



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2018/2019

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE (MEDICAL LABORATORY SCIENCE)

HML 411: PRACTICAL EPIDEMIOLOGY

DATE: Friday, 9th August 2019

TIME: 11.00 a.m. - 1.00 p.m.

INSTRUCTIONS:

SECTION A: ANSWER ALL QUESTIONS (5 MARKS EACH)

1. State the advantages and disadvantages of randomized control trials (5 marks)
2. Discuss various infection control measures used to address the spread of infections within the health-care setting (5 marks)
3. Compare and contrast cross-sectional and retrospective study design (5 marks)

SECTION B: ANSWER ANY ONE QUESTION (20 MARKS EACH)

4. (a) Describe the various components of personal protective equipment (PPE) (10 marks)
(b) Discuss demographic methods used for modeling population processes (10 marks)
5. Describe steps for formulating policies in infectious disease practice (20 marks).

SECTION C: ANSWER ALL QUESTIONS IN THIS SECTION (1/2 MARKS EACH)

1. Which of the following is an example of Fluoridation of water?
 - a) A primary prevention strategy
 - b) A secondary prevention strategy
 - c) A tertiary prevention strategy
 - d) It is not a prevention strategy

2. One of the following is character of single-exposure common-vehicle outbreak?
- a) Frequent secondary cases
 - b) Explosive
 - c) Increase severity with increase age
 - d) All of the above
3. Which of the following is an advantage of active surveillance?
- a) More accurate due to reduce reporting burden for health care providers
 - b) Requires less project staffs
 - c) Is relative inexpensive to employ
 - d) Reporting system can be developed quickly
4. A record the number of children in a Nairobi who have a flu in the first week during the month of January 2015. Which of the following measures of morbidity would be most appropriate in answering this question
- a) Point Prevalence
 - b) Period prevalence
 - c) Cumulative Incidence
 - d) Incidence Density
5. A research begun in 2000, a group of 1000 adults in Eldoret were asked about alcohol consumption. The occurrence of cases of cancer between 2012 and 2015 was studied in this group. This is an example of:
- a) A cross-sectional study
 - b) A concurrent cohort study
 - c) A clinical trial
 - d) A case-control study
6. Which statement is true about case –control study?
- a) The proportion of cases with the exposure is compared with the proportion of controls with the exposure
 - b) The investigator may choose to have multiple comparison
 - c) Recall bias is a potential problem
 - d) All of the above

7. In which one of the following types of study designs does a subject serve as his own control?

- a) Prospective cohort study
- b) Case –cohort study
- c) Case-crossover study
- d) Case-control study

8. The fact that a meta- analysis of what was considered 50 high quality studies in USA concluded that better use of a skin product halved the risk of developing pimples while as on black Kenyan women the risk was doubled is a case of

- a) Confounding
- b) Selection bias
- c) Unreliable statistical analysis
- d) Poor data analysis

9. One of the fundamental premises underlying the study of epidemiology is...

- a) disease, illness and ill health are randomly distributed in a population.
- b) disease, illness and ill health are not randomly distributed in a population.
- c) Disease, illness and ill health are only randomly distributed in large populations.
- d) Disease, illness and ill health are very rarely distributed in large populations.

10. Which of the following is an example of Fluoridation of water?

- a) A primary prevention strategy
- b) A secondary prevention strategy
- c) A tertiary prevention strategy
- d) It is not a prevention strategy

11. The extent to which a test for the hemoglobin levels of the Nairobi population is measuring what it is intended to measure is it's

- a) Reliability
- b) Validity
- c) Sensitivity
- d) specificity

12. A study is interested in knowing how many new cases of the measles developed at Ruiru academy in April 2018. Assuming that no children enrolled during that month, and no children moved during that month (all children were followed for the entire month), which measure of morbidity would be most appropriate in answering this question?

