[KZ 0811] **AUGUST 2011** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. What is astigmatism? What are the possible cause of astigmatism and its symptoms and its treatment?
2. Mention the steps that are followed for subjective refraction and explain it?
3. What are the characteristics of the image formed using a concave & convex lens for all location of the object?

II. Write notes on: **(10 x 5 = 50)**

1. Define prism and the uses of prism.
2. How to calculate the power of lens?
3. What is Anisometropia and its types?
4. What are the uses of Jackson Cross Cylinder and explain it?
5. How to conduct Screening Camp?
6. Write down the prescription for the following:
   a) RE = + 2.0Ds / + 1.0 x 165º 6/6
      LE = + 1.0Ds / -0.50 x 180º 6/6
      NVB Add + 2.0Ds

   b) RE = - 1.75Ds / - 1.0 x 75º 6/6
      LE = - 1.0 Ds/ -0.75 x 90º 6/6
      Add + 3.0 Ds N6
7. Draw the diagram of Strum's Conoid and explain it?
8. Write down the procedures in performing Retinoscopy?
9. What are the other properties of light and explain?
10. What is rule of thumb for testing Anisokonia?

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

1. What are the properties of light?
2. What is reflection?
3. Define polarization?
4. What is against the rule astigmatism?
5. What is manifest Hypermetropia?
6. Define Scattering.
7. What is principal axis?
8. What is lens and its types?
9. Define irregular astigmatism.
10. Transpose the following:
    a) + 1.50Ds /+ 1.0 x 165º (b). - 2.50Ds / + 1.50 x 15º

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[LA 0212] **FEBRUARY 2012** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Explain about the refractive error of Hypermetropia.
2. What is Anisometropia? Explain the causes, Types and treatment.
3. Mention the tools used in evaluation of astigmatism.

II. Write notes on: **(10 x 5 = 50)**

1. How to correct Hypermetropia by scientific method?
2. Mention the treatment for amblyopia.
3. Explain the Retinoscopy procedure.
4. Explain Strum's Conoid with neat diagram.
5. What are the laws of reflection and refraction?
6. Explain about Jackson Cross Cylinder and its uses?
7. Write the down the prescription of the following:
   a) RE = - 2.0Ds/ - 1.50 x 75º 6/6
      LE = - 2.50 Ds/ - 1.0 x 90º 6/6
      ADD + 2.50 Ds N6
   b) RE = + 2.50DS/ + 1.0 x 180º 6/6
      LE = + 1.0 Ds/ + 1.0 x 165 º 6/6
      ADD + 2.0 Ds N6
8. What is vergence and explain positive and negative vergence?
9. Write the "Far point" concept?
10. What are the symptoms of Presbyopia and how it is treated?

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

1. What is refractive index?
2. What is focal length?
3. What is prism diopter?
4. Explain decentration.
5. What is diffraction?
6. What is meridional amblyopia?
7. What is regular astigmatism?
8. Mention the treatments of myopia?
9. What is occlusion therapy?
10. What is critical angle?

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[LB 0212] **AUGUST 2012** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Hypermetropic refractive error.	7	20 min.	10
2. Objective refraction – principles and description of streak in refraction.	7	20 min.	10
3. Amblyopia and its management.	7	20 min.	10
II. Write Notes on:			
1. Spherical lenses, cylindrical lenses, spherocylindrical lens – method of identification.	4	9 min.	5
2. Explain real and virtual image.	4	9 min.	5
3. Sturms conoid.	4	9 min.	5
4. Duochrome test.	4	9 min.	5
5. Presbyopia management.	4	9 min.	5
6. Jackson Cross Cylinder.	4	9 min.	5
7. Explain transposition.	4	9 min.	5
8. How do you measure power of lens?	4	9 min.	5
9. Uses of prims.	4	9 min.	5
10. Cycloplegic refraction.	4	9 min.	5
III. Short Answers on:			
1. Interference.	1	3 min.	2
2. Polarisation.	1	3 min.	2
3. Fluorescence.	1	3 min.	2
4. Aniseikonia.	1	3 min.	2
5. Spherical equivalent.	1	3 min.	2
6. Refractive index.	1	3 min.	2
7. Aphakia.	1	3 min.	2
8. Define Astigmatism.	1	3 min.	2
9. Principle of retinoscope.	1	3 min.	2
10. How do you specify axis of the lens?	1	3 min.	2

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[LC 0212] **FEBRUARY 2013** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Elaborate on Aphakic refractive status, refraction and glass prescription in Aphakia.
2. Refraction eye camp.
3. Elaborate on the steps of subjective and objective retinoscopy.

