PROGRAM	:	*OPTOMETRY*
SUBJECT	:	**OCULAR PHYSIOLOGY**
CODE	:	**OAF03B3**
DATE	:	SUPPLEMENTARY EXAMINATION JANUARY 2017
DURATION	:	180 minutes
WEIGHT	:	50: 50
TOTAL MARKS	:	100

EXAMINER	:	MR. T.T. NYAKUDYA
	:	MRS P.C. DE LANGE-JACOBS
MODERATORS	:	MRS P.C. DE LANGE-JACOBS
	:	MR. T.T. NYAKUDYA
NUMBER OF PAGES	:	4 PAGES

INSTRUCTIONS	:	THIS QUESTION PAPER MUST BE RETURNED WITH THE EXAMINATION SCRIPT.
REQUIREMENTS	:	2 X EXAMINATION SCRIPT

INSTRUCTIONS TO CANDIDATES:

1. THIS PAPER CONSISTS OF TWO SECTIONS**.**

   SECTIONS A MUST BE ANSWERED IN A **SEPARATE** EXAMINATION SCRIPT.
   SECTIONS B MUST BE ANSWERED IN A **SEPARATE** EXAMINATION SCRIPTS

2. **PLEASE LABEL THE COVER OF EACH EXAMINATION SCRIPT, SECTION A, AND B**
3. THIS QUESTION PAPER MUST BE RETURNED WITH YOUR EXAMINATION SCRIPTS.

SECTION A

Answer this section in a SEPARATE answer script. Ensure that you number your answers exactly as the questions are numbered.

QUESTION ONE – THE EYELIDS

1.1 Describe the role of the eyelid secretions in the protection of the eye. (4)

1.2 Discuss the general characteristics of the eyelids that makes them effective in protecting the eye. (6)

[10]

QUESTION TWO – LACRIMAL APPARATUS

2.1 Select the mechanism that according to your judgement provides the best explanation for the thinning and eventual break-up of the tear film layer on the cornea. (10)

[10]

QUESTION THREE – OCULAR BLOOD FLOW

3.1 Discuss the mechanisms regulating tissue fluid permeability of intra-ocular blood vessels. (10)

[10]

QUESTION 4 – PHYSIOLOGY OF THE CORNEA

4.1 The cornea is a chemically heterogeneous tissue. Briefly discuss the chemical composition of the most important corneal layers. (20)

[20]

SUBTOTAL SECTION A: 50

SECTION B

Answer this section in a SEPARATE answer script. Ensure that you number your answers exactly as the questions are numbered.

QUESTION 1

1.1 The protein composition is of the utmost importance for the structural and functional integrity of the lens. Discuss this statement in detail. (8)

1.2 Describe the basic biochemical changes in the lens that lead to senile cataracts. 12 x ½ = (6)

[14]

QUESTION 2

2.1.1 Define ocular hypertension. (1)

2.1.2 List **four** possible reasons for ocular hypertension. 4 x ½ = (2)

2.2 Write short notes on primary angle closure glaucoma (close-angle Glaucoma) (6)

2.3 Explain a very simple procedure that can be done to quickly lower the IOP in acute glaucoma when Schlemm's canal is blocked. (3)

[12]

QUESTION 3

3.1 Explain **four** processes that are involved in the production of aqueous humour and for each process, provide one example of a substance in the aqueous humour that was transported into the aqueous through that specific mechanism.

4 x 1½ = **[6]**

QUESTION 4

Discuss the underlying reasons for the occurrence of floaters and flares in the vitreous.

[6]

QUESTION 5

Distinguish between the **TWO** basic mechanisms and effects of neuromuscular blocking drugs. **[5]**

QUESTION 6

6.1 Explain **TWO** physical factors that affect colour vision. (2)

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6.2 Use **ONLY** a diagrammatic drawing with explanatory annotations to explain the physiological events during the resting state of photoreception.

10 x ½ = (5)

[7]

SUBTOTAL SECTION B: 50

TOTAL: 100