KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2008/2009
SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE
(ENVIRONMENTAL HEALTH & FOODS, NUTRITION AND DIETETICS)

HEH 200: INTRODUCTION TO EPIDEMIOLOGY

DATE: Monday 7th September, 2009 **TIME:** 8.00 a.m -10.00 a.m

INSTRUCTIONS

SECTION A

Answer ALL Questions in this section.

1. Explain the meaning of the following concepts as used in Epidemiology
   i) Carrier
   ii) Prognosis
   iii) Herd immunity
   iv) Case fatality rate (4 marks)

2. Outline 4 main sources of morbidity statistics. (4 marks)

3. Highlight the procedures that may be employed to protect the confidentiality of subjects in epidemiological studies. (4 marks)

4. Explain the major uses of epidemiology in support of Public Health.

5. Explain the importance of understanding the natural history of disease. (4 marks)

SECTION B (50 MARKS)

Answer Question ONE and any other TWO.

1. a) The following table shows the results obtained in a screening test for diabetes used on 5,000 persons. The cut off employed was a glucose value of 180 mg/dl or above as positive for diabetes.

Test Result	True Diagnosis		Total
	Diabetic	Non Diabetic	
Positive	17	10	27
Negative	58	4,915	4,973
Total	75	4,925	5,000

Calculate

i) Sensitivity. (2 marks)

ii) Specificity (2 marks)

iii) Positive predictive value. (2 marks)

iv) Accuracy (2 marks)

b) What the screening cut off was lowered to a blood glucose value of 130 mg/dl 49 of the 87 persons who were tested positive were among the 4,925 persons judged by the diagnostic test NOT to have diabetes.

Calculate

i) Sensitivity at cut off (2 marks)

ii) Specificity at cut off (2 marks)

c) What is the effect of lowering the cut off point in terms of sensitivity and specificity. (2 marks)

d) Highlight the significance of false positives and false negatives in epidemiology. (6 marks)

2. Give a detailed account on how you can investigate a disease outbreak. (15 marks)

3. Discuss the main ways of expressing prognosis of disease. (15 marks)

4. a) Write short notes on evolution of epidemiology. (10 marks)

b) Outline various modes of transmission of disease. (5 marks)