



# Technical University of Mombasa

*Faculty of Applied and Health Sciences*

**DEPARTMENT OF ENVIRONMENT AND HEALTH SCIENCES**

DIPLOMA IN NUTRITION HEALTH  
(DNH 12S)

**APH 2202 : BASIC EPIDEMIOLOGY**

**SPECIAL /SUPPLEMENTARY: EXAMINATIONS**

**SERIES: OCTOBER 2013**

**TIME: 2 HOURS**

## **INSTRUCTIONS:**

You should have the following for this paper

- *Answer booklet*

This paper consists of **FIVE** questions.

Answer Question **ONE (compulsory)** and any other **TWO** questions

*This paper consists of 3 PRINTED pages*

## Question ONE

- a) (i) Name the study design can be either retrospective or prospective and is often used when the investigators are interested in rare exposures? **(1mark)**
- (ii) Describe the term “ecological fallacy”. **(3marks)**
- (iii) Outline the differences between descriptive and analytic studies **(3marks)**
- b) (i) What does a relative risk of 1 mean? **(2marks)**
- (ii) What does a relative risk of 0.5 mean? **(2marks)**
- (iii) Interpret the following relative risk for the relation between lack of clean water and conjunctivitis, Relative risk = 1.5 (95% CI 0.5 – 2.5) **(3marks)**
- c) You do a study with 20 risk factors for cancer and calculate 95% confidence interval for each of these factors. How many risk factors do you expect to show a significant association based on chance alone. **(3marks)**
- d) Define the following terms as applied in epidemiology
- (i) Case fatality **(2marks)**
- (ii) Cumulative incidence **(2marks)**
- (iii) Prevalence **(2marks)**
- (iv) Attributable risk **(2marks)**
- (v) Odds ratio **(2marks)**
- e) Name THREE factor that contribute to the likelihood of occurrence of outbreak of infectious diseases in refugee camps? **(3marks)**

## Question TWO

As the D.P.H.O of one of the districts in Mombasa country you get a report of an infectious disease outbreak in one of the districts. Describe in detail the steps you would take to investigate the outbreak

**(15marks)**

## Question THREE

The risk of urban malaria is estimated in two cities (both in the same region) during the rainy season of 2013. One city is situated next to a swamp (city A) and city B, in the mountains. Both cities with a population of 100,000. City A had 200 malaria cases and city B 100 cases.

- a) What is the population at risk **(2marks)**
- b) Make a two by two table with these figures **(4marks)**
- c) What is the risk (attack rate) of malaria in city A? **(2marks)**
- d) What is the risk malaria in city B : **(2marks)**
- e) What is the relative risk of malaria when comparing the two cities ? Explain in words. **(3marks)**
- f) What kind of study design was used here? **(2marks)**

#### **Question FOUR**

A survey asked 1000 people whether they had a cold last year. They counted 592 who answered yes and 198 answered no summarize the data by

- a) Presenting the data in a table (5marks)
- b) Present the data in a graph (7marks)
- c) Interpret the results (3marks)

#### **Question FIVE**

Describe the key characteristics of the following study designs citing the strengths and weaknesses of each.

- a) Ecitistical study design (3marks)
- b) Cross enchorial study design (3marks)
- c) Case-control study design (3marks)
- d) Cohort study design (3marks)
- e) Randomized controlled trial (3marks)