

TECHNICAL UNIVERSITY OF MOMBASA
FACULTY OF APPLIED AND HEALTH SCIENCES
DEPARTMENT OF ENVIRONMENT AND HEALTH SCIENCES
University examination for Master of public health degree

APH 5114: Epidemiology in Practice

Question one is compulsory. Answer any other 3 questions

Question one

- a. Explain how epidemiological study designs can be used to evaluate a screening programme (6 marks)
- b. An investigator will be using human hearts in order to study factors leading to heart failure. One group of normal, control hearts will be obtained from cadavers. A set of diseased hearts will be obtained from individuals who are to receive a heart transplant. Does this study involve human subjects? (4 marks)
- c. Describe the different reasons for conducting community trials (6 marks)
- d. Some types of research involve a significant commitment from research participants in terms of time or effort, and investigators may wish to provide compensation. Compensation is not a benefit of the research. If compensation is offered, discuss the salient pieces information that should be included in the informed consent (9 marks)
- e. Written informed consent is a central requirement for ethical research. Discuss the essentials for an informed consent (5 marks)

Question two

Describe the four levels of prevention. Give examples of action at each level which would be appropriate as part of a comprehensive programme to prevent stroke (30 Marks)

Question three

In research ethics, risk is the “probability that a certain harm will occur.” All research involves some level of risk. Discuss the five types risks that individuals may be exposed to when participating research (30 marks)

Question four

- a) Describe the important ways to control for confounding when designing a study and the options for controlling confounding in the analysis stage (10 marks)
- b) Discuss the four different types of screening (8 marks)
- c) The criteria for establishing a screening programme is usually related to the characteristic of the disorder or disease, its treatment and the screening test. Discuss any six requirements for instituting a medical screening programme (12 marks)

Question five

- a. Discuss the main types of systematic error in epidemiological studies (15 marks)
- b. Explain techniques used in medical research to reduce information bias (15 marks)

Question Six

- a) The housefly feeds on typhoid bacilli-infected excreta in the latrines/toilets and is able to carry such excreta from sick to the healthy. In a city with stable population; the latrines were open and accessible to the housefly. In a period of a few months toward the end of the year, the latrines were all made flyproof. The number of cases listed in the table below of typhoid fever occurred in the city the year before and the year after the latrines were made flyproof, by month

	Typhoid cases occurring before flyproofing	Typhoid cases occurring after flyproofing
January	8	9

February	0	5
March	4	7
April	6	4
May	41	11
June	41	18
July	109	10
August	82	5
September	14	7
October	15	8
November	7	2
December	2	4
Total	329	90

- i. Which study design was applied in the study above (4 marks)
 - ii. What are your reasons for the study design in (a) above (4 marks)
 - iii. What inferences would you derive from these data (6 marks)
 - iv. Are there any additional data that you would like to have before deriving any inferences? If so, list the kind of data (6 marks)
- b) Discuss the strengths and weakness and advantages and disadvantages of cohort study designs: case-control, and cohort (10 marks)