



**PROGRAM** : OPTOMETRY

**SUBJECT** : OCULAR ANATOMY

**CODE** : OAF03A3/OAF3B10

**DATE** : SUPPLEMENTARY EXAMINATION  
JULY 2016

**DURATION** : 180min

**WEIGHT** : 50:50

**TOTAL MARKS** : 100

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**EXAMINER** : Dr E Bruwer

**MODERATOR** : Mr N Xhakaza

**NUMBER OF PAGES** : FOUR PAGES

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**INSTRUCTIONS** : QUESTION PAPERS MUST BE HANDED IN.

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**REQUIREMENTS** : 1 X EXAMINATION SCRIPTS

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**INSTRUCTIONS TO CANDIDATES:**

1. THIS PAPER CONSISTS OF SECTION A WITH FOUR QUESTIONS AND SECTION B WITH SIX QUESTIONS.
  2. ANSWER EACH SECTION ON A SEPARATE EXAMINATION SCRIPT.
  3. THIS QUESTION PAPER MUST BE RETURNED WITH ALL YOUR EXAMINATION ANSWER SCRIPTS.
  4. MARK ALLOCATION: ½ MARK PER FACT UNLESS INDICATED OTHERWISE
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**SECTION A:**

**HISTOLOGY OF THE EYE; MUSCLES OF THE EYEBALL AND ASSOCIATED  
STRUCTURES**

**QUESTION 1**

- 1.1 Describe the histological structures of the blind spot and NII at origin of the optic nerve  
and name the functions of each. (10)  
1.2 Discuss the structure and importance of the scleral spur. (6)

**[16]**

**QUESTION 2**

- Give an annotated illustration to show the structure of Bruch's membrane. **[4]**

**QUESTION 3**

- 3.1 Give a labelled illustration of the histological structures of epithelium, stroma and  
muscle layers of the iris. (6½)  
3.2 Describe the characteristic, position and functions of the muscle layers of the iris. (7½)

**[23]**

**QUESTION 4**

- 4.1 Give a well labelled diagram of the histological structure of the cornea. (5½)  
4.2 Define polarity as a characteristic of epithelium tissue of cornea. (1½)

**[7]**

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**SECTION A SUBTOTAL MARKS: 50**

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**SECTION B:**

**EMBRYOLOGY OF EYE; CRANIAL NERVES; AUTONOMIC INNERVATION OF EYE;**  
**VISUAL PATHWAYS; BLOOD SUPPLY OF THE EYE AND ACCESSORY**  
**STRUCTURES**

**QUESTION 1**

Describe the stages that follow after the development of the lens vesicle during the development of the lens. [16]

**QUESTION 2**

Arteriovenous fistula caused by rupture of the internal carotid artery in the cavernous can result into the paralyses of the nerves of the eyeball.

Name the nerves that may be affected by this and give their specific position in the cavernous sinuses. Include in your answer the position of the internal carotid artery in the cavernous sinus. [4]

**QUESTION 3**

Describe the parasympathetic innervation of the lacrimal gland. [6]

**QUESTION 4**

Write a short note on the sensory distribution of the supra-orbital, supratrochlear, lacrimal, long ciliary, short ciliary and infratrochlear branches of the ophthalmic nerve. You may use diagrammatic illustration. [9]

**QUESTION 5**

Write a short note on the origin course and relations of the central artery of the retina. [5]

