



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

MAIN CAMPUS

**UNIVERSITY EXAMINATIONS  
2020/ 2021 ACADEMIC YEAR**

**MAIN EXAM**

**FOR THE DEGREE  
OF  
BACHELOR OF OPTOMETRY**

**COURSE CODE:** BOV 322

**COURSE TITLE:** BINOCULAR VISION I

**DATE:** 22/4/2022

**TIME:** 8-10AM

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**INSTRUCTIONS TO CANDIDATES**

Answer all questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating



**ANSWER ALL QUESTION**

**SECTION A 30 MARKS**

1. A 18-year-old patient presents with 8 prisms diopters esophoria at near and orthophoria at distance. The fusional reserves are BI 3/5/2 and BO 4/8/5 for near and BI X/8/6 and BO 3/7/4 for distance. The near working distance is 40 cm and the IPD is 68 mm.
  - a) Calculate the AC/A ratio. (3 marks)
  - b) What is the tentative diagnosis, and why? (3 marks)
  - c) What are some of the signs and symptoms the patient present with? (3 marks)
  - d) What is/are the differential diagnoses? (3 marks)
  - e) Use Sheard's criteria to calculate the amount of prism you could give the patient. (2 marks) and how do you intent to manage the patient (1 mark)
  
2. Using the *push-up* method to measure the amplitude of accommodation of a 15-year-old, you find 8D ou
  - a) Using the Hofstetter's formula, calculate the expected minimum amplitude of accommodation for this patient? (3 marks)
  - b) What can be the diagnosis for the patient and why? (3 marks)
  - c) Give three examples of ways you can manage this patient? (3 marks)
  - d) What are the expected MEM values of the above patient and why? (3marks).
  - e) Accommodative response can be measure by MEM/Dynamic retinoscopy, NRA (Negative relative accommodation) PRA (Positive relative accommodation) and accommodative facilities test, among the above-mentioned name the most important and why? (3 marks)

**SECTION B 40 MARKS**

**QUESTION 4**

<b>History:</b> An 18-year-old woman presented with complaints of inability to read comfortably for more than 10 minutes. After 10 minutes her eyes burn, the print becomes blurry, and, if she continues, she experiences double vision.	
Examination results:	
VA (distance, uncorrected)	OD: 20/20. OS: 20/20
VA (near, uncorrected)	OD: 20/20. OS: 20/20
Near point of convergence	2.5 to 5 cm
Cover test (distance)	Orthophoria
Cover test (near)	3 esophoria
Distance lateral phoria	Orthophoria
Base-in vergence (distance)	x/6/4
Base-out vergence (distance)	12/18/10
Near lateral phoria	6 esophoria
-1.00 gradient	13 esophoria
AC/A ratio	7:1
Base-in vergence (near)	4/6/-2
Base-out vergence (near)	18/28/16
Vergence facility (near)	0 cpm. Diplopia with base-in.
NRA	+2.50
PRA	-0.50
Accommodative amplitude (push-up)	OD: 13 D. OS: 13 D
Monocular accommodative facility	OD: 12 cpm. OS: 12 cpm.
Binocular accommodative facility	0 cpm. Diplopia with -2.00
MEM retinoscopy	+1.50
Additional tests	Pupils were normal, all external and internal health tests were negative, and the deviation was comitant and color vision testing revealed normal function.

- a. What are some of symptoms and signs of significance for the diagnosis? (5 marks)
- b. Give some differential diagnosis? (2 marks)
- c. What is the appropriate treatment (if any)? (3 marks)
- d. How will you manage the patient and do follow-up, advice and give recommendations? (5marks)
- e. What are some of the appropriate assessment of expected prognosis? (5 marks)

#### QUESTION 5

<b>History:</b> A 15-year-old boy presents with a history of asthenopia associated with short periods of reading.	
Examination results:	
VA (distance, uncorrected)	OD: 20/20. OS: 20/20
Near point of convergence	2.5 to 5 cm
Cover test (distance)	Orthophoria
Cover test (near)	2 esophoria
Accommodative amplitude	OD: 13 D. OS: 13 D
Base-in vergence (distance)	x/5/2
Base-out vergence (distance)	6/10/6
Calculated AC/A	4:1
Base-in vergence (near)	6/10/4
Base-out vergence (near)	4/8/6
NRA	+1.50
PRA	-1.25
Monocular accommodative facility	OD: 12 cpm. OS: 12 cpm.

Binocular accommodative facility	2 cpm. Difficulty with both +/-2.00
MEM retinoscopy	+0.25
Additional tests	Pupils were normal, all external and internal health tests were negative, the deviation was comitant and color vision testing revealed normal function.

- a. What are some of symptoms and signs of significance for the diagnosis? (5 marks)
- b. Give some differential diagnosis? (2 marks)
- c. What is the appropriate treatment (if any)? (3 marks)
- d. How will you manage the patient and do follow-up, advice and give recommendations? (5marks)
- e. What are some of the appropriate assessment of expected prognosis? (5 marks)



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**UNIVERSITY EXAMINATIONS**

**2021/2022 ACADEMIC YEAR**

**SECOND YEAR second SEMESTER EXAMINATIONS**

**Main exam**

**FOR THE DEGREE**

**OF**

**BACHELOR OF OPTOMETRY AND VISION SCIENCES**

**COURSE CODE: BOV 221**

**COURSE TITLE: OPHTHALMOLOGY 1 – ANTERIOR EYE DISEASES**

**DATE: 21/04/2022**

**TIME: 12-2pm**

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**INSTRUCTIONS TO CANDIDATES**

- 1. Answer all questions in the two sections**
- 2. Section A comprises 4 short answer questions**
- 3. Section B comprises 2 essay questions**

**MMUST observes ZERO tolerance to examination cheating**