

## ECAT Physics Online Test

Sr	Questions	Answers Choice
1	The phase angle of a series RLC circuit at resonance is	<p>A. <math>180^\circ</math></p> <p>B. <math>90^\circ</math></p> <p>C. <math>0^\circ</math></p> <p>D. None of these</p>
2	When a nucleus emits an alpha particle, its atomic mass decreases by	<p>A. 2</p> <p>B. 1</p> <p>C. 4</p> <p>D. 3</p>
3	The reverse saturation current in a PN junction diode is only due to	<p>A. Majority carriers</p> <p>B. Minority Carriers</p> <p>C. Acceptor ions</p> <p>D. Donor ions</p>
4	When a positron comes close to an electron they annihilate into photons such that	<p>A. each photon has energy <math>0.51 \text{ MeV}</math></p> <p>B. each photon has energy <math>1.02 \text{ MeV}</math></p> <p>C. each photon has energy <math>0.25 \text{ MeV}</math></p> <p>D. none of these</p>
5	Since the absolute scale is independent of the property of the working substance, hence, it can be applied at	<p>A. very high temperature</p> <p>B. very low temperature</p> <p>C. any one of them</p> <p>D. none of them</p>
6	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>
7	When a mass 'm' is pulled slowly, the spring stretches by an amount $x_0$ , then the average force would be	<p>A. <math>F = Kx_0</math></p> <p>B. <math>F = \frac{1}{2}Kx_0</math></p> <p>C. <math>F = 2Kx_0</math></p> <p>D. <math>F = 4Kx_0</math></p>
8	The weight 'mg' of the bob is resolved into	<p>A. one component</p> <p>B. two components</p> <p>C. three components</p> <p>D. four components</p>
9	The vertical component of velocity of a projectile during its motion is minimum	<p>A. at the time of projection</p> <p>B. at the highest point</p> <p>C. just before hitting the plane of projection</p> <p>D. all of them</p>
10	Concave surface is convex	<p>A. Rectangular</p> <p>B. Spherical</p> <p>C. ...</p>

Roman&quot;, &quot; serif&quot;; mso-fareast-font-family: &quot; Times New Roman&quot;; mso-fareast-theme-font: minor-fareast" > Cylindrical < / o: p > < / o: p > < / span > < / p >

D. < p class= "MsoNormal" > < span style= "font-size: 12.0pt; line-height: 107%; font-family: &quot; Times New Roman&quot;, &quot; serif&quot;; mso-fareast-font-family: &quot; Times New Roman&quot;; mso-fareast-theme-font: minor-fareast" > Box shape < o: p > < / o: p > < / span > < / p >

E. < p class= "MsoNormal" > < span style= "font-size: 12.0pt; line-height: 107%; font-family: &quot; Times New Roman&quot;, &quot; serif&quot;; mso-fareast-font-family: &quot; Times New Roman&quot;; mso-fareast-theme-font: minor-fareast" > Any of these < o: p > < / o: p > < / span > < / p >

11	A real gas can be approximated to an ideal gas at	A. Low density B. High pressure C. High density D. Low temperature
12	An electric dipole is at the centre of a hollow sphere of radius $r$ . The total normal electric flux through the sphere is (here $Q$ is the charge and $d$ is the distance between the two charges of the dipole)	A. $Q/4\pi r^2$ B. $2Q/4\pi r^2$ C. $Q.d$ D. Zero
13	Most OP-AMP operates with	A. $\pm 6$ V supply B. $\pm 10$ V supply C. $\pm 12$ V supply D. $\pm 24$ V supply
14	The law of conservation of energy gives us	A. equation of continuity B. Bernoulli's theorem C. both of them D. none of them
15	An isochoric process is one which take place at	A. Constant internal energy B. Constant entropy C. Constant volume D. Constant pressure
16	A wire is bent into a ring of radius $R$ is given a charge $q$ . The magnitude of the electrical field at the centre of the ring is	A. Two B. $1/2$ C. Zero D. $3/2$
17	The example of irreversible process is	A. slowly liquification B. slowly evaporation C. an explosion D. all of them
18	The efficiency of carnot engine cannot be 100% or one unless cold reservoir is at	A. 100 K B. 273 K C. 0 K D. -273 K
19	The application of Bernoulli's equation is	A. Torricelli's theorem B. Venture relation C. Binomial theorem D. Both a and b
20	The first super conductor was discovered in	A. 1811 B. 1890 C. 1901 D. 1911