Q.P. Code: 217013 (new scheme) **Reg. No.:……**

Second Year B.Sc Optometry Degree Examinations – November 2016

Optometric Optics

(2014 scheme)

Time: 2 hrs **Max marks: 40**

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

Essay **(10)**

1. With neat diagrams and description, derive the approximate sag relationship. $s = y^2F / 2000 (n-1)$. Mention the formula to find the central thickness of Bi-convex, plano convex, positive meniscus, Bi-concave, Plano-concave and negative meniscus lens with the help of neat diagrams

Short notes **(3x5=15)**

2. Calculate the edge substance of a biconcave lens of power -13.00DS made in spectacle crown glass of refractive index 1.523. The surface power of which are -7.00D and -6.00D. Lens is 40mm in diameter and has a central thickness of 0.7mm.
3. short note on field of view through spectacles.Find out angular field of view of lenses +10.00DS and -10.00DS with 20mm aperture mounted at +37 D from center of rotation of eye
4. With the help of a neat figure explain the refraction of light rays through a Convex Spherical and Plano-concave lens.

Answer briefly **(5x2=10)**

5. Describe the symmetric design in progressive addition lenses
6. Brief on the polishing burn and strain of lens defects
7. What are the mechanical requirements of an bifocal lenses
8. Brief on the heat absorbing lenses
9. Why are convex lenses referred as plus lenses. What is the refractive index of crown glass and dense barium crown glass.

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

10. Frames that are suitable for use as safety glasses must have _____code written on them
11. True or False - In the boxing system, the effective diameter is the diagonal of the box
12. Calculate the jump exerted by the following lens: +1.00D; Add +2.00D, 22 Segment
13. What is the range of solar radiation to which humans are exposed on earth.
14. “Most optical media used for spectacle lenses are isotropic”. What do you infer from this statement.

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