

**POSTGRADUATE INSTITUTE OF MEDICINE**  
**UNIVERSITY OF COLOMBO**

**MD (OPHTHALMOLOGY) OPHTHALMIC BASIC SCIENCES**  
**EXAMINATION – MARCH 2018**

**Date:- 5<sup>th</sup> March 2018**

**Time :- 1.00 p.m. – 2.30 p.m.**

**STRUCTURED ESSAY PAPER I**

**Answer all questions.**

**Answer each question in a separate book. (Question 1, 2, 3.1 and 3.2)**

1.

1.1. Briefly describe the anatomy of the Choroidal vasculature. (35%)

1.2. Describe the relations of the optic chiasma. (35%)

1.3. Outline the development of the vitreous. (30%)

2.

2.1. Name the structures that can be visualized in drainage angle of a normal adult. (20%)

2.2. Describe the normal anatomy of the aqueous outflow apparatus. (80%)

3.

3.1. A patient was sent to the Eye Clinic from the OPD, who presented following a quarry blast injury to the eye.

3.1.1. List the imaging investigations that you will perform in this patient. (10%)

3.1.2. Discuss what you expect to see in the above investigations giving reasons. (30%)

3.1.3. Give the advantages and disadvantages of the above investigations. (10%)

3.2. A six month old baby is sent to the ophthalmology clinic with poor visual fixation. His notes record that he has Down syndrome. His mother shows you his karyotype that reveals a translocation form of Down syndrome.

3.2.1. Outline the genetic basis of the chromosome abnormality causing translocation Down syndrome. (10%)

3.2.2. Outline the pregnancy outcomes when one of the parents is a translocation carrier. (25%)

3.2.3. Outline how you would determine the risks to a future pregnancy in this child's parents. (15%)

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**Date:- 5<sup>th</sup> March 2018**

**Time :-3.00 p.m. – 4.30 p.m.**

**STRUCTURED ESSAY PAPER II**

**Answer all questions.**

**Answer each question in a separate book. (Question 1, 2, 3.1 and 3.2)**

1.

1.1. What is the physiological importance of continuous production of aqueous humor in the eye. (30%)

1.2. Describe in detail the physiological basis of aqueous humor production in the eye. (70%)

2.

2.1. Enumerate the ocular electrophysiological tests? (15%)

2.2. Describe the components of each of the above tests and how they help in the assessment of the visual pathway. (70%)

2.3. Write a brief account on the pattern ERG. (15%)

Contd..../2-

3.

3.1. A matched case-control study was conducted to determine the risk factors for blindness among primary open-angle glaucoma (POAG) patients. Blind POAG patients (cases) were matched on age and sex with non-blind POAG patients (controls). Investigators reported that cases and controls had significant difference between mean numbers of glaucoma medications. ( $p < 0.001$ ). Further they found that history of glaucoma surgeries was associated with blindness in patients with POAG (adjusted odds ratio [OR] 1.6, 95% Confidence Interval 1.1–2.2).

3.1.1. What was the purpose of matching of the above study? (10%)

3.1.2. Name a statistical test that can be applied for comparing the mean numbers of glaucoma medications between cases and controls. (10%)

3.1.3. Interpret the adjusted odds ratio and the 95% confidence interval. (30%)

3.2. A 40 year old patient presented to eye clinic with Proptosis of right eye of 4-6 months duration. Radiological investigations revealed mass lesion in the orbit.

3.2.1. List the possible pathological lesions. (25%)

3.2.2. List the sequence of laboratory investigations that you would do to diagnose the lesion. (25%)

3.2.3. Discuss the importance of histology, histochemical tests and immunohistochemistry in arriving at the definitive diagnosis of the lesion. (50%)