ECAT Physics Online Test

Sr	Questions	Answers Choice
1	The speed of a pendulum is measured to be 3.0 s in the inertial reference frame of the pendulum. What is its period measured by an observer moving at a speed of 0.95 c with respect to the pendulum	A. 2.9 s B. 3.0 s C. 6.6 s D. 9.6 s
2	According to the special theory of relativity, time is	A. absolute quantity B. not absolute quantity C. constant quantity D. none of these
3	The special theory of relativity is based on the	A. one postulate B. two postulates C. three postulates D. four postulates
4	The general theory of relativity treats problems involving	A. inertial frame of references B. accelerating frame of references C. both of these D. none of these
5	The special theory of relativity treats problems invoving	A. inertial frame of references B. accelerating frame of references C. both of these D. none of these
6	A non-inertial frame of reference is one, in which	A. law of inertial is valid B. all laws of physics are the same in all frames C. a>0 or a<0 D. a=0
7	An inertial frame is that frame in which	A. a>0 B. a=0 C. a<0 D. none of these
8	Which of the following is not an example of intertial frame	A. a body placed on the surface of earth B. a body placed in a car moving with uniform velocity C. a body placed in a car moving with same acceleration D. none of these
9	An intertial frame of reference is a frame of reference which is	A. at rest B. moving with uniform velocity C. either at rest or moving with uniform velocity D. none of these
10	Absolute motion cannot be detected	A. in its own frame of references B. in a different frame of references C. both in its frame and different frame of references D. none of these
11	The concept of direction and position are purely	A. absolute B. relative C. absolute or relative D. none of these
12	Electron gun consist of	A. three anodes B. heating cathode C. three anodes D. three anodes , heating cathode, grid
13	A beam of electrons is provided by an	A. electron gun B. Suppray C. Injection D. None of these
14	Flurescent screen is a screen where visible spot	A. vanishes B. is made C. becomes small and large

		D. none of these
15	The CRO deflects the beam of electrons, when they passes through uniform	A. electric field B. gravitational field C. magnetic flax D. magnetic field
16	CRO deflects the beam of	A. proton B. a-particle C. electron D. neutron
17	(CRO) Cathode ray oscilloscope is a device used for high speed	A. velocity B. graph plotting C. time-velocity D. none of these
18	A magnetic force on an electron travelling with $10^8 ms^{-1}$ parallel to a field of strength 1 Wb m^{-2} is	A. Zero B. 10⁵m C. 10⁻¹⁰N D. 10⁸N
19	The magnetic force exerted on an electron moving with velocity 'v' at right angle to the magnetic field is given by	A. F=eVB B. F=e²V/B C. F=e/VB D. F=B²/ev
20	A charged particle moving at right angle to the magnetic field will experience	A. minimum force B. maximum force C. zero D. moderate force
21	When charged particle is projected perpendicular to a uniform magnetic field its trajectory is	A. circular B. elliptical C. cycloid D. straight line
22	Charge to mass ratio (e/m) of an electron is given by the relation	A. e/m = 2V/Br² B. e/m = 2V/B²r C. e/m = 2V/B²r² D. e/m = V/2B²r²
23	The e/m of an electron moving in a circular path in a magnetic field is equal to	A. V/Br B. V/B²r² C. V²/Br² D. V²/Br
24	Centripetal force for electron is given by	A. mv²/ r B. mv / r² C. mv²/ r D. mr²/ v
25	When an electron enters in a magnetic field right angle to its motion, the magnitude of its velocity will be	A. changed B. zero C. unchanged D. none of these
26	In the expression of force experienced by electron, the direction of both v and B are	A. parallel B. zero C. perpendicular D. none of them
27	If volume of wire is 'AL' and there are 'n' numbers of charge carriers per unit volume, then the total number of charge carriers are	A. n/AL B. Al/n C. nAL D. nA/L
28	Lorentz force is defined as	A. q(E + V x B) B. q(E x B + V) C. q(E x V + B) D. q(E x B)
29	The force experienced by charged particle is maximum, if it moves	A. parallel to magnetic field B. perpendicular to magnetic field C. opposite to the magnetic field D. none of these
30	41 The force experience, when proton projected in a magnetic field with velocity 'v' is	A. +e(v x B) B. -C(V x B) C. +e²(v x B) D. -e(v²x B)