

# KISII UNIVERSITY SPECIAL/SUPPLEMENTARY EXAMINATIONS

## EPIDEMIOLOGY & BIostatistics CODE: CIMS 0274

### PART I: Short Essay Questions 60 marks

#### ATTEMPT ALL QUESTIONS: 10 Marks each

1. Explain five personal characteristics that influence disease/health related events in epidemiology
2. a) Outline four aims of epidemiology (8 marks)  
b) Mention two sources of epidemiological data (2 marks)
3. a) List three disadvantages of case control studies  
b Explain the meaning of the following notations as used in statistics (2 marks each)
  - a)  $\mu$
  - b)  $\sigma$
  - c)  $\sigma^2$
  - d) N
4. The following were the marks scored by ten students in an epidemiology CAT: 8, 6, 4, 8, 6, 6, 2, 10, 4, 6  
**Calculate;**
  - a) Range
  - b) Mode
  - c) Median
  - d) Mean
  - e) Standard deviation
  - f) Variance

#### MULTIPLE CHOICE QUESTIONS

1. **Measures of morbidity include;**
  - a). Incidence rate
  - b). Prevalence rate
  - c). Attack rate
  - d). All of the above
2. **Cross-sectional studies;**
  - a). Begins with the presence or absence of an outcome, then looks forwards in time
  - b). Do not use control groups
  - c). Selects subjects based on their exposure
  - d). All of the above
3. **Sources of data in surveillance include:**
  - a) Newspapers data
  - b) Epidemic data
  - c) Sporadic data
  - d) Data from foreign governments
4. **In the epidemiological triad, host factors that determine disease include:**

- a) Infectivity
- b) Pathogenicity
- c) Virulence
- d) Genotype

**5. Endemic disease:**

- a) Occasional cases of a disease occurring at irregular intervals
- b) Persistent occurrence of a disease with a low to moderate level
- c) Persistently high level of occurrence
- d) Occurrence clearly in excess of the expected level for a given time period

**6. Which of the following is correctly matched:**

- a) Primary prevention – early diagnosis and treatment
- b) Secondary prevention – health promotion and specific protection
- c) Primary prevention – health promotion and specific protection
- d) Secondary prevention – early diagnosis and rehabilitation

**7. About herd immunity:**

- a) Restricted to animals, especially vaccinated cattle
- b) The disease should have several hosts for herd immunity to work
- c) The population should be isolated
- d) The disease should induce solid immunity

**Use this information to answer question eight (8) and nine (9);**

In 2012, there were 330 cases of gonorrhoea in a certain population, by the end of 2013 the cases were 500. The 2013 mid-year population was estimated to be 12800.

**8. What was the prevalence in 2013:**

- a) 2.57%
- b) 1.32%
- c) 6.48%
- d) 3.9%

**9. Calculate the incidence:**

- a) 2.57%
- b) 1.32%
- c) 6.48%
- d) 3.9%

**10. Defacto method of census:**

- a) Persons are enumerated as members of an area even if they are temporarily absent at the time
- b) Visitors are get assigned to their usual place of residence although enumerated at the place of visit.
- c) Excludes foreigners and temporary visitors
- d) Counts persons according to their location at the time of enumeration irrespective of whether they belong to the place or not

**11. Concerning age shifting in demography:**

- a) Older unmarried women often under-state their ages

- b) It is a tendency for certain ages to be reported more than others
- c) More people report ages ending in “0” and “5”, fewer report ages ending with 1, 4, 6, and 9
- d) There is a tendency to avoid numbers that are thought to be unlucky

**12. Which of the following falls in the category of interval scale:**

- a) Gender – male/female
- b) Temperature
- c) Severity of injury – minor, moderate, severe
- d) Blood group

**13. When constructing a histogram:**

- a) The bars should have the same width but have spaces between them
- b) Display the data by using lines that connect points plotted for frequencies at the mid-point of the classes
- c) The bars should have the same width and touch each other
- d) Ensure that each bar is subdivided into two or more components

**14. Which of the following is a measure of central tendency:**

- a) Harmonic mean
- b) Range
- c) Standard deviation
- d) Variance

**15. The following are marks scored by 2<sup>nd</sup> year clinical medicine students, calculate the mean:**

Marks	f
0-10	6
10-20	5
20-30	8
30-40	15
40-50	7
50-60	6

- a) 55
- b) 33.4
- c) 50
- d) 35.5