II. Write notes on: **(10 x 5 = 50)**

1. Crossed cylinder.
2. Use of prisms in ophthalmology.
3. Management of amblyopia.
4. Duochrome test.
5. Strum's conoid.
6. Cycloplegic refraction.
7. Explain real and virtual image and formation of images using convex lens.
8. How do you calculate spherical equivalent?
9. How do you identify a spherical lens, cylindrical lens and a prism using neutralization method?
10. Myopia.

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

1. Define Hypermetropia.
2. Define Aniseikonia.
3. Types of Amblyopia.
4. Cycloplegics.
5. Define presbyopia.
6. Post mydriatic test.
7. Vision charts for adults.
8. Vision charts for children.
9. Spherocylindrical lens.
10. Image magnification.

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[LD 0212] **AUGUST 2013** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Define Hypermetropia. Give its components, clinical features and management.
2. Define Anisometropia. Give the etiology, clinical types, diagnosis and management.
3. Drugs used in refraction and interpretation of retinoscopic values.

II. Write notes on: **(10 x 5 = 50)**

1. Convex lenses.
2. Pseudophakia.
3. Conducting a screening camp for cataract.
4. Duochrome test.
5. Pathological Myopia.
6. Write down the glass prescription for the following retinoscopy values

RE	+ 3.50	LE	+ 2.00
	+ 2.50		+ 1.00

Age – 30 years ; Working distance 1 metre ; Drug used – Cyclopentolate 1 %

7. Laws of reflection and refraction.
8. Uses of Prisms in ophthalmology.
9. Jackson's cross cylinder.
10. Transpose and give the type of refractive error
    a) + 0.75 Dsph + 1.00 Dcyl x 75^{o}
    b) – 1.00 Dsph + 1.50 Dcyl x 180^{o}

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

1. Give two properties of Light.
2. Polarization.
3. Properties of LASER.
4. Illumination.
5. Linear magnification.
6. Neutralisation.
7. Unit of a Prism.
8. Types of lenses.
9. With the rule and against the rule astigmatism.
10. Define Amblyopia.

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[LE 0212] **FEBRUARY 2014** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Define Astigmatism. Write the types, causes, clinical features and management
2. Define Retinoscopy. Write the procedure of retinoscopy with a note on drugs used in refraction
3. Define Amblyopia. Write the causes and the management.

II. Write notes on: **(10 x 5 = 50)**

1. Theories associated with nature of light.
2. Cardinal data of a lens.
3. Properties of light.
4. Optics of Myopia.
5. Presbyopia.
6. School screening.
7. Write down the glass prescription for the following Retinoscopy values

RE	- 3.00	LE	- 5.00
	- 3.00		- 4.00

   Age 70 years ; Working distance 1 metre ; Drug used Phenylephrive Hydrochloride 10 %
8. Types of Aniseikonia.
9. Treatment of Hypermetropia.
10. Transpose and give the type of refractive error.

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

1. Two types of interference.
2. How is light measured.
3. Laws of refraction.
4. Applications of total internal reflection.
5. Refraction through a Prism.
6. Concave Lens.
7. Methods of refining cylindrical power.
8. Treatment for presbyopia.
9. Components of Hypermetropia.
10. Uses of lensometer.

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[LF 0212] **AUGUST 2014** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Write in detail about Myopia and it's correction.
2. Write about Aphakia and it's correction.
3. Define Retinoscopy. Write about optics and Procedure of Retinoscopy.

II. Write notes on: **(10 x 5 = 50)**

1. Write about Pseudophakia.
2. Define Aniseikonia. Write about types of Aniseikonia.
3. What is Chromatic Aberration? Write about Duo-chrome test.
4. Expand JCC. Write about JCC procedure.
5. What is light? Write about Interference of light.
6. What is Prism? Write about uses of Prism in Ophthalmology.
7. What is Refraction of light? Write about Laws of Refraction.
8. Expand CTC. Write about CTC Refraction.
9. Define Prosbyopia. Write about types of Presbyopia.
10. Write about different types of "Retinoscope".

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

1. Define Polarization of light.
2. Define Power of Lens.
3. What is Refractive index of Lens?
4. Draw a diagram of "Sturons Conold"
5. Define Hypermetropia.
6. Define Amblyopia
7. Write Prescription:

   OD:- - 2.00Ds/- 1.00Dc x 90 6/6
   OS:- - 3.00Ds/- 1.00Dc x 90 6/6
   NU OU:- add + 2.00Ds N6 @ 33cm
8. Define Screening of Eye Camps.
9. What is Scissors Reflex in Retinoscopy?
10. Define Prosbyopia.

