



(University of Choice)

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

(MAIN CAMPUS)

**UNIVERSITY EXAMINATIONS (SUPP/SPECIAL PAPER)
2020/2021 ACADEMIC YEAR**

FIRST YEAR FIRST SEMESTER EXAMINATIONS

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

COURSE CODE: BML 813

COURSE TITLE: MEDICAL EPIDEMIOLOGY

DATE: 25TH JULY 2022

TIME: 2.00 -4.00 PM

INSTRUCTIONS TO CANDIDATES

This paper consists of three sections: five questions:

- i. Number one is compulsory, choose three questions from the remaining

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over

Instructions: Answer question one and any other three questions

1.
 - a. Explain five ways in which confounders can be dealt with in a study (10 Marks)
 - b. Discuss Cohort study design (10marks)
 - c. Discuss the following terms as used in assessing the validity of a screening test provide the formulae used in each (5 marks)
 - Sensitivity
 - Specificity
 - positive predictive value
 - negative predictive value
 - distribution
2.
 - a. Describe the natural history of a disease (20 marks)
 - b. Giving examples, classify disease transmission in epidemiology (5 marks)
3.
 - a) Briefly describe cross sectional study design and give advantages and disadvantages of the study design (10 marks)
 - b. Differentiate passive and active surveillance (10 Marks)
 - c. State five (5 ways) in which observed prevalence can be increased (5 marks)
4.
 - a. An investigator conducts a study to determine whether there is an association between caffeine intake and Parkinson's disease. He assembles 230 incident cases of PD and samples 455 controls from the general population. After interviewing all subjects, he finds that 64 of the cases had high daily intake of caffeine (exposed) prior to diagnosis and 277 of the controls had low daily intake of caffeine (unexposed) prior to the date of the matched case's diagnosis.
 - Assemble the 2x2 table for this study using the information given. (2 marks)
 - Calculate the odds of being a case among the exposed (2 marks)
 - Calculate the odds ratio for disease given exposure to high daily intake of caffeine (versus low daily intake of caffeine). (2 marks)
 - What does the odds ratio indicate? (2marks)
 - b. Identify the basic principles of ethics that guide studies dealing with human subjects (10 marks)
 - c. Give any seven classifications of communicable diseases (7 Marks)
5.
 - a) Discuss five ways of expressing prognosis in the natural history of disease (15 marks)
 - b) Briefly explain four methods of non-probability sampling methods used in epidemiological studies in Kenya (10 marks)