

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

OPHTHALMOLOGY MODULE III EXAMINATION
JULY, 2004

Date: 27th July, 2004

Time: 2.00 p.m. - 4. 00 p.m.

ESSAY PAPER

Answer all questions.

1. A 30 year old myopic patient wishes to undergo Refractive Surgery.
 - a) Name the methods available to study the
 - i. Corneal curvature.
 - ii. Corneal thickness.
 - b) Describe with a line diagram, the principle of a method mentioned, to study the corneal curvature.
2.
 - a) Explain briefly with a ray diagram how an erect non inverted image is obtained with a slit lamp.
 - b) How does the slit lamp give a binocular stereoscopic view with less aberrations ?
 - c) Describe the methods of examining the anterior segment of the eye with the slit lamp.
3.
 - a) What are the types of multifocal spectacle lenses available in clinical practice.
 - b) List the indications of multifocal lenses.
 - c) Discuss the advantages and disadvantages of each of them.
4. Write short notes on :
 - a). Mode of action of Ophthalmic Lasers.
 - b) Critical angle.

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OPHTHALMOLOGY MODULE III EXAMINATION
JULY, 2005

Date :- 26th July, 2005

Time :- 2.00 p.m. - 4.00 p.m.

ESSAY PAPER

Answer all questions.

1.
 - 1.1. Describe the optics of indirect ophthalmoscope.
 - 1.2. How does it differ from direct ophthalmoscope.
 - 1.3. Discuss the advantages and disadvantages of indirect ophthalmoscope.
Explain your answer with ray diagrams.

2.
 - 2.1. List the optical aberrations of the eye.
 - 2.2 Explain the aberrations you mentioned above using ray diagrams.
 - 2.3 Describe the factors in the eye that would reduce these aberrations.

3.
 - 3.1 A 45 year old high myope who works as a bank officer presents to you for his optical correction.
 - (a) Describe your management options.
 - (b) How would you discuss with the patient the advantages and disadvantages of your management options?
 - 3.2 Describe the types of contact lenses you would prefer in correcting different refractive status.

4.
 - 4.1 What is total internal reflection ?
 - 4.2 Discuss the examination techniques of the eye where total internal reflection is utilized.
 - 4.3 Describe the optics of one of the examples you mentioned above using ray diagrams.

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OPHTHALMOLOGY MODULE III EXAMINATION
JULY, 2006

Date: 25th July 2006

Time: 2.00 p.m.- 4.00 p.m.

ESSAY PAPER

Answer all questions.

1. Write notes on
 - 1.1 Pinhole test
 - 1.2 Accommodative Convergence / Accommodation ratio (AC/ A)
 - 1.3 Optics of Maddox Rod and its uses.

2.
 - 2.1 What are the different subtypes of myopia and known associated factors.
 - 2.2 Discuss the age of myopia onset and risk factors.
 - 2.3 What are the treatment options for optical correction of a 45 year old Computer Programmer with a unilateral myopia of -6 DS. Illustrate your answer with ray Diagrams

3.
 - 3.1 Describe briefly with the help of diagrams, Optical Aberrations in the human eye.
 - 3.2 Explain briefly under what circumstances these aberrations can increase.

4. Explain briefly
 - 4.1 Sturms Conoid
 - 4.2 Spherical equivalent
 - 4.3 Contrast sensitivity

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OPHTHALMOLOGY MODULE III EXAMINATION

JULY, 2007

Date: 24th July 2007

Time: 1.00 p.m. - 3.00 p.m.

ESSAY PAPER

Answer all questions.

