

Dept. of Physics
Degloor College, Degloor

MCQ Practice Exam.

Paper: XII

Unit: I Particle Properties of Light

B.Sc. TY

1. According to quantum theory of light, changing intensity of monochromatic light beam will change..
 - a) Energy of photoelectrons
 - b) Number of photoelectrons
 - c) Both Energy and no. of photoelectrons
 - d) None of these
2. According to Einstein, Photoelectric effect equation is
 - a) $h\nu = KE_{Max} - \phi$
 - b) $h\nu = KE_{Max} \times \phi$
 - c) $h\nu = KE_{Max}/\phi$
 - d) $h\nu = KE_{Max} + \phi$
3. Scattering of a photon by an electron is
 - a) Compton effect
 - b) Photoelectric effect
 - c) Zeeman Effect
 - d) Heisenberg principle
4. Photon momentum is
 - a) $p = \frac{E}{c}$
 - b) $p = \frac{h\nu}{c}$
 - c) $p = \frac{h}{\lambda}$
 - d) All of these
5. The value of Compton wavelength of scattering particle is
 - a) 2.426 μ m
 - b) 2.426 nm
 - c) 2.426pm
 - d) 2.426mm
6. Matter waves
 - a) Exhibit diffraction
 - b) Are transverse waves
 - c) Are longitudinal waves
 - d) Stationary waves
7. de- Broglie phase velocity is
 - a) $v_p = \frac{c}{v}$
 - b) $v_p = \frac{c^2}{v}$
 - c) $v_p = \frac{v^2}{c}$
 - d) $v_p = \frac{c^2}{v^2}$
8. Heisenberg uncertainty principle is
 - a) $\Delta x \Delta p \geq \frac{\hbar}{2}$
 - b) $\Delta x \Delta p \leq \frac{\hbar}{2}$
 - c) $\Delta x \Delta p = \frac{\hbar}{2}$
 - d) None
9. According to quantum theory, light has
 - a) particle nature only
 - b) wave nature only
 - c) dual nature
 - d) no nature
10. Energy of photon is
 - a) $E = h\nu$
 - b) $E = h/\nu$
 - c) $E = \nu/h$
 - d) $E = 1/h\nu$

