



**TECHNICAL UNIVERSITY OF MOMBASA  
FACULTY OF APPLIED AND HEALTH SCIENCES**

**DEPARTMENT OF ENVIRONMENT AND HEALTH SCIENCES**  
UNIVERSITY EXAMINATION FOR THE DIPLOMA IN COMMUNITY HEALTH  
(DCHM18M, DEHS 18S)

**APH 2202: FUNDAMENTALS OF EPIDEMIOLOGY**  
SEMESTER EXAMINATION

AUGUST, 2019

2 HOURS

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**INSTRUCTIONS TO CANDIDATES**

*This paper consists of **FIVE** questions*

*Answer question **ONE** (compulsory) and any other **TWO** questions*

*This paper consists of two **PRINTED** pages*

**QUESTION ONE**

- a. Define the following terms (**10 marks**)
  - i. Outbreak
  - ii. Pandemic
  - iii. Passive surveillance
  - iv. Agent
  - v. Host
  
- b. Name **TWO** scientists and state their contribution towards the development of epidemiology (**4 marks**)

- c. State three levels of disease prevention (**3 marks**)
- d. In 1996 there were 1000 tuberculosis patients in one region. Out of the 1000 patients 100 died in the same year. Calculate the case fatality rate of tuberculosis. (**4 marks**)
- e. Name **FOUR** Diseases targeted for eradication and elimination (**4 marks**)
- f. Give **TWO** advantages of active surveillance and **THREE** disadvantages of active surveillance (**5 marks**)

## QUESTION TWO

Explain the procedure of conducting field epidemiological investigation of an outbreak in your country (**15 marks**)

## QUESTION THREE

- a. Define the term Crude Death Rate (CDR) and state its formula (**3 marks**)
- b. Calculate the following (**12 marks**)
  - i. In Ginbot 1995 there were 50 new cases of relapsing fever in “Kebele X”. The average total population of “Kebele X” was 5000. **Calculate the incidence rate of relapsing fever in “Kebele X” in Ginbot 1995.**
  - ii. One health extension worker conducted a survey in one of the nearby elementary schools on Hidar 10, 1996 to know the prevalence of trachoma in that school. The total number of students in that school was 200. The health extension worker examined all the 200 students for trachoma. Hundred students were found to have trachoma. **Calculate the point prevalence rate of trachoma for that school.**
  - iii. In 1996 there were 1000 tuberculosis patients in one region. Out of the 1000 patients 100 died in the same year. **Calculate the case fatality rate of tuberculosis**

- iv.** In 2016 the total number of children under 5 years of age was 10,000 in “Zone C”. In the same year 200 children under five years of age died. Calculate the under five-mortality rate (U5MR)

#### **QUESTION FOUR**

Explain the following terms as used in epidemiology **(15 marks)**

- I. Population
- II. Frequency.
- III. Distribution
- IV. Determinants
- V. Application of the studies to the promotion of health and to the prevention and control of health problems.

#### **QUESTION FIVE**

Define the term Active Surveillance and explain the conditions where Active Surveillance is appropriate **(15 marks)**