Dept. of Physics

DEGLOOR COLLEGE, DEGLOOR

MCQ PRACTICE

Class: B.Sc. S.Y. Paper: VIII

Title of Paper: Optics and Laser

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1. There are …… cardinal points in all

   a) Four b) Three c) Five d) Six

2. Complex optical system has ……. Principal planes

   a) Six b) Two c) One d) Three

3. The distance between first focal point from first principal point is..

   a) First focal length b) First focal plane

   c) First focal point d) None

4. Which of the following eyepiece is free from spherical & chromatic aberrations?

   a) Huygens eyepiece only b) Ramsden eyepiece only

   c) Both Huygens and Ramsden eyepiece d) None

5. The equivalent focal length of Huygen's eyepiece is

   a) $F = \frac{3}{4}f$ b) $F = \frac{3}{2}f$

   c) $F = \frac{f}{2}$ d) $F = \frac{2}{3}f$

6. The position of principal points of Huygen's eyepiece is

a) $\alpha = 3f\ , \beta = -f$ b) $\alpha = -f, \beta = 3f$

c) $\alpha = -3f, \beta = f$ d) $\alpha = \frac{f}{2}\ , \beta = -\frac{f}{2}$

7. The ratio of focal length of Huygen's plano-convex lens is

a) 3 :1 b) 1:1

c) 2:1 d) 1:2

8. The equivalent focal length of Ramsden's eyepiece is

a) $F = \frac{3}{4}f$ b) $F = \frac{f}{4}$

c) $F = \frac{3}{2}f$ d) $F = \frac{4}{3}f$

9. Which of the following eyepiece is positive eyepiece?

a) Huygens eyepiece b) Ramsden eyepiece

c) Both Huygens and Ramsden eyepiece d) None

10. There are …… nodal points

a) Four b) Three c) One d) Two

11. Newton's rings are example of

a) Fringes of equal thickness

b) Fringes of unequal thickness

c) Fringes of variable thickness

d) None of the above

12. The radii of fringes of Newton's ring is proportional to

a) $\frac{1}{\sqrt{\lambda}}$ b) λ c) $\frac{1}{\lambda}$ d) $\sqrt{\lambda}$

13. The wavelength of sodium light using Newton's ring is

a) $\lambda = \frac{D_{m+p}^2 - D_m^2}{8PR}$ b) $\lambda = \frac{D_{m+p}^2 - D_m^2}{2PR}$

c) $\lambda = \frac{D_{m+p}^2 - D_m^2}{PR}$ d) $\lambda = \frac{D_{m+p}^2 - D_m^2}{4PR}$

14. The wavelength of monochromatic light using Michelson interferometer is

a) $\lambda = \frac{2d}{N}$ b) $\lambda = \frac{2N}{d}$

c) $\lambda = \frac{N}{2d}$ d) $\lambda = \frac{N}{d}$

15. The difference in wavelength between two neighboring lines in Michelson interferometer is

a) $\lambda_1 - \lambda_2 = \frac{\lambda_1 \lambda_2}{d}$ b) $\lambda_1 - \lambda_2 = \frac{\lambda_1 \lambda_2}{2d}$

c) $\lambda_1 - \lambda_2 = \frac{d}{\lambda_1 \lambda_2}$ d) None

16. Bending of light around the edges is called

a) Interference b) Diffraction

c) Polarization d) Reflection

17. Thin film has thickness of the order of is..

a) 0.5 μm to 10 μm b) 10μm to 100μm

c) 5 μm to 500μm d) 100 μm 1000μm

18. To obtain Fraunhoffer's diffraction,

a) Wave front must be plane

b) Source and screen should be at infinite distance

c) Lens is used between screen and slit

d) All of these

19. The position of minimum intensity due to single slit is given by

a) $sin\theta_n = \frac{na}{2\lambda}$ b) $sin\theta_n = \frac{n\lambda}{a}$

c) $sin\theta_n = \frac{na}{4\lambda}$ d) $sin\theta_n = \frac{na}{3\lambda}$

20. Ability of optical instrument to produce distinctly separate images of closed object

a) Reflecting power b) Lens power

c) Resolving power d) None