

[LJ 1016]

OCTOBER 2016

Sub. Code: 1601

**M. OPTOM DEGREE EXAMS  
FIRST YEAR  
PAPER I – OPTOMETRY – I**

*Q.P. Code: 281601*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. a) What is 'Visual Task'? What are the factors affecting the 'Visual Tasks'.  
Explain with necessary diagrams.  
b) What is the relationship between "visual task" and 'illumination'? Explain with necessary graph.
2. Explain about the five monochromatic aberrations and list ways to minimize it.

**II. Write notes on:**

**(10 x 6 = 60)**

1. What are the different 'lighting schemes'? Explain with necessary diagrams.
2. Draw and explain the 'spectral power distribution graph'.
3. State and explain the 'laws of illumination' with necessary diagrams.
4. Derive  $d=t/n$  for reduced thickness in thick lenses.
5. Write in short about the principle of Fibre Optics.
6. Write notes on : Aspects of illumination in i) Endoscopes ii) headlamps
7. Explain and Derive Abbe Value and its significance.
8. Write in detail about various theories of Light.
9. Explain in detail about Chromatic Aberration and its significance in Ophthalmic Lenses.
10. Derive the minimum angle of deviation for small angled prisms.

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[LK 0517]

MAY 2017

Sub. Code: 1601

**M. OPTOM EXAMS  
FIRST YEAR  
PAPER I – OPTOMETRY – I**

*Q.P. Code: 281601*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Write in detail about an ophthalmic prisms, prentice rule, its base notations and uses.
2. Write in detail about the aberrations and its control management in ophthalmic lenses.

**II. Write notes on:**

**(10 x 6 = 60)**

1. Differentiate between Luminance and Illuminance.
2. Write in short about the cardinal data of the thick lens.
3. Write in short about the significance of R.I in terms of the characteristics of an ophthalmic lens.
4. Explain the optical construction of a lensometer with diagram.
5. Elaborate on oblique astigmatism aberration with neat diagram.
6. Define dispersion and explain why the shorter wavelengths lights are bending more.
7. How are 'CTs' and 'Illuminance' related?
8. Explain how the effectivity differs when the vertex distance changes?
9. Write short note on stops and apertures in lens system.
10. Explain the ways to correct the spherical aberration with diagram.

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[LL 1017]

OCTOBER 2017

Sub. Code: 1601

**M. OPTOM EXAMS  
FIRST YEAR  
PAPER I – OPTOMETRY – I**

*Q.P. Code: 281601*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Write in detail about various theories of light, mentioning its drawbacks and application.
2. Briefly explain about interference and its application in Spectacle Lenses.

**II. Write notes on:**

**(10 x 6 = 60)**

1. What is 'Light'? Draw the spectrum of e.m waves. Mark the 'Visible' part in it.
2. Name the two theories of 'Colour'. Explain each with necessary diagram(s).
3. Define : (i) 'Luminous Flux' (ii) 'Candela' and 'Solid Angle'.
4. Write in brief about Raleigh's scattering.
5. Draw and explain the concept of Nicol Prism.
6. Differentiate between Illuminance and Luminance.
7. Write in short about polarization.
8. Define visual task and explain the factors affecting it.
9. Write in detail about oblique astigmatism aberration and the ways to minimize it.
10. Differentiate between thin and thick lenses in terms of optics involved.

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[LN 1018]

OCTOBER 2018

Sub. Code: 1601

**M. OPTOM EXAMS  
FIRST YEAR  
PAPER I – OPTOMETRY – I**

***Q.P. Code: 281601***

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. Write in detail about the electromagnetic spectrum and the properties of the components.
2. Define visual task. What are the factors that affect the visual tasks? What is the relationship between visual task and illumination? Write in detail about the requirements for illumination in work place.

**II. Write notes on:**

**(10 x 6 = 60)**

1. State and explain the laws of illumination with necessary diagrams.
2. Write notes on Nicol prism with diagram and its uses.
3. Write about colour temperature and colour rendering of light sources.
4. Elaborate on coma with neat diagram. How will you control coma?
5. Define dispersion and scattering. What are the effects of high dispersion and scattering? What are the remedies?
6. Define interference and the types. Applications of interference of light.
7. Differentiate between luminance and Illuminance.
8. Write about the use of stops and apertures in lens system.
9. Write about the cardinal points in thick lenses.
10. Write about ophthalmic prisms, its base notations and uses in ophthalmology.

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