



(University of Choice)

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

**UNIVERSITY EXAMINATIONS (MAIN EXAM)
2021/2022 ACADEMIC YEAR**

THIRD YEAR SECOND TRIMESTER EXAMINATIONS

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE, MEDICAL LABORATORY
SCIENCES**

COURSE CODE: BML 424

COURSE TITLE: COMMUNITY HEALTH AND EPIDEMIOLOGY

DATE: 27/04/2022

TIME: 12.00 -2.00 PM

INSTRUCTIONS TO CANDIDATES

This paper is divided into three sections, **A**, **B** and **C**, carrying respectively: Multiple Choice Questions (**MCQs**), Short Answer Questions (**SAQs**) and Long Answer Questions (**LAQs**). **Answer all questions. DO NOT WRITE ON THE QUESTION PAPER.**

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 5 Printed Pages. Please Turn Over

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SECTION A: ANSWER ALL QUESTIONS: CHOOSE THE MOST APPROPRIATE ANSWER (20MKS):

1. The epidemiologic triad of disease causation refers to?
 - A. Agent, host, environment
 - B. Time, place, person
 - C. Source, mode of transmission, susceptible host
 - D. John Snow, Robert Koch, Kenneth Rothman
2. Disease control measures are generally directed at which of the following?
 - A. Eliminating the reservoir
 - B. Eliminating the vector
 - C. Eliminating the host
 - D. Interrupting mode of transmission
3. In the definition of epidemiology, "determinants" generally includes:
 - A. Agents
 - B. Causes
 - C. Control measures
 - D. Host
4. The hallmark feature of an analytic epidemiologic study is?
 - A. Use of an appropriate comparison group
 - B. Laboratory confirmation of the diagnosis
 - C. Publication in a peer-reviewed journal
 - D. Statistical analysis using logistic regression
5. A study in which children are randomly assigned to receive either a newly formulated vaccine or the currently available vaccine, and are followed to monitor for side effects and effectiveness of each vaccine, is an example of which type of study?
 - A. Experimental
 - B. Observational
 - C. Case-control
 - D. Clinical trial
6. Which type of the study design below indicated. An investigator takes a sample of healthy individuals, record their ongoing solar exposure, and relate that to the subsequent occurrence of skin cancer in the same group.
 - A. Case-control study
 - B. Ecological study
 - C. Cohort study
 - D. Cross-sectional study
7. A key feature of a cross-sectional study is that:
 - A. It usually provides information on prevalence rather than incidence
 - B. It is limited to health exposures and behaviors rather than health outcomes
 - C. It is more useful for descriptive epidemiology than it is for analytic epidemiology
 - D. It is synonymous with survey
8. The purpose is to limit the incidence of disease by controlling causes and risk factor?
 - A. Primordial prevention
 - B. Primary prevention
 - C. Secondary prevention
 - D. Tertiary prevention
9. Occurrence in the community of a number of cases of disease that is unusually large or unexpected?
 - A. Endemic
 - B. Epidemic
 - C. Pandemic
 - D. Infection

