



WI-2-60-1-6

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

UNIVERSITY EXAMINATIONS 2023/2024

END OF SEMESTER EXAMINATION FOR THE DEGREE OF MASTERS

PEH 3100/TID 3101: PRINCIPLES OF EPIDEMIOLOGY/EPIDEMIOLOGY

DATE: AUGUST 2024

TIME: 3 HOURS

INSTRUCTIONS: ANSWER ANY FOUR (4) QUESTIONS

- 1a). Disease x has been identified in a population of 250,000 people. Over the course of one year, 750 new cases have been reported, and 50 people have died from the disease. Calculate the following:
- Incidence rate (3 Marks)
 - Prevalence rate at the end of the year, assuming there were 200 existing cases at the beginning of the year (3 Marks)
 - Case-fatality rate (4 Marks)
- b). With relevant examples, discuss the significance of each of the above morbidity measures in public health planning and policy-making and show how health authorities use these measures to address an outbreak? (15 Marks)
- 2a). Analyze the role of epidemiology in understanding the natural history of disease and informing the levels of prevention. (15 Marks)
- b). In your own words, what do you understand by the term “carrier”. Briefly describe properties of a carrier (10 Marks)
- 3). Critically evaluate the ethical considerations involved in implementing a population-based screening program. In your discussion, address informed consent, potential harms and equity. Use examples from real-world screening programs to support your analysis. (25 Marks)
- 4a). Epidemiology plays a vital role in policy evaluation. Discuss how the field epidemiology might inform policy evaluation of laws that regulate drunk driving. (15 Marks)
- b). Briefly describe circumstances that can cause an epidemic a population (10 Marks)
- 5a). Discuss the main components of descriptive epidemiology. In your answer cover person, place and time. (9 Marks)
- 5b). Briefly discuss how descriptive and analytic epidemiology approaches complement each other in the field of public health. (16 Marks)
- 6a). Compare and contrast the measures of association used in different epidemiologic study designs: cohort studies, and case-control studies. (15 Marks)
- b). Discuss the strengths and limitations of each measure in providing causal inferences. (10 Marks)