POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (OPHTHALMOLOGY) OPHTHALMIC BASIC SCIENCES EXAMINATION – JUNE 2016

Date :- 23rd June 2016   **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.   Describe the structure of the cerebellum.   (40%)

   1.2.   Describe the pathway of the sympathetic nerve supply to the eye and adnexia (including central pathway).   (60%)

2. Write short notes on :

   2.1.   Limbal transitional zone.   (30%)

   2.2.   Neural crest cells in ocular development.   (30%)

   2.3.   Retinal pigment epithelium.   (40%)

3. A 50 year old female patient is suspected to have a calcified vascular intra-orbital mass.

3.1.

   3.1.1. List the radiological investigations which would help to come to a diagnosis.   (10%)

   3.1.2. Briefly discuss the expected findings in each radiological investigation including the advantages and disadvantages.   (40%)

3.2.

   3.2.1. Using a diagram outline the events of the cell cycle.   (05%)

   3.2.2. Outline the events during meiosis in a female.   (30%)

   3.2.3. Explain the reasons for association of Down syndrome with increased maternal age.   (15%)

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Date :- 23rd June 2016   **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.   Describe the types of axonal transport.   (30%)

1.2.   Briefly describe the normal visual field.   (35%)

1.3.   Write notes on factors affecting the accuracy of standard automated
        visual field analysis.   (35%)

2.

2.1.   Describe changes in the retinal and vitreous physiology in diabetic
        patients.   (50%)

2.2.   Discuss the steps of identifying the cause of anisocoria that increases
        with exposure to bright light.   (50%)

3.

3.1. A randomized controlled trial was conducted to assess the effect of timolol 0.1% eye gel on short-term intraocular pressure (IOP) after an intravitreal injection (IVI) of ranibizumab among patients with macular edema caused by various pathological conditions. One hundred patients were randomly divided into two groups. One group of 50 was not treated with timolol before the IVI and the other 50 received an instillation of timolol 0.1% eye gel the evening before the IVI.

The following table shows the results of the study.

Groups	Baseline mean (±SD)	+60 minutes mean (±SD)	P-value (vs baseline)
Untreated	15.1 (±1.6)	29.3 (±12.0)	<0.0001
Timolol gel given the evening before	15.3 (±1.6)	28.3 (±9.9)	<0.0001
P-value (intervention vs control)	0.99	0.69	

3.1.1. Comment on the randomization method applied in the above study.
(12%)

3.1.2. Name two (02) statistical tests applied for the above study giving reasons.
(20%)

3.1.3. State three (03) criteria to assess the validity of the study. (18%)

3.2. A 50 year old female patient presented to eye clinic with proptosis and a palpable mass in the right eye of three months duration.

3.2.1. Discuss how you proceed further to arrive at a pathological diagnosis in this patient.
(60%)

3.2.2. Discuss the importance of correct sample collection and transport of this patient's specimens to the laboratory.
(40%)