

**TECHNICAL UNIVERSITY OF MOMBASA**

**FACULTY OF APPLIED AND HEALTH SCIENCES**

DEPARTMENT OF ENVIRONMENT AND HEALTH SCIENCES

University examination for bachelors' degree in community health (BSCH15J)

**Code: ACM 4301-Research methods**

**Question one**

- a) Define the following types of research: (2 marks)
  - i) Applied research (1 mark)
  - ii) Basic research (1 mark)
  
- b) Describe conditions that determine whether a problem requires research (3 marks)
  
- c) State 10 sources of information for literature review when preparing either a research proposal or report (5 marks)
  
- d) State the difference between probability and non-probability sampling methods? (2 marks)
  
- e) What are the points required to justify the selected research problem? (4 marks)
  
- f) When preparing a research proposal, why is it important to conduct an exhaustive literature review? (5 marks)
  
- g) In a school there are about 1800 students and the investigator wants to determine the prevalence of malaria by testing for malaria parasites in 450 students. The following table gives the distribution of students by class and number of streams.

| Class | No. of students | No. of streams |
|-------|-----------------|----------------|
| 5     | 600             | 8              |
| 6     | 500             | 7              |
| 7     | 400             | 6              |
| 8     | 300             | 5              |
| Total | 1800            | 26             |

- i. What type of sampling technique do you use? Why? (2 marks)
  - ii. How do you select the subjects who will be included in your sample? (4 marks)
- h) Explain why it is important to develop a plan for data collection? (3 marks)

**Question two**

It is suspected that malaria might be on the increase in Baringo County. If you are the Baringo County malaria coordinator and the director of health directs you to conduct a study on malaria so as to get a clear picture of malaria situation in the County

- a. State a possible title of the study (3 marks)
- b. Formulate a possible statement of the problem for the study (4 marks)
- c. Generate both general and specific objectives for the study (4 marks)
- d. Discuss the study design that is appropriate for this study (3 marks)
- e. What are the advantages and the disadvantages of the study design in d above (6 marks)

**Question three**

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

| 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         |
| <b>Total</b> | <b>329</b> | <b>90</b> |

- a) Which study design was applied in the study above (4 marks)
- b) What are your reasons for the study design in (a) above (4 marks)
- c) What inferences would you derive from these data (6 marks)
- d) Are there any additional data that you would like to have before deriving any inferences? If so, list the kind of data (6 marks)

#### **Question four**

Discuss the three stages in data collection (20 marks)

#### **Question five**

Provide summarized details of the major components of a research proposal (20 marks)