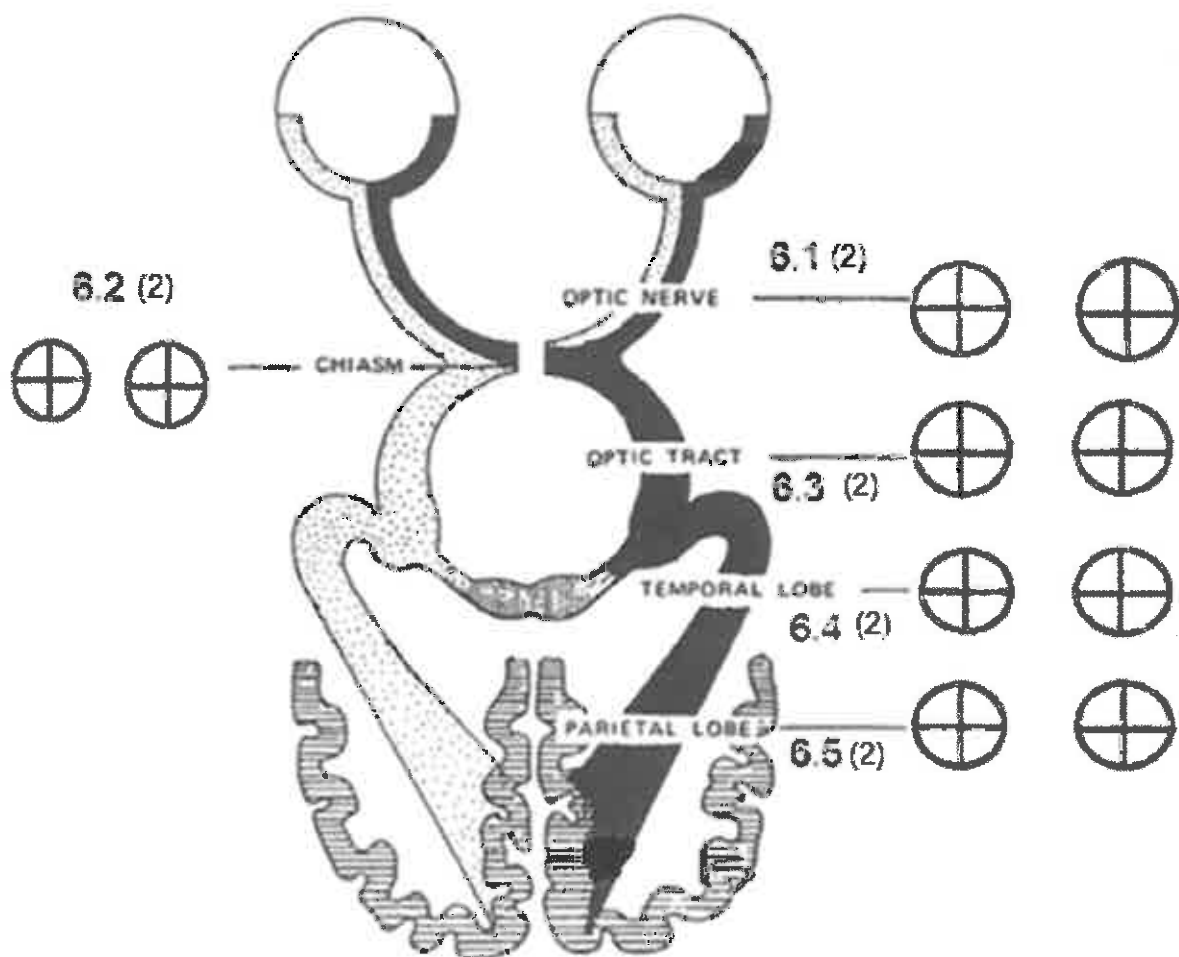
Tear this page off and submit it with your answer sheet:

Name: \_\_\_\_\_ Student number: \_\_\_\_\_

**QUESTION 6**

The circles in Figure 1 below represents the quadrants of the visual fields of the right and the left eyes. In the diagram of the visual pathway are indicated different sites of lesions. Shade the quadrant/s that will be affected in each lesion. Include the written description of each lesion. Write down numbers 6.1 to 6.5 and the correct description next to each in your answer sheet. Tear and hand in the page with the diagram. [10]

**FIGURE 1**



SECTION B SUBTOTAL MARK: 50

TOTAL MARK: 100