

2010 Scheme

Q.P. Code: 103013

Reg. No.:.....

First Year B.Sc Optometry Degree Supplementary Examinations March (November), 2020 Physics

Time: 3 hrs

Max marks: 80

- *Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers • Indicate the question number correctly for the answer in the margin space*
- *Answer all parts of a single question together • Leave sufficient space between answers*
- *Draw table/diagrams/flow charts wherever necessary*

Essay:

(2x15=30)

1. Explain Young's double slit experiment, show that the bright bands and dark bands are of equal band width. Derive the expression for bandwidth. What are the necessary conditions for obtaining a sustained interference pattern in the Young's experiment.
2. What are the main components of Laser. Explain the ruby laser with necessary diagrams. Give four applications of Ruby laser.

Short notes

(5x5=25)

3. State and explain Brewster's law. Explain the working of Brewster's window
4. Distinguish between circular polarisation and elliptical polarisation. Give the methods of production of elliptically polarised light
5. How optical fibres are classified. Derive the expression for numerical aperture of a fibre.
6. How optical flatness of two surfaces can be determined.
7. Explain the dispersion of the light through a prism. Define Abbe's number & its relationship to dispersion power

(5 marks)

Answer briefly

(10x2=20)

8. What are the conditions of Total internal reflection.
9. What is optical activity. Give two examples for dextrorotatory and levorotatory substances.
10. What is the importance of acceptance angle and numerical aperture of an optical fibre.
11. Distinguish between Raman scattering and Rayleigh scattering.
12. Give the explanation for pulsed output of ruby laser
13. What is the phenomenon of dichroism. How plane polarised light can be produced by a dichroic crystal.
14. Why centre of Newton's ring is perfectly black.
15. Explain the blue colour of sky.
16. Explain the condition for constructive interference of 2 waves.
17. Explain Newton's law of viscosity.

(2marks)

Fill in the blanks

(5x1=5)

18. The band width of diffraction pattern are
19. The colour exhibited by spider web is due to
20. A convex lens has nodal points in water
21. Tartaric acid is optically active substance.
22. The wave length of He-Ne laser isnm.
