JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATIONS 2014/2015

FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH

KISII LEARNING CENTRE

COURSE CODE: HMP **5112**

TITLE: PRINCIPLES OF EPIDEMIOLOGY

DURATION: 3 HOURS

INSTRUCTIONS

1. THIS PAPER CONTAINS SIX QUESTIONS.

2. ANSWER ANY FOUR QUESTIONS. QUESTION ONE IS COMPULSORY

3. WRITE ALL ANSWERS IN THE BOOKLET PROVIDED

SECTION A

1. In a population of 700 people of whom 100 had hearing problems and 600 did not, an audiometer was used to screen the population and the results indicated that 80 of the patients with disease and 140 of these without the disease were labelled as positive by the screening method.

i) Summarize this information in a 2 x 2 contingency table. (2 marks)

ii) Calculate the sensitivity of the screening method. (2 marks)

iii) Calculate the specificity the screening method. (2 marks)

iv) Calculate the accuracy of the screening method (2 marks)

v) Calculate the positive predictive value. (2 marks)

vi) Highlight the public health significance of the false positives and false negatives giving relevant examples. (5 marks)

SECTION B

2. On March 31st 2013 at 8.00 a.m., one male patient aged 20 years was seen at the casualty department of Kisii Level 5 Hospital with complaints of diarrhoea, vomiting and abdominal pains. Thirty minutes later, two more patients, a female 30 years and a male 50 years old were brought to the same casualty department with similar complaints as above. Two hours later, ten patients were ushered into the casualty department with similar complaints as above.

   Do we have an epidemic?

   Describe in details the steps you would take to investigate the situation and explain how you would go about stopping and controlling the situation. (15 marks)

3. Using the epidemiological triad discuss the various determinants of disease and suggest how the balance may be modified to prevent disease. (15 marks)

4. Outline the four levels of chronic disease prevention that correspond to different phases in the development of disease. (15 marks)

5. Describe the primary uses of epidemiology in public health practice. (15 marks)

6. Risky sexual behaviour is suspected to be the driving force behind increased incidence of HIV/AIDS. Describe in detail how you would design a study to make inferences on this potential association. (15 marks)