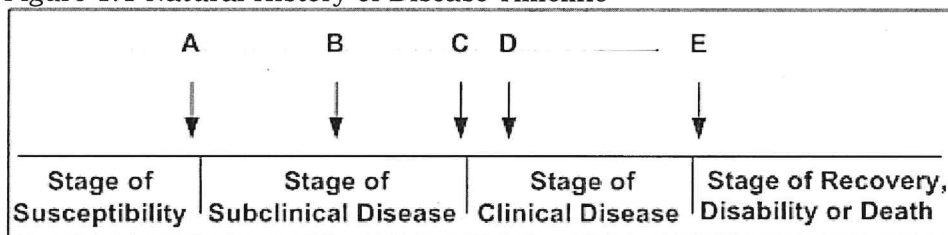
10. Health education on early diagnosis and treatment is?
 - A. Primary prevention
 - B. Secondary prevention
 - C. tertiary prevention
 - D. primordial prevention
11. The following are measures of disease frequency, except
 - A. Incidence rate
 - B. Prevalence
 - C. Cumulative incidence
 - D. Relative risk
12. The proportion of cases of a specified disease or condition which are fatal within a specified time?
 - A. Morbidity rate
 - B. Case fatality rate
 - C. Proportionate mortality
 - D. Death rate
13. Recall is an example of what type of bias?
 - A. Selection bias
 - B. Information bias
 - C. Confounding
 - D. Systematic
14. The extent to which a specific health care treatment, service, procedure, program, or other intervention produces a beneficial result under ideal controlled conditions is its?
 - A. Effectiveness
 - B. Efficacy
 - C. Efficiency
 - D. Effect modification
15. The number of new cases occurring in a defined population during a specified period of time is?
 - A. Incidence
 - B. Prevalence
 - C. Odds ratio
 - D. Mortality rate
16. According to Holistic concept, health is considered as:
 - A. Absence of disease
 - B. Proper adequate environment
 - C. Good interpersonal relationship
 - D. Sound body with sound mind living in sound family surrounded by sound environment.
17. Which of the following constitutes specific protection?
 - A. Immunization
 - B. Avoidance of allergens
 - C. Chemoprophylaxis
 - D. Health education
18. Keeping the frequency of illness within acceptable limits is best described by the following except?
 - A. Elimination
 - B. Control
 - C. Eradication
 - D. Surveillance
19. The first step in investigation of an epidemic is?
 - A. Confirming the existence of epidemic

- B. Defining the population at risk
 - C. Rapid search for cases and their characteristic
 - D. Applying control measures
20. According to iceberg concept of disease clinical disease phase involves the following except?
- A. Death
 - B. Severe disease
 - C. Mild illness
 - D. Exposure without infection
21. Primary health care focuses on:
22. (a) Providing early diagnosis and treatment
23. (b) Performing health surveillance measures
24. (c) Exploring the relationship between determinants of health
25. (d) Reducing inequity and improving effects of disadvantage

SECTION B: SHORT ANSWER QUESTIONS (40 Marks)

1. Differentiate between analytical and descriptive epidemiological studies (4 Marks)
2. Define the following terms as used in epidemiology and community (4 Marks)
 - i. Prevalence
 - ii. Distribution
 - iii. Community
 - iv. Primary health care
3. Briefly explain the roles of epidemiology (4 Marks)
4. For each of the following, identify the appropriate letter from the time line in Figure 1.1 representing the natural history of disease. (4mks)
 - i. Incubation period
 - ii. Pathological changes
 - iii. Exposure
 - iv. Usual time of diagnosis

Figure 1.1 Natural History of Disease Timeline



5. In country X with a population of 6 million people, 60,000 deaths occurred during the year ending December 31, 2010. These included 30,000 deaths from cholera in 100,000 people who were sick with cholera. What was the cause-specific mortality rate and case-fatality from cholera in 2010? (4 marks)
6. Explain the primary level of disease prevention (4marks)
7. State the roles of community health worker (4marks)
8. Population of Baguio City (2020) was 330,900. The number of new active TB cases occurring between January 1 and June 30 of the same year is 50. The number of active TB cases according to the department of health registry on June 30, 2020 is 400.
 - a) What is the incidence of TB for the 6 months' period? (2 marks)
 - b) What is the prevalence rate of active TB as of June 30, 2020? (2 marks)

9. Discuss the problems with incidence and prevalence measurements (4 marks)
10. Enumerate on the wheel model theory of disease causation (4 marks)

SECTION C: SHORT ANSWER QUESTIONS (60 Marks)

1. Describe the stages in the natural history of a communicable disease giving relevant examples (10 marks)
2. State and explain the characteristics of health indicators in community diagnosis (10 marks)
3. Provide a comprehensive account of clinical features, diagnosis, causative organism and mode (s) of transmission cholera. Explain the current disease prevention techniques used to control the disease with an emphasis on primary and secondary prevention measures (10 marks)
4. Discuss the Basic Requirements for Sound Primary Health Care (10 Marks)
5. Explain the two (2) types of surveillance as used in disease control citing their advantages and disadvantages (10 marks)
6. Discuss the steps involved in community diagnosis (10 marks)

