Final year B.Sc. (Nursing - Basic) Degree Examination – Sep 2012

Time: Three Hours **Max. Marks: 100 Marks**

Optometric Optics

Q.P. Code : 1631

Your answers should be specific to the questions asked. Draw neat labeled diagrams wherever necessary

LONG ESSAYS (Answer any Four) **4 x 10 = 40 Marks**

1. Enlist the various types of lens materials. Describe the advantages and disadvantages of each.
2. Mention the various parts of a frame with the help of a diagram. Explain the various types of frames in detail.
3. Briefly explain refraction through astigmatic lenses.
4. Discuss the advantages of PAL's over a bifocal or a trifocal lens. Describe the criteria in selection of a frame for fitting a PAL.
5. Find the sph-cyl equilent to the pair of cross cylindrical lens +2.0.0 D cyl @ 20^0 /+4.0 D cyl @ 80^0

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

6. Explain about Aspheric lenses in detail.
7. Briefly explain about photochromatic lens
8. Explain the technique used to examine the spectacle lenses.
9. Describe spherical aberration. Discuss the effect of this aberration in spectacle lenses.
10. Calculate the center thickness of Plano convex lens made in spectacle crown glass (1.523) of power of surface +10.0 D, diameter of lens is 40 mm and edge thickness is 1 mm.
11. Derive the sag formula.
12. Describe the various type of lenses which are suitable for high minus prescription.
13. Derive the approximate sag relationship $S=y^2F/2000(n-1)$
14. Explain prismatic effect of decentration

SHORT ANSWERS **10 x 2 = 20 Marks**

15. Note on effect of a prism on incident light.
16. High index lens
17. What is equiconvex lens? Write down lens maker's formula.
18. Calculate the prismatic effects produced when a -6.0 D lens is decentred 4mm up wards
19. Chromatic abberation
20. Explain about Aspheric lenses in detail.
21. What is a torric lens give some example.
22. Note on effect of a prism on incident light.
23. Mechanical requirement of bifocal lenses
24. What is abbey number give some example?

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