Jan-24

# BLDE (DEEMED TO BE UNIVERSITY)

## B.Sc. in Optometry

[Time: 3 Hours] [Max. Marks: 80]

### III SEMESTER

### PAPER - I (Physical Optics)

### QP CODE: 8340

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

**Long Questions** **10X1 = 10 Marks**

1. Explain Fresnel's and Fraunhofer diffraction and applied aspect of diffraction.

**Short Essays: (Any – 8)** **5 X 8 = 40 Marks**

2. Electromagnetic spectrum.
3. Explain the wave equation
4. Principle of Tyndall effect
5. Intensity of polarized light
6. Properties of light
7. Applications of laser
8. Luminous efficiency and efficiency curve
9. Retinal illumination
10. Determination of grating

**Short Answers: (Any – 10)** **3 X 10 = 30 Marks**

11. Colloid
12. Suspension
13. Reflection and refraction of light
14. Diffraction and interference of light
15. Photoelectric effect
16. Note on gamma and infra-red spectrum
17. Dispersions of light
18. Ruby laser
19. Raman effect
20. Zone plate
21. Wave equation

Jan-26

# BLDE (DEEMED TO BE UNIVERSITY)

## B.Sc. in Optometry

[Time: 3 Hours] [Max. Marks: 80]

### III SEMESTER

### PAPER – II (Geometrical Optics)

### QP CODE: 8341

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

**Long Questions** **10X1 = 10 Marks**

1. Describe the process of image formation by a convex lens. Derive the displacement without deviation and without dispersion of glass slab.

**Short Essays: (Any – 8)** **5 X 8 = 40 Marks**

2. Explain Snell's law and derive it from Huygens' principle.
3. Write a note on refraction through a glass slab and its optical displacement.
4. Explain refraction through a prism and the relation between angle of prism and deviation.
5. Discuss chromatic and spherical aberrations in lenses.
6. Explain the concept of nodal planes and focal planes in thick lenses.
7. Describe presbyopia and explain the calculation of addition power.
8. Explain Prentice's Rule and its importance in lens centering.
9. Write a note on aperture stops and entrance and exit pupils.
10. Explain blurred retinal image formation and its optical causes.

**Short Answers: (Any – 10)** **3 X 10 = 30 Marks**

11. Define refraction.
12. What is optical path length?
13. Define dispersion.
14. What is Abbe's number used for?
15. Define paraxial approximation.
16. What is vergence at a distance?
17. Define pseudophakia.
18. What is the difference between convergence and divergence?
19. Define effective power of a lens.
20. What is a thin prism?
21. Define depth of field.

# BLDE (DEEMED TO BE UNIVERSITY)

Jan-26

## B.Sc. in Optometry

[Time: 3 Hours] [Max. Marks: 80]

### III SEMESTER
### PAPER – III (Visual Optics)
### QP CODE: 8342

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

**10X1 = 10 Marks**

## Long Questions

1. Explain the optical structure of the human eye with neat diagrams. Discuss the refracting surfaces and their functions.

**5 X 8 = 40 Marks**

## Short Essays: (Any – 8)

2. Explain the concept of vergence and power in visual optics.
3. Describe Fermat's principle and its clinical relevance in eye optics.
4. Explain the cardinal points of the eye and their importance.
5. Describe the optics of the cornea and aqueous humour.
6. Explain the reduced eye model and its uses.
7. Describe the principle of keratometry and its clinical application.
8. Explain the concept of visual acuity and factors affecting it.
9. Discuss light and dark adaptation mechanisms in the eye.
10. Write a short essay on color vision and color defects.

**3 X 10 = 30 Marks**

## Short Answers: (Any – 10)

11. Define vergence.
12. What is catoptric power?
13. Define spherical aberration.
14. What is the refractive index of the cornea?
15. Define schematic eye.
16. What is diffraction?
17. Define temporal resolution.
18. What is dichroism?
19. Define ametropia.
20. What is fluorescence?
21. Define curvature of the lens.

Jan-26

# BLDE (DEEMED TO BE UNIVERSITY)

## B.Sc. in Optometry

[Time: 3 Hours] [Max. Marks: 80]

### III SEMESTER

### PAPER – IV (Ocular Disease I)

### QP CODE: 8343

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

## Long Questions

**10X1 = 10 Marks**

1. Describe the anatomy and physiology of the cornea. Explain in detail the types and causes of corneal ulcer.

## Short Essays: (Any – 8)

**5 X 8 = 40 Marks**

2. Explain the etiology and classification of uveitis.
3. Write a note on episcleritis and scleritis.
4. Write a short note on Tear film..
5. Write a note on corneal degenerations and dystrophies.
6. Explain keratoconus and its management.
7. Discuss the types and causes of orbital trauma.
8. Write short notes on types of blepharitis.
9. Explain the pathology of panophthalmitis.
10. Describe approach to a patient with proptosis.

## Short Answers: (Any – 10)

**3 X 10 = 30 Marks**

11. Write three degenerative conditions of conjunctiva.
12. Name two congenital anomalies of the eyelids.
13. Define chalazion.
14. What are types of keatoplasty?
15. Define dacryoadenitis.
16. What is conjunctival chemosis?
17. Write three causes of corneal opacity.
18. Name any three orbital tumors.
19. Define endophthalmitis.
20. What is keratoglobus?
21. Name three causes of orbital cellulitis .

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Jan-26

# BLDE (DEEMED TO BE UNIVERSITY)

## B.Sc. in Optometry

[Time: 3 Hours] [Max. Marks: 80]

### III SEMESTER

### PAPER – V (Clinical Examination & Visual System)

### QP CODE: 8344

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

**Long Questions** **10X1 = 10 Marks**

1. Explain the steps of history taking in an eye examination. Why is it important for diagnosis and management?

**Short Essays: (Any – 8)** **5 X 8 = 40 Marks**

2. Explain the method of visual acuity estimation and factors affecting it.
3. Describe the procedure and interpretation of the cover and alternate cover tests.
4. Write a note on the Maddox rod test and its clinical use.
5. Explain the method of Van Herrick technique and its importance.
6. Describe the procedure of Schirmer's test and interpretation of results.
7. Write a note on slit lamp biomicroscopy and its clinical applications.
8. Explain the procedure of direct ophthalmoscopy.
9. Describe the Amsler grid test and its significance.
10. Explain the contrast sensitivity function test.

**Short Answers: (Any – 10)** **3 X 10 = 30 Marks**

11. Define visual acuity.
12. What is Hirschberg test?
13. Define pupillary reflex.
14. What is TBUT test?
15. Define stereopsis.
16. What is a photostress test?
17. Define ROPLAS.
18. What is a confrontation test?
19. Name any two tests for color vision.
20. What is the function of the superior rectus muscle?
21. Define tonometry.