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[LG 0215] **FEBRUARY 2015** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code : 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Aphakia and pseudophakia – refractive conditions and management.
2. Principles of retinoscopy.
3. Refraction eye camps.

II. Write notes on: **(10 x 5 = 50)**

1. Presbyopia.
2. Cycloplegic refraction.
3. Duochrome test.
4. Sturms conoid.
5. Anisometropia.
6. Give example and explain transposition.
7. Uses of prism.
8. Explain formation of images using concave lens.
9. Jackson Cross Cylinder – uses.
10. Short notes on eye donation.

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

1. Define laws of refraction.
2. Define Diffraction.
3. Explain ‘With’ and ‘Against’ motion in retinoscopy.
4. Uses of lensometer.
5. Define astigmatism.
6. Give an example and explain epherical equivalent.
7. Aniseikonia.
8. Management of presbyopic.
9. Examples for scissoring reflex.
10. Refractive index.

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[LH 0815] **AUGUST 2015** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code: 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Retinoscopic techniques.
2. Formation images in a convex lens.
3. Symptoms, causes and treatments of myopia.

II. Write notes on: **(10 x 5 = 50)**

1. Use of prisms in correcting visions.
2. Formation of image in a concave lens.
3. Astigmatism and its treatments.
4. Cycloplegic refraction.
5. Sturm's conoid.
6. Aphakia and pseudophakia.
7. Presbyopia and its correction.
8. Symptoms and treatments of aniseikonia.
9. Amblyopia and its correction.
10. Importance of conducting eye camps.

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

1. Conditions for interference of light.
2. Polarization of light.
3. Laws of refraction.
4. Power of a lens.
5. Spherocylindrical lens.
6. Uses of crossed cylinder.
7. Differences between real and virtual images.
8. Fluorescence and phosphorescence.
9. Power of a prism.
10. Eye donation.

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[LI 0216] **FEBRUARY 2015** **Sub. Code: 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code: 841503

Time : Three Hours **Maximum : 100 marks**

Answer ALL questions

I. Elaborate on: **(3 x 10 = 30)**

1. Objective refraction and refractive techniques.
2. Presbyopic signs, Symptoms and treatments.
3. Formation of images in a convex lens for different positions of the object.

II. Write notes on: **(10 x 5 = 50)**

1. Formation of image in a concave lens.
2. Refraction of light through a prism.
3. Symptoms and treatments for aniseikonia.
4. How prisms are used in correcting vision.
5. Signs, symptoms and treatments for amblyopia.
6. Aphakia and pseudophakia.
7. Fresnel and Fraunhofer diffraction.
8. Sturm’s conoid.
9. Hypermetropia and its correction.
10. Importance of conducting eye camps.

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

1. Refractive index of different ocular media.
2. Uses of crossed cylinder.
3. Power of a lens and its unit.
4. Fluorescence and phosphorescence.
5. Laws of refraction.
6. Conditions for interference of light.
7. Different types of lenses according to their shapes.
8. Power of a prism.
9. Spherocylindrical lens.
10. Eye donation.

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[LJ 0816] **AUGUST 2016** **Sub. Code : 1503**

DIPLOMA IN OPTOMETRY TECHNOLOGY

FIRST YEAR

PAPER III – PHYSICAL, GEOMETRIC AND VISUAL OPTICS

Q.P. Code: 841503

Time : Three hours **Maximum: 100 Marks**

Answer **ALL** questions.

I. Elaborate on: **(3 x 10 = 30)**

1. What is hypermetropia? Give its causes, symptoms and treatment.
2. Explain “with” and “against” motions in retinoscopy.
3. Write in detail about eye donation.

II. Write notes on: **(10 x 5 = 50)**

1. Explain Strums conoid with neat diagram.
2. Write notes on electromagnetic spectrum.
3. What are the methods of identification of lenses?
4. Explain Duochrome test.
5. Write notes on the importance of conducting eye camps.
6. Mention the treatment of Amblyopia.
7. Explain real and virtual images.
8. Describe the path of a ray of light through a prism.
9. Explain the optics of myopia.
10. How will you calculate spherical equivalent?

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

1. What is reflection?
2. State Snell’s law of refraction.
3. Define power of prism.
4. What is phosphorescence?
5. Give the vision charts for adult.
6. What is a sphero cylindrical lens?
7. Give two properties of light.
8. What is angular magnification?
9. Mention the uses of prisms.
10. What is polarization of light?

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