



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF ENVIRONMENT & HEALTH SCIENCES

UNIVERSITY EXAMINATION FOR:

MASTER OF PUBLIC HEALTH

APH 5114: EPIDEMIOLOGY IN PRACTICE

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 3 HOURS

DATE: 19 Mar 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **SIX** Question(s). Attempt **Choose** instruction.

Do not write on the question paper.

QUESTION ONE (COMPULSORY), ANSWER ANY OTHER FOUR QUESTIONS

Question ONE

- A. The preventive advantages of eating fish have been reported in numerous studies. A recent cohort study reported that not eating fish increased the risk for stroke. Out of the 2433 participants enrolled, 1631 had never eaten fish in the last five years. Further analysis showed from this group 82 had suffered stroke. Among those who ate fish on regular basis only 23 suffered from stroke. With reference to this statement
- tabulate this information [2 marks]
 - Calculate the relative risk [3 marks]
 - Calculate the attributed risk [3 marks]
 - Calculate the attributed risk percent [2 marks]
 - Calculate the population attributed risk percent [3 marks]
- B. A number of passengers on a cruise ship from Puerto Rico to the Kilindini harbor have recently developed symptoms similar to Zika virus defining illness. Test kits for Zika virus are not readily available in Kenya. Assuming you are the epidemiologist called on to investigate this possible outbreak, describe

- i. Two modes of transmission of Zika virus [2 marks]
 - ii. Five defining symptoms of Zika virus [5 marks]
- C. In the context of influenza pandemics describe 6 levels of alert [6 marks]
- D. Describe four factors to consider when choosing a study design [4 marks]

Question TWO

The county government of Mombasa is funding several biomedical studies within the county. As the County Director of Public Health, discuss categories of persons considered as vulnerable to coercion or undue influence in a research setting. [30 marks]

Question THREE

Systematic errors (biases) are reproducible inaccuracies that produce a consistently false pattern of differences between observed and true values. Discuss any five common categories of bias that can affect the validity of research under subsequent subheadings

- a) Selection biases [10 marks]
- b) Measurement biases [10 marks]
- c) Intervention biases [10 marks]

Question FOUR

Emerging diseases are a major threat to human and veterinary public health. With new examples occurring approximately one each year, the majority are viruses originating from an animal host. Discuss factors contributing to emerging and reemerging infectious diseases. [30 marks]

Question FIVE

The Randomized Clinical Trial (RCT) is considered the gold standard of study designs.

- a) Using HIV candidate vaccine trial in a hypothetical situation, describe what an RCT involves. [20 marks]
- b) Discuss 5 limitations of an RCT study design. [10 marks]

Question SIX

Researchers and physicians often use human beings as objects of scientific investigation raising ethical concerns including the issue of informed consent. Although research ethics is a relatively new aspect of applied ethical thinking, the need to conduct research in an ethical manner is not a novel one. In fact, it is the tendency by researchers to violate ethical guidelines that led to the development of research ethics.

- a) Discuss five unethical issues from the infamous Tuskegee Syphilis Study [10 marks]
- b) Discuss what a truly informed consent would entail [20 marks]