- a) Prevalence
- b) Point prevalence
- c) Cumulative Incidence
- d) Incidence Density

13. Which of the following is not a primary requirement for conducting screening for disease control

- a) Prevalence of the disease should be high in the population under study
- b) There should be a favorable prognosis for early treatment of the disease
- c) The government should fund the program.
- d) The disease should be serious

14. It is assumed that diseases can be transmitted directly or indirectly. A vector such as a tick is an example of

- a) direct disease transmission
- b) indirect disease transmission
- c) single exposure
- d) common vehicle exposure

15. What is the definition of Endemic.

- a) A disease usually seen at some times but not others
- b) A disease usually found in some places but not in others
- c) A disease usually found in one kind of people but not others
- d) A disease usually found in one species of animals but not others

16. The process of generalizing the findings of the study to the population from which the sample was drawn is referred to as

- a) External validity
- b) Internal validity
- c) Systematic calculation
- d) Statistical calculations

17. What term is used in identifying disease signs, symptoms and causes is

- (a) Epidemiology
- (b) Testing
- (c) Diagnosing
- (d) Treatment

18. The relative risk of a certain population in the community getting infected is

- a) More powerful effect measure than the odds ratio
- b) Less powerful effect measure than the odds ratio
- c) Is used to calculate true incidence
- d) Is used to calculate true prevalence

19. How can we reduce selection bias

- a) to randomly select the population
- b) to purposefully select the population
- c) use educated informants
- d) use only one population segment

20. One of the following statements is true about the association between precision and random error?

- a) Precision is inversely related to random error
- b) Precision is directly related to random error
- c) Precision is the same as random error
- d) There is no relationship

21. What term defines simultaneous presence of two medical conditions is

- a) Illness
- b) Co-morbidity
- c) Disease
- d) Disorder

22. You are interested in knowing how many new cases of the STIs developed at a local university in February 2019. Assuming that no student enrolled during that month, and no student moved during that month (all students were followed for the entire month), which measure of morbidity would be most appropriate in answering this question?

- a) Prevalence
 - b) Point prevalence
 - c) Cumulative Incidence
 - d) Incidence Density
23. The attack rate in susceptible people who have been exposed to a primary case is referred to as
- a) The attack rate
 - b) The post primary attack rate
 - c) The secondary attack rate
 - d) The person-to-person attack rate
24. One of the following surveillance strategies is associated with the least selection bias?
- a) Unlinked anonymous
 - b) Compulsory
 - c) Voluntary anonymous
 - d) Routine confidential
25. What is the main difference between an experimental and observational study?
- a) The investigator is "blinded" (prevented from knowing the subjects' true exposure status until the end of the study) in an experimental study but not in an observational study
 - b) The investigator controls the subject's exposure in an experimental study but not in an observational study
 - c) The investigator controls the subject's outcome in an experimental study but not in an observational study
 - d) Experimental studies are conducted with animals; observational studies are conducted with humans
26. What are the Key elements of surveillance include:
- a.) Ongoing collection of data, timely analysis, action, evaluation
 - b). Evaluation, mandatory participation, exclusion of certain individuals
 - c). Dissemination of results, collection of health data, a high level of accuracy
 - d.) All of the above

27. In a cohort study the population you select to study is based on those

- a) affected by the condition/disease.
- b) conditions where large numbers were affected.
- c) exposed to a condition/disease.
- d) who suffered long term injury or died from a disease/condition.

28 If a study is designed to determine the number of pregnancies there are in the first year of university, but it only includes christians the study is said to be

- a) biased.
- b) confounded.
- c) limited.
- d) nonessential.

29. Which of the following factors is most important when considering the validity of the results of a clinical trial?

- a) There are equal numbers of people in the intervention and control groups
- b) A relatively high incidence of the outcome of interest in the study population
- c) Inclusion of people of all ages
- d) Random allocation of participants to the intervention and control groups

30. A type of study where exposure data is correlated with health care data collected on individuals but summarized by place is referred to as

- a) a cohort
- b) case study
- c) ecological study
- d) population study