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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (OPHTHALMOLOGY) OPTICS & REFRACTION EXAMINATION –
MAY, 2019

Date: 29th May, 2019

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

ESSAY PAPER

Answer all questions.

Answer each question in a separate book.

1. Compare and contrast the optical principles of the Galilean telescope and Keplerian (astronomical) telescope using Ray Diagrams. (100%)

2.
 - 2.1. Describe the properties of spectacle lens material? (50%)
 - 2.2. What are the different types of material used in spectacle lens manufacturing? Describe each briefly. (50%)

3. A 30 year old gentleman wishes to get contact lenses to correct his refractive error.
 - 3.1. What factors should be considered when prescribing contact lenses to him? (30%)
 - 3.2. What are the advantages of soft and rigid contact lenses? (40%)
 - 3.3. Describe the contact lens related problems and complications? (30%)

4. Write short notes on
 - 4.1 Intraocular lens-related vision disturbances (30%)
 - 4.2 Goldman applanation tonometer (40%)
 - 4.3 Diffraction (30%)

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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (OPHTHALMOLOGY) OPTICS & REFRACTION EXAMINATION
MARCH 2020

Date :- 4th March 2020

Time:- 1.30 p.m. – 3.30 p.m.

ESSAY PAPER

Answer **all four (04)** questions.

Answer each question in a separate book.

1.
 - 1.1. List the optical aberrations of the eye. (20%)
 - 1.2. Explain the aberrations you mentioned above using ray diagrams. (60%)
 - 1.3. What factors in the eye would reduce these aberrations? (20%)

2. A 27-year-old patient with bilateral myopia presented with poor vision in her left eye due to significant posterior sub capsular cataract. Her refraction is as follows:

Right eye	-9.00 DS -0.50 DC @ 10-6/9
Left eye	Hand movement (due to cataract)

 - 2.1. Define high myopia. (20%)
 - 2.2. Name three (03) intra ocular lens (IOL) power calculation formulae suitable for this patient. (20%)
 - 2.3. What are the post-operative optical problems following unilateral IOL implantation in this patient? (20%)
 - 2.4. What options are available for her right eye to overcome the above mentioned in 2.3.? (40%)

Contd..../2-

3.
 - 3.1. List the uses of contact lenses in ophthalmology. (20%)
 - 3.2. What are the effects of contact lenses on
 - 3.2.1. optical aberrations of the eye and spectacle lenses. (25%)
 - 3.2.2. accommodation and convergence (25%)
 - 3.3. Briefly explain the contact lens options available to correct presbyopia for a person who wants to be spectacle free. (30%)
4. Write short notes on:
 - 4.1. Problems of correcting aphakia with spectacle lenses. (40%)
 - 4.2. Maddox rod (40%)
 - 4.3. Pin-hole test (20%)