

## ECAT Physics Online Test

Sr	Questions	Answers Choice
1	Work done along a closed path in a gravitational force is:	A. maximum B. Minimum C. Zero D. Unity
2	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
3	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
4	In the doping process, the ratio of the doping atoms to the semi conductor atom is	A. 1 to 10 B. 1 to $10^3$ C. 1 to $10^6$ D. 1 to $10^9$
5	Ultra-violet rays differ from X-rays in that they	A. Cannot be diffracted B. Cannot be polarized C. Have a lower frequency D. Are deviated when they pass through a magnetic field
6	The velocity of sound at same temperature is maximum in	A. $H^2$ B. $N^2$ C. $O^2$ D. $NH^3$
7	If one volt is needed to cause a current of one ampere to flow in a conductor, its resistance is	A. one ohm B. one joule C. one volt D. one ampere
8	Compton studied the scattering of x-rays by loosely bound electrons from:	A. NaCl crystal B. Graphite crystal C. Zirconia D. Copper crystal E. None of these
9	The half life of uranium-238 is	A. $6.2 \times 10^9$ years B. $4.5 \times 10^9$ days C. $4.5 \times 10^9$ years D. $1.3 \times 10^6$ years
10	The vertical and horizontal range will be equal id angle of projection is	A. $76^\circ$ B. $45^\circ$ C. $60^\circ$ D. $120^\circ$
11	When the emitter-base junction of a transistor is reverse biased, collector current	A. Reverses B. Increases C. Decreases D. Stops
12	A weakly damped system has fairly	A. sharp resonance curve B. flat resonance curve C. both of them D. none of them
13	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

14	When the waveform of one voltage is increasing and that of second is decreasing and vice versa, then phase difference between these voltage is	<p>A. <math>90^\circ</math></p> <p>B. <math>75^\circ</math></p> <p>C. <math>0^\circ</math></p> <p>D. <math>180^\circ</math></p>
15	According to the de-Broglie relation, an object of large mass and ordinary speed has	<p>A. very small wavelength</p> <p>B. very large wavelength</p> <p>C. very small frequency</p> <p>D. all of these</p>
16	There is no way to detect:	<p>A. Absolute uniform motion</p> <p>B. Accelerated motion</p> <p>C. State rest</p> <p>D. State of motion</p> <p>E. None of these</p>
17	A mass of 5kg moves with an acceleration of $10\text{m s}^{-2}$ force applied is	<p>A. <math>10\text{N}</math></p> <p>B. <math>50\text{N}</math></p> <p>C. <math>2\text{N}</math></p> <p>D. <math>20\text{N}</math></p>
18	When a person jumps off the ground, the reaction force of the ground is	<p>A. greater than the weight of the person</p> <p>B. smaller than the weight of the person</p> <p>C. equal to the weight of the person</p> <p>D. zero</p>
19	A metal plate of thickness half the separation between the capacitor plates of capacitance C is inserted. The new capacitance is	<p>A. C</p> <p>B. <math>C/2</math></p> <p>C. Zero</p> <p>D. <math>2C</math></p>
20	According to Einstein, with the great increase in the speed of the body the relativistic length of the body	<p>A. Remains constant</p> <p>B. Decreases</p> <p>C. Increases</p> <p>D. Reduces to zero</p>