Objective Type Questions & Answers

Select the best answer for the following MCQs:

1) The idea of the particle nature of light was given by.

(a) Huygen (b) Maxwell (c) Newton (d) Thomas Young

2) The idea of the wave nature of light was proposed by.

a) Thomas Young (b) Fresnel (c) Maxwell (d) Huygen

3) Electromagnetic waves transport.

(a) energy (b) momentum

(c) both energy and momentum (d) none of these

4) Which one of the following properties of light does not change with the nature of the medium.

(a) amplitude (b) wavelength (c) frequency (d) velocity

5) Light reaches the Earth from Sun in nearly.

(a) 8 minutes (b) 8 minutes & 30 seconds

(c) 10 minutes (d) 12 minutes

6) Photoelectric effect can be explained if the light is considered to have.

(a) wave nature (b) particle nature (c) dual nature (d) none

7) Longitudinal waves do not exhibit (show).

(a) reflection (b) refraction (c) diffraction (d) polarization

8) The locus of all the points in a medium having the same phase of vibration is called,

(a) crest (b) trough (c) wave front (d) wave length

9) Huygen's Principle states that,

(a) light travels in straight lines

(b) light travels in electromagnetic waves

(c) all points on the primary wave front are the source of secondary wave let

(d) light has dual nature

10) In Young's Double Slit experiment, the fringe spacing is equal to,

(a) $\frac{d}{\lambda L}$ (b) $\frac{2\lambda L}{d}$ (c) $\frac{2\lambda}{d}$ (d) $\frac{\lambda d}{L}$

11) In a Young's Double Slit experiment, the positions of bright fringes are given by.

(a) $y = m\frac{\lambda L}{d}$ (b) $y = \left(m + \frac{1}{2}\right)\frac{\lambda L}{d}$ (c) $y = m\frac{\lambda L}{2d}$ (d) $y = 2m\frac{\lambda L}{2d}$

12) In a Young's Double Slit experiment, the positions of dark fringes are given by.

(a) $y=\left(m+\frac{1}{2}\right)\frac{\lambda L}{d}$ (b) $y=m\frac{\lambda L}{d}$ (c) $y=\left(m-\frac{1}{2}\right)\frac{\lambda L}{d}$ (d) $y=2m\frac{\lambda L}{2d}$

13) The velocity of light was determined by,

(a) Newton (b) Michelson (c) Huygen (d) Young

14) Soap film in sun light appears colored due to

(a) dispersion of light (b) diffraction of light

(c) scattering of light (d) interference of light

15) A white light when passed through a prism is.

(a) deviated (b) diffracted (c) dispersed (d) polarized

16) A light ray traveling from rare to denser medium suffers a phase change of.

(a) 45° (b) 60° (c) 90° (a) 180°

17) The phase change of 180 U is equal to the path difference of.

(a) λ (b) $\lambda/2$ (c) 2λ (d) 3λ

18) When Newton's rings interference is seen from the above by means of reflected light the central point is.

(a) bright (b) dark (c) blue (d) red

19) The wavelength of X-rays is of the order of.

(a) 1 A° (b) 10 A° (c) 100 A° (d) 1000 A°

20) The equation for Michelson's Interferometer is,

(a) $L = m\frac{\lambda}{2}$ (b) $L = m\lambda$ (c) $L = 2m\lambda$ (d) $L = \frac{2}{3}m\lambda$

21) Polarization of light shows that light is.

(a) corpuscular in nature (b) longitudinal waves

(c) transverse waves (d) none of these

22) A Polaroid is.

(a) a device used in polar meter (b) a light filter

(c) an adjustable shutter (d) none of these

23) Which of the following cannot be polarized.

(a) X-rays (b) radio waves (c) ultraviolet rays (d) sound waves

24) One Angstrom is equal to.

(a) 10^{-8} cm (b) 10^{-6} m (c) 10^{-8} nm (d) 10^{-10} mn

25) Diffraction is a special type of.

(a) polarization (b) interference (c) reflection (d) none of these