

**Second Year B.Sc Optometry Degree Examinations – November 2015****Optometric Optics****Time : 3 hrs****Max marks : 80**

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

**Essays****(2x15=30)**

1. Describe in detail the plastic and metal materials used for spectacle frames.
2. Describe photochromic glass lenses. Mention the difference between soft and hard progressive addition lens design.

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

3. What is frenal prism and mention its advantages & disadvantages.
4. Electromagnetic spectrum.
5. Different types of bio-focal lenses.
6. Explain the manufacturing process and the test to find out the effectiveness of heat toughened glasses.
7. Explain the steps involved in taking binocular and monocular distance PD using a ruler.

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

8. Laminated lens.
9. Ideal characteristics of a tinted lens.
10. Refractive index of a lens.
11. Define segment height and geometrical inset.
12. Neutral gray filters.
13. Calculate prismatic power at the point 4.0 mm nasal and 2 mm down from the optical center of +4.00 DS spectacle lens in right eye
14. Glare and list the types.
15. Ghost images.
16. Skull and riding bow temple.
17. Oblique astigmatism.

**One word answer****(5x1 = 5)**

18. Optical center of near segment of bifocal is .....mm and .....mm away from optical center of distance segment.
19. Frames, suitable for use as safety glasses must have ----- code written on them.
20. ----- is the refractive index of allyl diglycol carbonate.
21. ----- is the focal length of the lens power -2.50 D.
22. The equation used to calculate reflectance of optical lens surface is -----.

\*\*\*\*\*