# ECAT Physics Chapter 19 Dawn of Modern Physics

| Sr | Questions | Answers Choice |
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| 1 | Converse of pair production is known as | A. Compton effect<br>B. annihilation of matter<br>C. photoelectric effect<br>D. none of these |
| 2 | The special theory of relativity is based on the | A. one postulate<br>B. two postulates<br>C. three postulates<br>D. four postulates |
| 3 | The photoelectric effect, the maximum energy of photoelectrons depends on the | A. particular metal surface<br>B. frequency of incident light<br>C. both of them<br>D. none of them |
| 4 | The year when A.H. compton was awarded Nobel Prize is: | A. 1923<br>B. 1927<br>C. 1931<br>D. 1935<br>E. None of these |
| 5 | The concept of direction is purely: | A. Absolute<br>B. Relative<br>C. Relative to stars always<br>D. Relative to the sun always<br>E. None of these |
| 6 | If a body reaches a speed equal to the speed of light, then its mass will became | A. zero<br>B. very small<br>C. infinity<br>D. none of these |
| 7 | Compton studied the scattering of x-rays by loosely bound electrons from: | A. NaCl crystal<br>B. Graphite crystal<br>C. Zirconia<br>D. Copper crystal<br>E. None of these |
| 8 | A non-inertial frame of reference is one, in which | A. law of inertial is valid<br>B. all laws of physics are the same in all frames<br>C. a>0 or a<0<br>D. a=0 |
| 9 | the symbol to be used in relativity problems denotes: | A. Dilated time<br>B. Proper time<br>C. Life time<br>D. Half time<br>E. None of these |
| 10 | The concept of direction and position are purely | A. absolute<br>B. relative<br>C. absolute or relative<br>D. none of these |
| 11 | 0.1 kg mass will be equivalent to the energy | A. 9 x 10<sup>15</sup>J<br>B. 5 x 10<sup>8</sup>J<br>C. 6 x 10<sup>16</sup>J<br>D. 9 x 10<sup>-16</sup>J |
| 12 | The Stephen-Boltzmann law for the black body radiation is given by | A. E = T<sup>2</sup><br>B. E = -T<sup>2</sup><br>C. E = T<sup>4</sup><br>D. E = -T<sup>4</sup> |
| 13 | Momentum is a parameter associated with | A. wave motion<br>B. particle motion<br>C. neither wave nor particle motion<br>D. none of these |
| 14 | At the temperature, a body emits radiation which is principally | A. of long wavelengths in the visible region<br>B. of long wavelengths in the invisible infrared region |

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| | | C. of short wavelength in invisible ultraviolet region<br>D. none of these |
| 15 | If the radius of first orbit of hydrogen atom is 0.53° A the radius of second orbit will be | A. 2.120°A<br>B. 0.212°A<br>C. 21.2°A<br>D. 0.14° a |
| 16 | The value of the plank's constant 'h' is given by | A. 1.6 x 10<sup>-19</sup>J<br>B. 1.67 x 10<sup>-27</sup>Kg<br>C. 6.63 x 10<sup>34</sup>Js<br>D. 6.63 x 10<sup>-34</sup>Js |
| 17 | According to Einstein, with the great increase in the speed of the body, the relativistic mass of the body | A. Remains constant<br>B. Decreases<br>C. Increases to infinity<br>D. Reduced to zero |
| 18 | The threshold frequency of sodium is 6 x $10^6$MHz. The cut-off wavelength for this metal will be | A. 500 m<br>B. 500 nm<br>C. 500 km<br>D. 500 cm<br>E. None of these |
| 19 | In the compton's effect, it is found that the wavelength of incident x-rays is | A. greater than the wavelength of scattered x-rays<br>B. equal to the wavelength of scattered x-rays<br>C. less than the wavelength of scattered x-rays<br>D. any one of these |
| 20 | Photocell is a device which converts | A. chemical energy into electrical energy<br>B. electrical energy into light energy<br>C. heat energy into electrical energy<br>D. light energy into electrical energy |