Sainath Education Trust's
Rajiv Gandhi College
of Arts, Commerce, & Science.Vashi Navi Mumbai.
{Permanently Affiliated to University Of Mumbai}
ACCREDITED BY NAAC, GRADE 'B'

Sample Multiple Choice Questions

Class: S.Y.B.Sc.

Subject: PHYSICS PAPER – I

Semester: IV

1. How many lenses are used in Fraunhofer Diffraction?
a) Two Convex lenses
b) Two Concave lenses
c) One Convex lens
d) No lens used

Ans. d

2. If the separation between the two slits in Double Slit Fraunhofer Diffraction is changed, what change will be observed in the diffraction pattern?
a) The fringe length will increase
b) The fringe length will decrease
c) Fringes will be colored
d) No change

Ans. d

3. In Fresnel diffraction, the relative phase difference between the curved wavefront is _____
a) Constant
b) Zero
c) Linearly increasing
d) Non-constant

Ans. d

4. In Fresnel Diffraction, the incident wavefront is _____
a) Hyperbolic
b) Linear
c) Spherical
d) Elliptical

Ans. c

5. The radius of the half period zone is proportional to _____
a) The wavelength of light
b) The square root of the frequency of light
c) The square root of the wavelength light
d) The frequency of light

Ans. c

6. In Double Slit Fraunhofer Diffraction, some orders of interference pattern are missing. It is called _____
a) Missing Spectra
b) Absent Spectra
c) End Spectra
d) Emission Spectra

Ans. b

7. Light of 5000 Å is incident on a circular hole of radius 1 cm. How many half period zones are contained in the circle if the screen is placed at a distance of 1 m?
a) 20
b) 200
c) 2000
d) 20000

Ans. d

8. The zone plate behaves like a _____
a) Concave Lens with multiple foci
b) Convex Lens with multiple foci
c) Convex Lens with single foci
d) Concave Lens with single foci

Ans. b

9. Find the missing order for a double-slit Fraunhofer Diffraction pattern if the slit widths are 0.2 mm separated by 0.6 mm.
a) 1^{st}, 5^{th}, 9^{th}, ….
b) 2^{nd}, 6^{th}, 10^{th}, …
c) 3^{rd}, 7^{th}, 11^{th}, ….
d) 4^{th}, 8^{th}, 12^{th},

Ans. d

10. A linearly polarized wabe is always _____
a) In x-y plane
b) A Transverse wave
c) A Longitudinal wave
d) In y-z plane

Ans. b

11. The direction in which the electric vectors oscillate in a polarized wave is called as _____

a) Polarizing axis
b) Plane of polarization
c) Pass axis
d) Propagating axis

Ans. c

12. If the phase difference between two rays is $\pi/2$ and the angle of incidence is equal to $\pi/4$, the emergent light is _____

a) Linearly Polarized
b) Elliptically Polarized
c) Circularly Polarized
d) Non-Polarized

Ans. c

13. The velocity of light in water is 1.5×10^8 m/s. What is the polarizing angle of incidence?

a) 47.23°
b) 51.02°
c) 53.74°
d) 63.43°

Ans. d

14. What should be the thickness of quarter-wave plate for a light of wavelength 5000 Å if $\mu_e = 1.553$ and $\mu_o = 1.544$?

a) 1.38×10^{-3} cm
b) 1.43×10^{-3}cm
c) 1.53×10^{-3}cm
d) 1.63×10^{-3} cm

Ans. a

15. Unpolarized light is incident on a plane glass surface. What should be the angle of incidence such that the reflect and refracted rays are perpendicular to each other?

a) 90°
b) 45°
c) 57°
d) 60°

Ans. c

16. A plate which induces the desired amount of phase difference between two rays is known as _____

a) Polaroid
b) Phasor plates
c) Retardation Plates
d) Quartz plates

Ans. c

17. Which of the following is not a positional number system?
a) Roman Number System
b) Octal Number System
c) Binary Number System
d) Hexadecimal Number System

Ans. a

18. The value of radix in binary number system is _____
a) 2
b) 8
c) 10
d) 1

Ans. a

19. The binary equivalent of the decimal number 10 is _____
a) 0010
b) 10
c) 1010
d) 010

Ans. c

20. A computer language that is written in binary codes only is _____
a) machine language
b) C
c) C#
d) pascal

Ans. a

21. The octal equivalent of 1100101.001010 is _____
a) 624.12
b) 145.12
c) 154.12
d) 145.21

Ans. b

22. The input hexadecimal representation of 1110 is _____
a) 0111
b) E
c) 15
d) 14

Ans. b

23. Convert the binary equivalent 10101 to its decimal equivalent.
a) 21
b) 12

c) 22
d) 31

Ans. a

24. Which of the following is the correct representation of a binary number?
a) $(124)_2$
b) 1110
c) $(110)^2$
d) $(000)_2$

Ans. d

25. The race round condition occurs in JK flip flop if _____

(a) J =1, k =1

(b) J =0, k =0

© J =0, k =1

(d) J =1, k =0

Ans. a