



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

BMLS

AML4313: EPIDEMIOLOGY

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2016**

**TIME: 2 HOURS**

**DATE:** Pick Date Select Month Pick Year

## **Instructions to Candidates**

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **TWO** Section(s). Attempt **ALL** questions.

**Circle the correct answer in section A.**

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## Section A

- Which of the following is an example of primary prevention of diseases?
  - Rehabilitation
  - Counseling
  - Prevention of environmental acquired diseases
  - Breast cancer screening through self examination and mammography
  - Colon cancer screening through occult blood test
- Which of the following is a disease transmission prerequisite?
  - Direct contact
  - Susceptible host
  - Portal of exit
  - Mode of transmission
  - Indirect contact
- Which of the following involves change in form and numbers?
  - Propergative
  - Cyclopropagative
  - Cyclodevelopmental

- d) Developmental
  - e) None of the above
4. Which of the following disease control measures are targeted to individual patient level?
- a) Route of transmission
  - b) Host
  - c) Screening
  - d) Targeted measures
  - e) Notification
5. The following prevention and control strategies target the reservoir host (Human host) EXCEPT?
- a) Quarantine
  - b) Notification
  - c) Surveillance
  - d) Vector control
  - e) None of the above
6. The following disease control strategies are targeted to improving quality of life EXCEPT?
- a) Diet
  - b) Behavioral
  - c) Hygiene practices
  - d) Chemoprophylaxis
  - e) Environmental engineering
7. Which of the following is the increased probability of a specified outcome not necessarily a causal factor?
- a) Determinant
  - b) Risk factor
  - c) Risk marker
  - d) None of the above
8. The following are clinical stages of the natural history of diseases EXCEPT?
- a) Medical care sought
  - b) Pathologic evidence of disease
  - c) Diagnosis
  - d) Treatment
  - e) Symptoms
9. The time interval between infections to development of clinical disease is also known as?
- a) Non- infectious period
  - b) Infectious period
  - c) Lag period
  - d) Latent period
  - e) Incubation period
10. Which of the following best defines RISK?
- a) Likelihood that an individual will contract a disease
  - b) Number of total cases of disease present at a particular time
  - c) Number of new cases, injuries, disabilities in a defined population
  - d) Extent of illness or disability in a defined population

- e) The accumulated number of cases
11. Which of the following is calculated using all the existing cases?
- a) Risk
  - b) Incidence rate
  - c) Prevalence rate
  - d) Cumulative incidence
  - e) Point incidence
12. Which of the following measures the rate of new diseases occurring over time?
- a) Risk
  - b) Prevalence
  - c) Cumulative incidence
  - d) Incidence rate
  - e) Point prevalence
13. Prevalence rates are increased by the following factors EXCEPT?
- a) Immigration of ill cases
  - b) Immigration of healthy cases
  - c) Emigration of susceptible cases
  - d) Prolongation of life cases without cure
  - e) All of the above
14. The following are sources of morbidity statistics EXCEPT?
- a) Surveys
  - b) Schools
  - c) Disease reporting
  - d) Absenteeism records
  - e) Hospital records
15. Which of the following studies start with a group of subjects who are negative of the outcome of interest?
- a) Experimental
  - b) Case control
  - c) Cohort
  - d) Ecological
  - e) Survey
16. Which of the following study design begins with the exposure levels
- a) Cohort
  - b) Case-control
  - c) Experimental
  - d) Survey
  - e) Randomized control trials
17. The following are potential biases in cohort studies EXCEPT?
- a) Analytical bias
  - b) Selection bias
  - c) Bias from non response
  - d) Selection bias

- e) Information bias
18. Which of the following is true about case- control studies?
- a) Useful in determining risk of exposure
  - b) Useful at one point in time
  - c) Useful in incidence studies
  - d) Useful when the disease being investigated is common
  - e) Useful when the disease being investigated is rare
19. The following are disadvantages of cohort studies EXCEPT?
- a) Information not readily available
  - b) Bias in selection
  - c) Expensive
  - d) Difficult to validate
  - e) Requires fewer subjects
20. Which of the following is true about selection of cases and controls?
- a) Select from one source
  - b) Only one control per case
  - c) Controls should be hospitalized patients
  - d) Select from a variety of sources
  - e) Choose incidence cases only
21. The following are recall problems in case-control except?
- a) Limitation in recall
  - b) Bias from lack of follow up
  - c) Recall bias
  - d) All of the above
  - e) None of the above
22. The following are disadvantages of cross section studies EXCEPT?
- a) Show association with survival but not risk of developing the disease
  - b) Identify prevalence but not incidence
  - c) Design less complex
  - d) Represent only those surveyed
  - e) Expensive to carry out
23. Which of the following is a retrospective study?
- a) Cross sectional
  - b) Case control
  - c) Concurrent cohort
  - d) Randomized trial
  - e) Longitudinal studies
24. Randomized trial is also known as?
- a) Prospective study
  - b) Retrospective study
  - c) Cross sectional study
  - d) Concurrent cohort
  - e) Experimental study

25. Which of the following is the odd one out?
- a) Concurrent cohort study
  - b) Prospective cohort study
  - c) Retrospective cohort study
  - d) Concurrent prospective study
  - e) Longitudinal study
26. The following are examples of randomized trials EXCEPT?
- a) Hormonal therapy on breast cancer
  - b) Effect of coffee on coronary heart disease
  - c) HIV AIDS in married women
  - d) Carotene and cancer
  - e) Effect of Z-map on Ebola patients
27. Why is randomization the best approach in selection of subjects?
- a) Uses random numbers
  - b) Non predictability
  - c) Instill physician bias
  - d) Use of non random numbers
  - e) Expensive approach
28. Stratified randomization is useful when using?
- a) A cross section study
  - b) Defined population
  - c) Two treatment groups
  - d) Carrying out experiments
  - e) There is a concern that certain variables may affect the outcome
29. Which of the following relates to accuracy?
- a) Reliability
  - b) Validity
  - c) Yield
  - d) Sensitivity
  - e) Predictive values
30. Which of the following statements is not true?
- a) As prevalence increases positive predictive value increases
  - b) As sensitivity increases positive predictive value increases but to a lesser extend
  - c) As specificity decreases, positive predictive value increases
  - d) As specificity increases, positive predictive value increases
  - e) As sensitivity increases positive predictive value remains constant

## Section B

1. Outline the advantages of prospective cohort and retrospective studies (10mks)
- ii. Describe matching in selection of cases and controls in case control studies (10mks)
2. Define and describe epidemiological surveillance (8mks)
  - a) Describe the following (12mks)
    - i. Indirect mode of disease transmission
    - ii. Masking in randomized controlled trials
    - iii. When is the odds ratio a good estimate of the relative risk