Physics - 12th Class Physics Chapter 8 Short Questions Preparation

Q1. When does light behaves as a wave?When does light behaves as a particle?

Ans 1: Light behave as a wave when it propagates from one place to other and light behave as a particle when it interacts with matter,Light behaves as a wave in interference and diffraction,Light behaves as a particle in photoelectric and Compton effect.

Q2. What do you know by annihilation of matter?

Ans 1: When a positron comes close to an electron,they annihilate and produce two photons in the gamma rays range.It is called annihilation of matter.

Q3. What advantage of an electron microscope has over an optical microscope?

Ans 1:

- Resolving power of an electron microscope is 1000 times greater than that of optical microscope.
- Magnification of an electron microscope is also about 1000 times greater than that of optical microscope.
- 3-D image of remarkable quality can be obtained by electron.

Q4. Will the bright light ejects more from metal surface than dimmer light of tha same colour?

Ans 1: Since intensity number of electrons.
and bright lightis more intensethan dimmer one.So bright light will ejects more electrons than dimmer light.

Q5. Differentiate between special theory of relativity and general theory of relativity.

Ans 1: The special theory of relativity treats problem involving inertial or non accelerating frame of reference.

Ans 2: The general theory of relativity treats problem involving frames of reference accelerating with respect to one another.

Q6. What are conclusion made from the pair production?

Ans 1: Pair production is the creation of an elementary particle and its antiparticle,Pair production offers refers specifically to a photon creating an electron positron pair near a nucleus but can more generally refer to any particle antiparticle pair creation. Energy can be converted into mass according to $E=mc^2$

Q7. Define Compton effect.

Ans 1: The phenomena of increase in wavelength of x rays photon scattered by loosely bound electrons from a graphite target is called Compton Effect.

Q8. Why can red light be used in a photographic dark room when developing films,but a blue or white light can not?

Ans 1: As we known red light has longest wavelength in visible spectrum,therefore it has less energy than that of blue or white light.So red light is least scattered on account of its large wavelength.Hence photographic films and the materials concerned are less affected in the presence of red light than high energy blue of white light.

Q9. Distinguished between photoelectric effect and Compton effect.

Ans 1: The emission of electron from a metal surface when exposed to suitable frequency light is called photoelectric effect and when x rays are scattered by loosely bound electrons from graphite target the phenomena of change in wavelength is known as compton effect.

Q10. Define Stopping potential and Threshold frequency.

Ans 1: Stopping potential:The stopping potential is the potential difference applied to stop the electrons from being ejected from the surface when the light fall on it.
Threshold frequency:The minimum of frequency of incident light at which electrons are emitted from a surface is called threshold frequency.
