

## Physics ECAT Pre Engineering Online Test

Sr	Questions	Answers Choice
1	A high temperature, the proportion of shorter wavelengths radiation, emitted by the body	A. decreases B. first increases then decreases C. <b>increases</b> D. any one of them
2	At the temperature, a body emits radiation which is principally	A. of long wavelengths in the visible region B. <b>of long wavelengths in the invisible infrared region</b> C. of short wavelength in invisible ultraviolet region D. none of these
3	According to the special theory of relativity, a moving clock	A. runs faster B. <b>runs slower</b> C. neither runs faster nor slower D. all of these
4	Newton's law of motion do not hold in	A. <b>an accelerated frame of reference</b> B. an unaccelerated frame of reference C. both of these D. none of these
5	The location and speed anywhere on earth can now be determined using relativistic effects by NAVISTAR to an accuracy of	A. <b>2 cm/s</b> B. 20 cm/s C. 200 cm/s D. 2000 cm/s
6	According to the special theory of relativity	A. mass and energy are same entities B. mass and energy are same entities but interconvertible C. <b>mass and energy are different entities but interconvertible</b> D. mass and energy are different entities but non-interconvertible
7	The mass of an object will be doubled at speed	A. $1.6 \times 10^{18} \text{ ms}^{-1}$ B. <b><math>2.6 \times 10^{18} \text{ ms}^{-1}</math></b> C. $2.6 \times 10^{17} \text{ ms}^{-1}$ D. $2.6 \times 10^{19} \text{ ms}^{-1}$
8	The mass 'm' of a body moving at 0.8 c (whose rest mass is $m_0$ ) becomes	A. $2 m_0$ B. <b><math>1.67 m_0</math></b> C. $0.67 m_0$ D. $2.67 m_0$
9	The Einstein's changes in length, mass and time are not observed in common life because	A. We dont observer then seriously B. The masses are too large C. <b>Their speed is too small than the speed of light</b> D. All of the above
10	If a body reaches a speed equal to the speed of light, then its mass will became	A. zero B. very small C. <b>infinity</b> D. none of these
11	If a material object moves with the speed of light 'C' its mass becomes	A. Equal to its rest mass B. Four times of its rest mass C. Double of its rest mass D. <b>Infinite</b>
12	Which one of the following physical quantities changes with relativistic speed	A. Length B. Mass C. Time D. <b>All of the above</b>
13	According to Einstein, with the great increase in the speed of the body, the relativistic mass of the body	A. Remains constant B. Decreases C. <b>Increases to infinity</b> D. Becomes zero

		D. Reduced to zero
14	A bar 1.0 m in length and located along x-axis moves with a speed of 0.75 c with respect to a stationary observer. The length of the bar as measured by the stationary observer is	A. 1.66 m B. 1.0 m C. 0.66 m D. 2.66 m
15	If you are moving at relativistic speed between two points that are a fixed distance apart, then the distance between the two points appears	A. larger B. shorter C. equal D. none of these
16	According to Einstein, with the great increase in the speed of the body the relativistic length of the body	A. Remains constant B. Decreases C. Increases D. Reduces to zero
17	The length contraction happens only	A. Opposite to the direction of motion B. along the direction of motion C. perpendicular to the direction of motion D. In any direction
18	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
19	According to the special theory of relativity, time is	A. absolute quantity B. not absolute quantity C. constant quantity D. none of these
20	The special theory of relativity is based on the	A. one postulate B. two postulates C. three postulates D. four postulates
21	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
22	The special theory of relativity treats problems involving	A. inertial frame of references B. accelerating frame of references C. both of these D. none of these
23	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. $a \geq 0$ or $a \leq 0$ D. $a = 0$
24	An inertial frame is that frame in which	A. $a \geq 0$ B. $a = 0$ C. $a \leq 0$ D. none of these
25	Which of the following is not an example of inertial 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
26	An inertial 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
27	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
28	The concept of direction and position are purely	A. absolute B. relative C. absolute or relative D. none of these
29	Electron gun consist of	A. three anodes B. heating cathode C. three anodes D. three anodes , heating cathode, grid

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A beam of electrons is provided by an

A. electron gun

B. Suppray

C. Injection

D. None of these