ECAT Pre General Science Physics Online Test

Sr	Questions	Answers Choice
1	The power factor of resonant series circuit is	A. 1 B. 0 C. -1 D. 0.5
2	In RLC series circuit, resonance occurs when	A. X_{L > Xc} B. X_{L < Xc} C. X_{L = Xc} D. None of these
3	A resonance curve for RLC series circuit is a plot of frequency versus	A. Voltage B. Current C. Impedance D. Reactance
4	The r.m.s. value of alternating current is equal to its maximum value at angle of	A. 60° B. 45° C. 30° D. 90°
5	The device which allows only the flow of an A.C. through a circuit is	A. Capacitor B. Inductor C. D.C. motor D. Battery
6	Alternating current can induce voltage because it has a	A. High peak value B. Varying magnetic field C. Stronger field than direct curren D. Constant magnetic field
7	An A.C varies as a function of	A. Current B. Voltage C. Time D. Charge
8	At higher frequency of the alternating current, the capacitive reactance X_C	A. Increases B. Decreases C. Remains the same D. Increases only when the voltage increases
9	Which one of the following is correct?	A. V_o= 1.414 V_{rms} B. I_{ams}= 1.414 I_o C. VO = 10.70 Vrms D. Both a and b
10	In an A.C circuit with resistor only, the current and voltage have a phase angle of	A. 90° B. 0° C. 180° D. none of these
11	The basic circuit elements of A.C circuit are	A. Resistor B. Inductor C. Capacitor D. All the three
12	During each cycle, alternating voltage reaches a peak value	A. One time B. Two times C. Four times

		D. A number of times depending on the frequency
13	The average of A.C. current and voltage over a complete cycle is	A. Maximum B. zero C. Neither zero nor maximum D. None of these
14	Carnot heat engine only used	A. isothermal processes B. adiabatic processes C. both of them D. none of them
15	Sadi carnot described an ideal heat engine in	A. 1820 B. 1840 C. 1860 D. 1880
16	We cannot utilize the heat contents of oceans and atmosphere because	A. there is no reservoir at the same temperature B. there is no reservoir at the temperature lower than any one of two C. there is no reservoir at the temperature higher than any one of two D. none of them
17	For the working of a heat engine, there must be	A. a source of heat at high temperature B. a sink at low temperature C. both of them D. none of them
18	According to the second law, which is must to produce work	A. a source contains a large amount of heat energy B. two sources at the same temperature C. two sources at the different temperatures D. a source contains a small amount of energy
19	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'sstatement of second law C. Clausius statement of first law D. Kelvin's statement of first law
20	The percentage of available heat energy converted into work by a diesel engine is roughly	A. 35 %` B. 40 % C. 35 - 40 % D. 25 %
21	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 %
22	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
23	First law of thermodynamics tells us that heat energy can be converted into equivalent amount of work, but it is silent about	A. how heat is absorbed B. how heat extracted C. how this conversion takes place D. none of them
24	In a heat engine, heat is supplied by the	A. cold reservoir B. sink C. hot reservoir D. none of them
25	The earliest heat engine was	A. petrol engine B. diesel engine C. electric engine D. steam engine
26	A heat engine is that which converts	A. mechanical energy into thermal energy B. thermal energy into mechanical energy C. K.E into potential energy D. heat energy into light energy
27	The example of irreversible process is	A. slowly liquification B. slowly evaporation C. an explosion D. all of them

28	The example of reversible process is	A. an explosion B. changes occur suddenly C. slow compression of a gas D. all of them
29	If a process cannot be retraced in the backward direction by reversing the controlling factors, it is	A. a reversible process B. an irreversible process C. any one of them D. both of them
30	A reversible cycle is the one in which	A. some of the changes are reversible B. all of the changes are reversible C. all of the changes are irreversible D. none of them