

POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

MD (OPHTHALMOLOGY) OPHTHALMIC BASIC SCIENCES
EXAMINATION – JUNE 2017

Date: 22nd June 2017

Time: 2.00 p.m. – 3.30 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. Write short notes on

1.1. Structure of the choroid. (40%)

1.2. The ciliary muscle. (40%)

1.3. Innervation of the iris. (20%)

2.

2.1. Describe the anatomy of the lateral geniculate body. (40%)

2.2. Outline the neural connections of the lateral geniculate nucleus. (30%)

2.3. Discuss briefly the development of the midbrain. (30%)

Contd.....2/-

3.

3.1.

3.1.1. List the appropriate imaging investigations that you would perform in a patient with a history of trauma to the eye and orbit. (10%)

3.1.2. Discuss the advantages and disadvantages of the above investigations and what would you, expect to evaluate by these investigations. (40%)

3.2. A 5-month-old baby is diagnosed with aniridia.

Aniridia can arise from a submicroscopic, contiguous gene deletion involving chromosome 11p13. This is called Wilms tumour- aniridia- genital anomalies - retardation (WAGR) syndrome. The WAGR syndrome is associated with a risk of a renal tumour in childhood if the WT1 gene is deleted along with the aniridia associated PAX6 gene deletion.

3.2.1. State the methods available for detecting the chromosome 11 deletion and discuss the test/s that you would request to investigate the genetic basis for WAGR syndrome. (15%)

3.2.2. Briefly discuss the benefits and limitations of genetic testing for the WAGR syndrome. (20%)

3.2.3. Briefly discuss how you would determine the risk of recurrence of the deletion in this child's siblings or offspring. (15%)

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Time: 4.00 p.m. – 5.30 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 are the layers of tear film? (15%)

1.2. Name contributory glands for each layer. (30%)

1.3. What are the functions of the tear film? (30%)

1.4. What is the composition of the aqueous layer? (25%)

2.

2.1. Define Critical Flicker (fusion) Frequency and describe the factors affecting it. (40%)

2.2.

2.2.1. Discuss the effects of early monocular (form) vision deprivation. (35%)

2.2.2. Explain the “sensitive period” and “critical period” for the development of binocular vision. (25%)

Contd.....2/-

3.

3.1. A cohort study was conducted to assess the effect of drug compliance on diabetic retinopathy among 200 diabetic patients without retinopathy. After two years of follow up, the researchers assessed the drug compliance with a validated instrument and retinopathy using standard methods. Out of 60 poor drug compliance patients, 30 had retinopathy. In the group with good compliance there were 40 retinopathy patients. Probability values of <0.05 were considered statistically significant. Authors concluded that poor drug compliance increase the risk of diabetes retinopathy.

3.1.1. Calculate relative risk and attributable risk. (20%)

3.1.2. Name one statistical test that can be applied for the above study. (10%)

3.1.3. Would you agree with the authors conclusion based on the above description? Explain. (20%)

3.2.

3.2.1. Classify the causes that may lead to enucleation of the eye giving examples. (20%)

3.2.2. Describe the way the sample should be transported to the laboratory. (10%)

3.2.3. Describe the important pathological findings that you expect in the Histopathologist's report with regards to patients, further management. (20%)