1.
 - 1.1 Name the refractive procedures available to correct myopia (20 marks)
 - 1.2 What are the corneal parameters that should be assessed before carrying out ketarorefractive surgery (20 marks)
 - 1.3 Describe the optics of two instruments used for this purpose. (in 1.2) (illustrate your answer with ray diagraphes) (60 marks)

2.
 - 2.1 What are the optical aberrations seen in the human eye ? (40 marks)
 - 2.2 What are the mechanisms available in human eye to minimize them ? (illustrate your answer with ray diagraphes) (60 marks)

3.
 - 3.1 What is Astigmatism. Explain different types of Astigmatism using ray diagraphes ? (40 marks)
 - 3.2 What clinical signs and investigations will help you to diagnose irregular astigmatism ? (30 marks)
 - 3.3 What are the options available to correct Astigmatism ? (30 marks)

4. Write notes on
 - 4.1 Accommodative excess (30 marks)
 - 4.2 Optics of pan fundusopic contact lens (30 marks)
 - 4.3 Relative spectacle magnification and how it is clinically useful in optical correction of refractive ametropias. (illustrate your answer with ray diagraphes) (40 marks)

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OPHTHALMOLOGY MODULE III EXAMINATION
JULY 2008

Date: 22nd July 2008

Time : 1.00 p.m. - 3.00 p.m.

ESSAY PAPER

All questions are to be answered.
Answer each question in a separate book.

1.
 - 1.1. What is an ophthalmic prism ? (10 marks)
 - 1.2. What is the definition of a prism diopter ? (10 marks)
 - 1.3. What are the types of prisms that are used in ophthalmic instruments ?
Illustrate with diagrams and examples. (40 marks)
 - 1.4. What are the aberrations of prisms ? (20 marks)
 - 1.5. Add a note on Fresnel prism. (20 marks)

2.
 - 2.1. What is low vision ? (10 marks)
 - 2.2. What are the types of low visual aids ? (Give one example for each type). (30 marks)
 - 2.3. Explain how a convex lens can be used as a low vision aid. (30 marks)
 - 2.4. Explain how the Galilean system works. (30 marks)

Illustrate your answers with line diagrams.

3. A 55 year old librarian presenting to you saying that he is unhappy with his recently prescribed spectacles.
 - 3.1. What are the possible reasons ? (40 marks)
 - 3.2. What are your treatment options for each of those you mentioned ? (40 marks)
 - 3.3. If the patient is not happy to use spectacles what other alternatives can you suggest ? (20 marks)

4. Write notes on-
 - 4.1. Pachymetry. (35 marks)
 - 4.2. Optical coherence tomography. (30 marks)
 - 4.3. Corneal topography. (35 marks)

Include line diagrams where necessary.

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OPHTHALMOLOGY MODULE III EXAMINATION
JULY 2009

Date : 21st July 2009

Time : 1.00 p.m.-3.00 p.m.

ESSAY PAPER

All questions are to be answered.

Answer each question in a separate book.

1.
 - 1.1. List the optical components of the operating microscope. (30 marks)
 - 1.2. Compare and contrast the optics of astronomical telescope and the Galilean telescope. (Include line diagrams) (70 marks)

2.
 - 2.1. List the causes of spectacle intolerance. (30 marks)
 - 2.2. Describe considerations in prescribing and fitting of spectacles. (In myopia, hyperopia, astigmatism) (70 marks)

3.
 - 3.1. Briefly describe aniseikonia and its aetiology. (30 marks)
 - 3.2. List the pertinent clinical features. (30 marks)
 - 3.3. Briefly describe patient management in terms of treatment and follow up. (40 marks)

4.
 - 4.1. Write notes on :-
 - 4.1.1. Manual lens meter (focimeter). (40 marks)
 - 4.1.2. Contrast sensitivity. (30 marks)
 - 4.1.3. Progressive lenses. (30 marks)

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OPHTHALMOLOGY MODULE III EXAMINATION

FEBRUARY 2010

Date : 3rd February 2010

Time : 1.00 p.m. – 3.00 p.m.

ESSAY PAPER

All questions are to be answered.

Answer each question in a separate book.

