

# Rajiv Gandhi University of Health Sciences, Karnataka

**II year B.Sc. Optometry Degree Examination – 11-Nov-2025**

**Time: Three Hours**

**Max. Marks: 80 Marks**

## **OPTOMETRICS OPTICS – (RS-3)**

**Q.P. CODE: 3111**

Your answers should be specific to the questions asked

Draw neat labeled diagrams wherever necessary

### **LONG ESSAYS (Answer Any Three)**

**3 x 10 = 30 Marks**

1. Mention the various parts of frame with the help of diagram. Explain the various types of frames in detail
2. Explain the properties of cross cylinder with help of example
3. Oblique cross cylinder  
Lens 1: Plano – 3.00 DC x 90  
Lens 2: Plano – 2.00 DC x 110
4. Briefly explain the principle of single layer antireflection coating

### **SHORT ESSAYS (Answer Any Six)**

**6 x 5 = 30 Marks**

5. Write briefly about the faults of the material of the lens
6. High index lens
7. Calculate the edge thickness 'e' of a planoconcave lens made in crown glass (1.523) of surface power -11.00D, diameter of lens 44mm and center thickness 0.6mm
8. Derive the approximate sag formula.  $S = \frac{y^2 F}{2000(n-1)}$
9. Explain about boxing system briefly
10. Explain the prismatic effect of de-centration
11. Indication and contraindication of progressive lens

### **SHORT ANSWERS**

**10 x 2 = 20 Marks**

12. What is abbe number give some examples?
13. Advantages of aspheric lens
14. Simple transpose to minus cylinder form
  - a) Plano + 2.00 DC x 90
  - b) + 1.50 DS + 1.50 DC x 180
15. What is equiconvex lens? Write down lens maker formula
16. Explain the term segment height and segment depth
17. State the surface power required to produce the following lens in periscope form
  - a) +1.50
  - b) R+3.75
18. Vertex distance
19. Prentice rule
20. Lenticular lens
21. Rotation test

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