

ECAT Pre General Science Physics Chapter 19 Dawn of Modern Physics

Sr	Questions	Answers Choice
1	The threshold frequency of sodium is 6×10^6 MHz. The cut-off wavelength for this metal will be	A. 500 m B. 500 nm C. 500 km D. 500 cm E. None of these
2	The existence of positron was predicted by Dirac in	A. 1920 B. 1925 C. 1930 D. 1928
3	The special theory of relativity is based on the	A. one postulate B. two postulates C. three postulates D. four postulates
4	The energy of photon 'E' is proportional to	A. The magnetic field H B. The electric field E C. Both the electric and magnetic field H and E D. Frequency
5	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
6	Newton's law of motion do not hold in	A. an accelerated frame of reference B. an unaccelerated frame of reference C. both of these D. none of these
7	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
8	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
9	According to the special theory of relativity	A. mass and energy are same entities B. mass and energy are same entities but interconvertible C. mass and energy are different entities but interconvertible D. mass and energy are different entities but non-interconvertible
10	Which one of the following physical quantities changes with relativistic speed	A. Length B. Mass C. Time D. All of the above
11	In process of annihilation of matter, the two photons produced move in opposite direction to conserve	A. momentum B. charge C. energy D. mass
12	The photon of radio-waves has energy of about	A. 1 MeV B. 1 KeV C. 10^{-10} eV D. 10^{10} eV
13	Electromagnetic radiation or photons interact with matter in	A. two distinct ways B. three distinct ways C. four distinct ways D. five distinct ways

14	When a positron comes close to an electron they annihilate into photons such that	<p>A. each photon has energy 0.51 Me v</p> <p>B. each photon has energy 1.02 Me v</p> <p>C. each photon has energy 0.25 Me v</p> <p>D. none of these</p>
15	Due to relative motion of observer and the frame of reference of events, time always:	<p>A. Dilates itself</p> <p>B. Contracts itself</p> <p>C. Stretches itself</p> <p>D. Both (A) and (C)</p> <p>E. None of these</p>
16	Compton was awarded Nobel prize in physics in	<p>A. 1921</p> <p>B. 1923</p> <p>C. 1925</p> <p>D. 1927</p>
17	In order to produce pair production, a photon must have a energy	<p>A. 0.511 Me v</p> <p>B. 0.256 Me v</p> <p>C. 1.02 Me v</p> <p>D. 0.956 Me v</p>
18	The energy of the 4th orbit in hydrogen atom is	<p>A. 2.5 ev</p> <p>B. - 3.5 ev</p> <p>C. -0.85 ev</p> <p>D. -13.6 ev</p>
19	de-Broglies hypothesis was experimentally verified by	<p>A. Maxwell</p> <p>B. Compton</p> <p>C. Einstein</p> <p>D. Davison and Germer</p>
20	0.1 kg mass will be equivalent to the energy	<p>A. 9×10^{15} J</p> <p>B. 5×10^8 J</p> <p>C. 6×10^{16} J</p> <p>D. 9×10^{-16} J</p>