CHUKA  **UNIVERSITY**

UNIVERSITY EXAMINATIONS

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: **TIME: 2 HOURS**

DAY/DATE: TUESDAY 23/03/2021 **8.30 A.M – 10.30 A.M**

INSTRUCTIONS:

1. **Section A is compulsory**
2. **Question two in section B is compulsory**
3. **Answer any other one question in section B**

SECTION A: ANSWER ALL QUESTIONS (40 MARKS)

QUESTION ONE

(i) Explain the following epidemiological terms

(a) Reservoir [2 marks]

(b) Carrier [2 marks]

(ii) Name the type of study that best matches the description. [5 marks]

a. _____study is based upon exposure status

b. _____ study is used with a small, define population

c. _____ study uses the odds ratio to calculate relevant data.

d. _____ Type of study is also known as a survey.

e. _____ study compares groups of people to determine a cause of a disease.

(iii) Describe any two types of disease that require outbreak investigation. Give an example in each category.

(iv) 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.

(a) Draw a 2X2 contingency table and calculate the predictive value negative. Show your work. [6 marks]

(b) Write a sentence defining the predictive value negative you calculated above. Your sentence must include the actual predictive value negative value you obtained. [3 marks]

(v) Researchers are today given the medical records of 100 patients who died of lung cancer and 200 patients who died from other causes. Using information in the medical records, the researchers determined that 20 of the lung cancer patients worked in ship factories during world war II while 10 of the individuals in the other group worked in ship factories during world war II. Calculate the strength of association between the exposure and the outcomes. Show your work. [6 marks]

(vi) Surgeons perform a new surgical procedure on 10 patients and report their outcomes. What kind of study is this? Explain your answer. [6 marks]

(vii) A group od pediatricians follows a group of babies who are breastfed for six months following birth compared to another group of babies who are not breastfeed for six months following birth. The pediatricians want to determine if there is a difference in the incidence of group between the two groups over this six month period. Of 100 breastfed babies, 2 babies develop the croup and of 50 babies who are not breastfed, 5 develop the croup. Calculate and interpret the correct measure of association of breastfed babies developing croup over the six months compared to babies who are not breastfed. [6 marks]

SECTION B; ATTEMPT QUESTION TWO AND ANY OTHER ONE

1. (a) Define the natural history of disease and outline the four stages of disease progression that an infection of HIV for examples will undergo. [10 marks]

   (b)Describe the epidemiological chain of disease transmission of the HIV infection above. [5 marks]

2. As a beer manufacturer, you predict that among beer drinkers 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.

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

(b) 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]

(c) Give three advantages and three disadvantages of using the study design above. [6 marks

3. 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]

4. (a) Discuss the following measures of morbidity giving formulas.

(i) Point prevalence [3 marks]

(ii) Period prevalence [4 marks]

(b)Outline four factors that may lead to decrease and four factors that may lead to increase in prevalence of a disease in particular community. [8 marks]
