Q.P.Code 103013 **Reg. No.:……**

First B.Sc Optometry Degree Examinations -September 2013

PHYSICS

Time : 3 hrs **Max marks : 80**

- **Answer all questions**
- **Draw diagram wherever necessary**

Essay: **(2x15=30)**

1. Explain briefly the working and principle of a Lummer Brodhun photometer. Derive the expression for reflection and transmission co-efficient.
2. What are coherent sources. Explain the experimental set up for Young's double slit and find an expression for fringe width.

Short notes **(5x5=25)**

3. Explain the construction and working of ruby laser
4. What is astigmatism and how it can be eliminated.
5. Explain the production and detection of circularly polarized light.
6. Explain double refraction.
7. Explain cardinal points.

Answer briefly **(10x2=20)**

8. Differentiate between stokes and anti stokes lines
9. Grating equation and explain each parameter.
10. Explain Fermat's principle
11. Distinguish between resolving power and dispersive power of grating
12. What is system matrix.
13. Explain spectrometer.
14. Tangent condition for the elimination of distortion
15. A step index fiber has the following parameters, n1 =1.67 and n2 = 1.5 Calculate the numerical aperture.
16. Explain the term viscosity.
17. Define wave velocity.

Fill in the blanks **(5x1=5)**

18. SI unit of power is ……..
19. Water striders stay at the top of the liquid because of …….
20. The principle of fiber optics is ……
21. Pfund series in the line spectrum lies in the ……..
22. The ……point will coincide with the nodal points if the medium on both sides of the system are same.

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