

February 2010

[KW 6002]

Sub. Code : 6002

BACHELOR OF OPTOMETRY DEGREE EXAMINATION

First Year

Paper II – Physical and Geometrical Optics I and II

Q.P. Code : 806002

Time : Three hours

Maximum : 100 marks

Answer ALL Questions

Draw diagrams wherever necessary

I. Essays: **(2 x 15 = 30)**

1. Describe Newton's ring experiment and explain how it is used to determine the wavelength of sodium light.
2. Explain how the laser can be produced and also discuss the effects of laser energy on tissue.

II. Short Notes : **(10 x 5 = 50)**

1. Explain the Phenomenon of interference.
2. What is the zone plate and explain how is it made.
3. State and explain double refraction.
4. Give an account of Raman effect.
5. Explain regular Astigmatism.
6. Briefly explain about Gullstrand's schematic eye.
7. Write a note on anisometropia.
8. State and explain prism diopter.
9. Explain the term first principal focus and second principal focus.
10. What are entrance port and exit port? Explain.

III. Short Answers: **(10 x 2 = 20)**

1. State Snell's law of refraction.
2. What are nodal points?
3. Define aberrations.
4. Define myopia.
5. Mention the types of manifest hypermetropia.
6. What is meant by accommodation of the eye?
7. State Huygens principle for the propagation of light.
8. What is meant by fringe width?
9. Write any two applications of interference.
10. What is Polarization?

August 2011

[KZ 0811]

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**B.Sc. OPTOMETRY
FIRST YEAR**

PAPER II – PHYSICAL AND GEOMETRICAL OPTICS (I & II)

Q.P. Code : 806002

Time : Three hours

Maximum : 100 marks

Answer All questions.

I. Elaborate on :

(3 X 10=30)

1. Explain the terms: spontaneous and stimulated emission laser pumping and population inversion. Discuss also the Ruby LASER.
2. Discuss the construction of a Nicol prism. How will you use it as an analyzer?
3. Astigmatism

II. Write notes on :

(8X 5 = 40)

1. Compound microscope.
2. Solar spectrum.
3. Power of a lens.
4. Images formed by a plane mirror.
5. Double refraction.
6. Distortion.
7. Dispersion in a prism.
8. Anisometropia.

III. Short Answers on :

(10X 3 = 30)

1. Plane polarized light.
2. Raman's effect
3. Total internal reflection.
4. Refractive index of a medium.
5. Entrance and Exit pupil.
6. Positive and Negative crystals.
7. Optical activity.
8. Glare effect.
9. Application of lasers in medicine.
10. Nodal points.

February 2012

[LA 0212]

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**B.Sc. OPTOMETRY
FIRST YEAR**

PAPER II – PHYSICAL AND GEOMETRICAL OPTICS (I & II)

Q.P. Code: 806002

Time: Three hours

Maximum : 100 marks

Answer ALL questions.

I. Elaborate on:

(3 X 10=30)

1. Discuss 'Raman Effect' in detail
2. Explain the use of LASERS in Ophthalmic applications and medicine
3. Write the etiology, signs, symptoms and management of Myopia

II. Write notes on :

(8X 5 = 40)

1. Dual nature of light
2. Total internal reflection
3. Curvature
4. Infra Red Spectrum
5. Double refraction
6. Glare effect
7. Semiconductor LASER
8. Gullstrand's schematic eye

III. Short Answers on :

(10X 3 = 30)

1. Fermat's principle
2. Images in plane mirrors
3. Dispersion of light in prisms
4. Effect of stops
5. Optic axis of a crystal
6. Power of a lens
7. Properties and uses of laser
8. Magnification in mirrors
9. Diopre
10. Angular magnification
