



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF HEALTH SCIENCES

**UNIVERSITY EXAMINATION FOR THE DEGREE IN COMMUNITY HEALTH AND
DEVELOPMENT**

2nd YEAR 2nd SEMESTER 2023/2024 ACADEMIC YEAR

KISUMU CAMPUS

COURSE CODE: HCB 1208

COURSE TITLE: PRINCIPLES OF EPIDEMIOLOGY

EXAM VENUE:

STREAM

DATE:

EXAM SESSION:

TIME:

2.00 HOURS

Instructions:

- 1. Answer all questions in section A and any other 2 questions in Section B.**
- 2. Candidates are advised not to write on the question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION (30 MKS)

1. Distinguish between observational and experimental epidemiological study designs (3 marks)
2. Outline the qualities of a cancer screening test (3 marks)
3. State the components of the epidemiological triad (3marks)
4. Distinguish between the following terms;
 - (a) Period and point prevalence (2 marks)
 - (b) Epidemic and pandemic (2 marks)
5. Explain the natural history of diseases (3 marks)
6. Which study design utilizes the odds ratio as a measure of frequency (1 mark)
7. Calculate the odds ratio from the data on the table below; (1 mark)

	Disease	No Disease	
Exposed	200	3800	
Not exposed	160	15,840	

8. Explain the concept of confounding and its occurrence in epidemiology (4 marks)
9. State FOUR characteristics of health indicators (2 marks)
10. In an outbreak of tuberculosis among prison inmates in Naivasha in 2015, 28 of 157 inmates residing in dormitory A developed tuberculosis, compared with 4 of 137 inmates residing in dormitory B, Using a two-by-two table. Calculate the risk ratio (3 marks)
11. Define disease surveillance and explain two (2) characteristics (3 marks)

SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION (40 MKS)

1. a. Discuss the concept of “herd immunity” (10 marks)
b. Explain the key features of Randomized Controlled Trials (10 marks)
2. a. Discuss on the steps of the chain of infection and mitigation measures you would apply at each step (10 marks)
b. Discuss on the various types of bias in epidemiological studies and how they can be prevented (10 marks)
3. a. Compare and contrast a qualitative and quantitative study design (10 marks)

- b. Discuss the various data collection methods in a qualitative study (10 marks)
4. a. Discuss on the nosocomial pathogens, determinants, reservoirs, prevention and control of nosocomial infections at Kisumu District Hospital (15 marks)
- b. A 2 x 2 table for evaluating a diabetic retinopathy screening test for 33.750 people is as shown below. Use the result to evaluate the test (5 marks)

Screening test results	Diabetic retinopathy		Total
	Present	Absent	
Positive	3,200	1,400	
Negative	150	29,000	