CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

RESIT/SPECIAL EXAMINATION

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN HEALTH RECORDS AND INFORMATION MANAGEMENT

HRIM 225: EPIDEMIOLOGY FOR HEALTH RECORDS AND INFORMATION MANAGERS II

STREAMS: BSC HRIM **TIME: 2 HOURS**

DAY/DATE: THURSDAY 16/09/2021 **11.30 A.M – 1.30 P.M.**

INSTRUCTIONS:

- Section A is compulsory
- Question **two in section B** is compulsory
- Answer any other one question in section B

SECTION A. ANSWER ALL QUESTIONS 40 MARKS

Question one:

i. Explain the following epidemiological terms [6 marks]

a. Epidemic

b. Outbreak

c. Cluster

ii. Public health officials were called to investigate a perceived increase in visits to ships' infirmaries for acute respiratory illness (ARI) by passengers of cruise ships in Alaska in 1998. The officials compared passenger visits to ship infirmaries for ARI during May–August 1998 with the same period in 1997. They recorded 11.6 visits for ARI per 1,000 tourists per week in 1998, compared with 5.3 visits per 1,000 tourists per week in 1997. Calculate the rate ratio.

[6 Marks]

iii. In a study of smoking and lung cancer, the lung cancer mortality rate among nonsmokers was 0.07 per 1,000 persons per year. The lung cancer mortality rate among persons who smoked 1–14 cigarettes per day was 0.57 lung cancer deaths per 1,000 persons per year. Calculate the attributable proportion. Interpret your answer.

[6 Marks]

iv. Discuss the following measures of Morbidity giving formulas. [6 marks]

i) Point Prevalence
ii) Period prevalence

v. Outline three factors that may lead to decrease and three factors that may lead to increase in prevalence of a disease in particular community [6 marks]

vi. . The prevalence of Disease X in a group of college 2000 students is 10%. The screening test for Disease X is 90% sensitive and 70% specific. Draw a 2X2 contingency table and calculate the predictive value negative. Show your work. [6 marks]

SECTION B – ATTEMPT QUESTION TWO, AND ANY OTHER ONE

QUESTION TWO:

As an epidemiologist, explain the process of deciding whether to investigate a possible outbreak. [15 marks]

QUESTION THREE:

As a beer manufacturer, you predict that among beer drinkers, drinking Karatusi products might be associated with earlier mortality from cirrhosis than drinking other brands of beer. To test this hypothesis you conduct a case-control study in which beer-drinking patients who recently died of alcohol-related cirrhosis were compared to control cirrhotic patients who are surviving. Your

study finds that 60% of the recent deaths due to alcohol-related cirrhosis were long-time Karatusi drinkers, versus 15% of the control patients were long term Karatusi drinkers.

b) Before you do any math, can you think of some three biases that might come into play in the design of this study? [6 marks]

c) According to these data, how many times does Karatusi drinking increase the risk of death due to cirrhosis? Are you calculating an OR or an RR? Why is that important? [3 marks]

d) Give three advantages and three disadvantages of using the study design above [6 marks]

QUESTION FOUR:

You intend to carry out an epidemiological study on prevalence of malaria in country X, describe any five sources of epidemiological data that will help you achieve the goal of this study and two examples of data that you generate from each of the said sources. [15 marks]
