C. Kinetic theory of gases D. Adiabatic process
34	The number of molecules in one mole of gas is equal to:	A. Avogadro number N_A B. Gas constant R C. Boltzmann constant k D. None of these
35	The temperature at which all the gases become liquid is called:	A. 273 K B. -273 K C. Absolute Zero D. Both (B) and (C)
36	For a gas obeying Boyle's law, if the pressure is doubled the volume becomes:	A. One half B. Double C. Four times D. None of these
37	Thermal radiations are a type of:	A. Mechanical waves B. Electromagnetic waves C. Alpha rays D. Electrons
38	The ideal gas obey gas law at:	A. Low tempratures and high pressures B. High temperatures and low pressures C. All temperatures and pressures D. None of these
39	When a gas is compressed:	A. Its internal energy decreases B. Its temperature decreases C. Its temperature increases D. None of these
40	In thermodynamics, the change in internal energy depends upon:	A. The path taken between initial and final states B. The initial state only C. The final state only D. Initial and final states
41	First law of thermodynamics is merely a statement of law of conversation of:	A. Energy B. Angular momentum C. Change D. Linear momentum
42	In which process, the change in internal energy of the system of zero:	A. Isochoric process B. isobaric process C. Adiabatic process D. Isothermal process
43	Tick which of the following is not state variable:	A. Heat energy B. Pressure C. Entropy D. Volume
44	If P is the pressure and V is the volume, Then PV will represent:	A. Power B. Work C. Force D. None of these
45	While dealing with the processes i thermodynamics, the working substances is usually:	A. Oxygen gas B. Hydrogen gas C. Ideal gas D. None of these
46	The value of universal gas constant R is:	A. 8.314 J/K mole K B. 8314 J/ mole K C. 8.314 J/ mole K D. None of these
47	The equation W = _____ U represents:	A. Thermal process B. adiabatic process C. Isobaric process D. None of these
48	A process which is carried at constant temperature and Boyle's law can be applied is called:	A. Adiabatic process B. Isothermal process C. Isochoric process D. None of these
49	The equation PVr = Constant applies to:	A. Isothermal process B. Adiabatic process C. Isobaric process D. None of these

		D. None of these
50	A process in which no heat enters or leaves the system is called.	A. Adiabatic process B. Isothermal process C. Isochoric process D. None of these
51	If $C_V$donotes molar specific heat at constant volume and T is the change in temperature, then C_VT gives:	A. Volume B. Pressure C. Energy D. Entropy
52	If the temperature difference between hot and cold body is greater the heat engine is:	A. Not efficient B. Less efficient C. More efficient D. NOne of above
53	Steam engine is:	A. An optical system B. A thermal system C. A thermodynamic system D. None of these
54	The law of thermodynamics which discusses the condition under which heat energy is converted into and equivalent amount of work is:	A. 1st B. 2nd C. 3rd D. None of these
55	As the working substance of a heat engine completes a cycle, there is no change in:	A. Internal energy B. Pressure C. Volume D. All of these
56	The ratio of output work per cycle to input energy per cycle is called:	A. Entropy B. Internal energy C. Efficiency D. None of these
57	What will be efficiency of carnot engine when it is operated between the temperatures 47^oC and $127\ ^oC$:	A. Reversible B. Irreversible C. Sometimes A and B D. None of these
58	If temperature of the sink is decreased, efficiency of a carnot engine.	A. Remains constant B. Decreases C. Increases D. None of these
59	Carnot engine is _____ heat engine.	A. A reversible B. An irreversible C. An ideal D. Both A and C
60	The efficiency of a practical heat engine:	A. Can be 100% B. Can not be 100% C. Is always Zero D. None of these
61	One degree of thermodynamics scale of temperature is called:	A. Celsius B. Fahrenheit C. Kelvin D. Radian
62	Petrol engine coverts _____ of available heat energy into work.	A. 20% to 25% B. 25% to 30% C. 30% to 35% D. 35% to 40%
63	Diesel engine coverts _____ of available heat energy into work.	A. 20% to 25% B. 25% to 30% C. 30% to 35% D. 35% to 40%
64	A certain engine coverts 20% of available heat energy into work. Then its efficiency will be:	A. 20% B. 80% C. 50% D. None of these
65	No of spark plugs needed in diesel engine is:	A. Four B. Five C. Six D. None of these
66	Most motorbikes have _____ cylinder/s engine but cars usually have _____ cylinders on the same crankshaft.	A. Four , Six B. One , four C. two , five D. None of these