1.
 - 1.1. What is the definition of a spherical lens ? (10 marks)
 - 1.2. What are the types of spherical lenses ? (20 marks)
 - 1.3. Describe the aberrations of spherical lenses. (50 marks)
(include diagrams)
 - 1.4. What are the factors that help to reduce the spherical aberrations in the human eye? (20 marks)
2.
 - 2.1. Briefly describe the ocular surface problems related to contact lens wear. (50 marks)
 - 2.2. List the risk factors. (20 marks)
 - 2.3. List the conditions that should be considered in the differential diagnosis of the above problems. (30 marks)
3. Describe the optical components of the Slit lamp bio-microscope. (include ray diagrams where necessary) (100 marks)
4. Write short notes on (include diagrams where necessary)
 - 4.1. Diffraction. (30 marks)
 - 4.2. Anisometropia. (30 marks)
 - 4.3. Catoptric images. (30 marks)

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OPHTHALMOLOGY MODULE III EXAMINATION
JULY 2010

Date : 20th July 2010

Time : 1.30 p.m.-3.30 p.m.

ESSAY PAPER

All questions are to be answered.

Answer each question in a separate book.

1.
 - 1.1. Briefly describe clinical accommodation problems. (70 marks)
 - 1.2. Briefly outline effect of spectacle and contact lens correction on accommodation and convergence. (30 marks)

2.
 - 2.1. What are the properties of laser light ? (30 marks)
 - 2.2. Explain laser tissue interaction. (30 marks)
 - 2.3. Name types of lasers used in ophthalmology with examples. (30 marks)

3. Write short notes on –
 - 3.1. Angle kappa (30 marks)
 - 3.2. Abnormal retinal correspondence (ARC) (35 marks)
 - 3.3. Monofixation syndrome (35 marks)

4. Write notes on –
 - 4.1. Diagnostic ultrasonography (50 marks)
 - 4.2. Optics of the retinoscope (50 marks)
(include ray diagrams where necessary)

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OPHTHALMOLOGY MODULE III EXAMINATION

JULY 2011

Date : 26th July 2011

Time : 1.30 p.m.-3.30 p.m.

ESSAY PAPER

All questions are to be answered.

Answer each question in a separate book.

1.
 - 1.1. What are the likely causes of difficulties experienced by a person who is wearing a newly prescribed glasses with cylindrical correction (explain your answers with line diagrams where appropriate). (50 marks)
 - 1.2. Explain how you would minimize these effects in clinical practice. (50 marks)
2.
 - 2.1. Describe the optical principles of indirect ophthalmoscopy (include ray diagrams). (60 marks)
 - 2.2. Explain advantages and limitations of its use. (20 marks)
 - 2.3. Give a comparison of different types of condensing lenses used in indirect ophthalmoscopy. (20 marks)
3.
 - 3.1. Describe the schematic eye. (40 marks)
(include only the important measurements)
 - 3.2. Briefly discuss the pupil size and its effect on visual resolution. (40 marks)
 - 3.3. How does the scattering of light affect the visual function. (20 marks)
4. Write short notes –
 - 4.1. Entoptic phenomena (30 marks)
 - 4.2. absorptive lenses (30 marks)
 - 4.3. monocular diplopia (40 marks)

POSTGRADUATE INSTITUTE OF MEDICINE
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OPHTHALMOLOGY MODULE III EXAMINATION

JULY 2012

Date : 26th July 2012

Time : 1.30 p.m.-3.30 p.m.

ESSAY PAPER

All questions are to be answered.

Answer each question in a separate book.

1. Explain optical principles of Fundus Viewing Contact Lenses. (use Ray Diagrams). (100 %)

2.
 - 2.1. What are the methods available to measure axial length of the eye in biometry ? (30 %)
 - 2.2. What are the clinical situations where you find difficulties in calculating intra ocular lens (IOL) power ? (50 %)
 - 2.3. Briefly describe intra ocular lens (IOL) related visual disturbances. (20 %)

3.
 - 3.1. How does hypermetropia change with age ? (25 %)
 - 3.2. Explain how cycloplegics help in refracting a patient with hypermetropic refractive error. (25 %)
 - 3.3. Describe the principles in correction of hypermetropia in children. (50 %)

4. Write short notes on –
 - 4.1. Therapeutic use of prisms. (40 %)
 - 4.2. Goldman Applanation tonometer. (30 %)
 - 4.3. visual acuity testing in infants. (30 %)