



*(University of Choice)*

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY**

**(MMUST)**

**MAIN CAMPUS**

**UNIVERSITY MAIN EXAMINATIONS**

**2022/2023 ACADEMIC YEAR**

**FOURTH-YEAR, SECOND-SEMESTER EXAMINATIONS**

**FOR THE DEGREE OF**

**BACHELOR OF OPTOMETRY AND VISION SCIENCES**

**COURSE CODE: BOV 224**

**COURSE TITLE: PUBLIC HEALTH AND COMMUNITY OPTOMETRY**

**DATE: 13/4/2023**

**TIME: 12.00-2.00PM**

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**INSTRUCTIONS TO CANDIDATES**

**Answer all Questions**

Section A: Multiple choice questions (MCQ) (20 marks)

Section B: short Answer Questions (SAQ) (30 marks)

Section C: Long Answer Questions (LAQ) (20 marks)

**TOTAL 70 MARKS**

**TIME: 2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of SIX Printed Pages. Please Turn Over.

**SECTION A MULTIPLE CHOICE QUESTIONS (20 MARKS)**

1. All are a common cause of childhood blindness except [1 Mark]

- A. Malnutrition
- B. Glaucoma
- C. Ophthalmia neonatorum
- D. Congenital dacryocystitis

2. Morbidity indicators are all except

- A) Incidence
- B) prevalence
- C) incidence rate
- D) Notification rates

3. Which of the following international conferences advocate the health promotion.

- A. Ottawa charter
- B. ICPD
- C. Beijing conference
- D. habitat II

4. Which of the following study determine prevalence of diseases?

- A) Longitudinal study
- B) Case control study
- C) Cohort study.
- D) Cross sectional study

5. John Snow located source of

- A. cholera
- B. typhoid
- C. plague
- D. All

6. Constant presence of disease in an area during a period of time is:

- A) endemic
- B) epidemic
- C) sporadic
- D) pandemic

7. 8 year-long study was done and at last 45 new cases per 1000 were found. What term is used to describe these new cases?
- a) prevalence rate
  - b) incidence rate
  - c) primary case
  - d) Index rate
8. Which of the following is not the ethical principle for health and for biomedical research?
- A) Beneficence
  - B) Justice
  - C) Reliability
  - D) Informed consent
9. Prevention of emergence or development of risk factors is a type of:
- A) Tertiary prevention
  - B) Secondary prevention
  - C) Primary prevention
  - D) Primordial prevention
10. Randomization is done in the experimental study to:
- A) To eliminate selection bias
  - B) To select control
  - C) To eliminate confounding bias
  - D) All of the above
11. In quasi experimental study:
- A) There is control and randomization
  - B) There is no Control
  - C) There is no randomization
  - D) There is neither control nor randomization
12. The hallmark feature of an analytic epidemiologic study is: (choose best answer)
- A) Laboratory confirmation of the diagnosis
  - B) Use of appropriate comparison group
  - C) Statistical analysis using logistic regression
  - D) Publication in peer reviewed journal

13. All of the following are advantages of case control except?

- A) Relative risk can be calculated
- B) Odds ratio can be calculated
- C) Useful in rare conditions
- D) cost-effective and inexpensive

14. Prevalence of a disease is:

- A) Rate
- B) Ratio
- C) Deviation
- D) Proportion

16. Epidemiology is mostly focused on which of the following?

- A) Chronic diseases
- B) Communicable diseases
- C) Health-related events
- D) Mental health conditions

17. Which of the following is not regarded as the proportion in epidemiology?

- A) Prevalence
- B) Case fatality rate
- C) Proportionate mortality rate
- D) Incidence rate

18. Which of the following statement is true?

- A) Incidence is a rate but prevalence is ratio
- B) Incidence is a rate but prevalence is proportion
- C) Both incidence and prevalence are rate
- C) Incidence is proportion but prevalence is rate

19. Which of the following represent killing power of the disease?

- A) Cause specific death rate
- B) Proportional mortality rate
- C) Case fatality rate
- D) Crude death rate

20. What is sensitivity in a study?

- A) False negative
- B) False positive
- C) True negative
- D) True positive

**SECTION B (40 MARKS)**

1. Glaucoma is among the leading causes of blindness globally. A typical question facing eye care providers in clinic is how good a particular test is at diagnosing a particular pathology. For example how useful are results from visual field analyzer (VFA) in diagnosing glaucoma compared to a new imaging technology?

Suppose 285 individuals were enrolled in a study that compared the 'gold standard' glaucoma screening test (VFA) with the new imaging technology. Below is a table showing data from the study comparing new imaging with the gold standard VFA to detect glaucoma.

	Reference test		
	Positive	Negative	
Diagnostic test			
Positive	a (71)	b (54)	a + b (125)
Negative	c (42)	d (118)	c + d (160)
Total	a + c (113)	b + d (172)	a + b + c + d (285)

1: Using the data in the above table, calculate the test's: (8 marks)

- a. Sensitivity
- b. Specificity
- c. Positive predictive value (PPV)
- d. Negative predictive value (NPV)

2. Briefly explain how blindness eradication initiatives address sustainable development goals (6 marks)
3. A) State two determinants of refractive errors (2 marks)  
b) briefly explain how the Refractive state of the eye changes throughout life (6 marks)
4. A) What is ecological fallacy in ecologic studies? ( 2 marks)  
b) Briefly explain any three types of analytical studies (6 marks)

**SECTION B (20 MARKS)**

1. Using relevant examples discuss indicators that you need for planning eye care services in your county (20 marks)

END