CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD DEGREE OF
BACHELOR OF SCIENCE IN HEALTH RECORDS AND INFORMATION
MANAGEMENT

HRIM 121: EPIDEMIOLOGY FOR HEALTH RECORDS AND INFORMATION
            MANAGERS I

 STREAM: HRIM Y1 S2   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 9/04/2020   **2.30 P.M - 4.30 P.M.**

INSTRUCTIONS:

Attempt All Questions

MULTIPLE CHOICE QUESTIONS   **[30 MARKS]**

1. In an epidemiological context, what is the population at risk ?
    A.   The proportion of a population that engage in risky behaviours.
    B. The group of people that may experience the outcome we want to study
    C. A group of people participating in a study that may be harmful to them.
    D. The population group with the highest relative risk of disease.

2. The incubation period is the interval between:
    A.   The time of infection and death
    B. Appearance of clinical symptoms and death
    C. The time of infection and appearance of clinical symptoms
    D. Time of infection and appearance of antibodies

3.   In which one of the following circumstances will the prevalence of a disease in the
    population increase, all else being constant ?
    A.   If the incidence rate of the disease falls
    B. If survival time with the disease increases.
    C. If recovery of the disease is faster.
    D. If the population in which the disease is measured increases.

4. The hallmark feature of an analytic epidemiologic study is:
    A. Use of an appropriate comparison group
    B. Laboratory confirmation of the diagnosis
    C. Publication in a peer-reviewed journal
    D. Statistical analysis using logistic regression

5. Which of the following statements about exposures is true ?
    A. 'Exposure' refers to contact with some factor that may be harmful or beneficial to health.
    B. An exposed individual has a greater risk of disease.
    C. Dietary intake is not an 'exposure' because individuals make a choice about what they eat.
    D. High body mass index is a risk factor for a range of health conditions, therefore, it cannot be treated as a single exposure.

6. A number of passengers on a cruise ship form Mombasa to the Panama Canal have recently developed a gastrointestinal illness compatible with norovirus (formerly called Norwalk-like virus). Testing for norovirus is not readily available in any nearby island, and the test take several days even where available. Assuming you are the epidemiologist called on to board the ship and investigate this possible outbreak, your case definition should include, at a minimum:
    A. Clinical criteria, plus specification of time, place and person
    B. Clinical features, plus the exposure(s) you most suspect
    C. Suspect cases
    D. The nationally agreed standard case definition for disease reporting

7. Epidemiological measures of effect assess the _____ between an exposure and an outcome.
    A. Strength of the causal mechanisms
    B. Strength of the reversibility
    C. Strength of the association
    D. Strength of a confounding factor

8. It is possible to reduce (though not eliminate) information bias in assessment of dietary intake by:
    A. Gathering information about many different aspects of people's dietary habits.
    B. Collecting data about dietary intake at the onset of a study, before people have experienced symptoms of disease.
    C. Collecting data on all possible confounders.
    D. Making sure that the study sample is representative of the population

9. For the cruise ship scenario described in the Question 6 above, how would you display the time course of the outbreak?
    A. Endemic curve
    B. Epidemic curve

C. Seasonal trend

D. Secular trend

10. In a cohort study; the risk ratio of developing diabetes was 0.86 when comparing consumers of tea (the exposed) to those who did not drink tea (the unexposed). Which one statement is correct?
   A. The tea drinkers have lower risk of developing diabetes
   B. The tea drinkers have higher risk of developing diabetes
   C. Based on the information given we cannot tell if the observed difference in disease risk is the result of chance.
   D. The risk ratio is close to the value one, so there is no difference in disease risk between the two groups.

11. Which of the following things cause malaria ?
   A. Mosquitoes
   B. Plasmodia
   C. Virus
   D. Bacteria

12. Comparing numbers and rates of illness in a community, rates are preferred for:
   A. Conducting surveillance for communicable diseases
   B. Deciding how many doses of immune globulin are needed
   C. Estimating subgroups at highest risk
   D. Telling physicians which strain of influenza is most prevalent

13. When epidemiologists judge the evidence to establish possible causes of a health outcome, they consider.
   A. The estimated strength of the association between an exposure and the outcome.
   B. Evidence that the exposure of interest has appeared before the outcome.
   C. Evidence showing that reductions in the exposure level will reverse the risk of the outcome.
   D. All of the options given

14. Randomized, controlled trials provide strong evidence that an observed effect is due to the intervention (the assigned exposure). One reason is because
   A. When the participants are randomized, many characteristics and possible confounding factors are likely to be evenly distributed in the groups.
   B. It is easier to measure the outcome variable with great precision in randomized, controlled trials compared to in other study designs.
   C. The exposure level and the outcome are measured at the same time.
   D. The study participants are volunteers and therefore motivated to take part in the study.

15. Most of the major health problems in the poorer nations are due to _____.
   A. Parasitic worms and microorganisms
   B. Psychological tension resulting from work
   C. Air pollution

D. Sedentary lifestyle

16. Disease that are always present in a community, usually at a low, more or less constant, frequency are classified as having an _____pattern.
   A. Epidemic
   B. Endemic
   C. Pandemic
   D. Genetic

17. When analyzing surveillance data by age, which of the following age groups is preferred ?
   A. 1-year age groups
   B. 5-year age groups
   C. 10-year age groups
   D. Depends on the disease

18. Diseases that are due mostly to environmental changes, increased population densities, and pollution that result from modernization in third world nations are referred to as:
   A. Disease of poverty
   B. Diseases of development
   C. Schistosomiasis
   D. Post-modern diseases

19. A cohort study differs from a case-control study in that:
   A. Subjects are enrolled or categorized on the basis of their exposure status in a cohort study but not in a case-control study.

   B. Subjects are asked about their exposure status in a cohort study but not in a case control study.
   C. Cohort studies require many years to conduct, but case-control studies do not
   D. Cohort studies are conducted to investigate chronic diseases, case-control studies are used for infectious disease

20. The epidemiologic triad of disease causation refers to:
   A. Agent, host, environment
   B. Time, place, person
   C. Source, mode of transmission, susceptible host
   D. John snow, Robert Koch, Kenneth Rothman

21. A propagated epidemic is usually the result of what type of exposure ?
   A. Point source
   B. Continuous common source
   C. Intermittent common source
   D. Person –to-person

22. All of the following are true of odds ration EXCEPT.
   A. It is an estimate of relative risk
   B. It is the ratio of incidence in exposed divided by incidence in
   C. It is the only measure of risk that can be obtained directly from a case-control study.
   D. It tends to be biased towards 1 (neither risk or protection at high rates of disease.

23. The mode of transport of an infectious agent through the environment to a susceptible host is called a:
   A. Carrier
   B. Reservoir
   C. Vector
   D. Vehicle

24. A Longitudinal or prospective study is also referred to as a (n)
   A. Ecological study
   B. Cross-sectional study
   C. Cohort study
   D. Observational study

25. Which of the following statements best describes the term " Prevalence rate"
   A. The number of patients who have the disease at a particular time, divided by the population at risk of having the disease at that time.
   B. The number of new cases of a disease in a population over a period of time.
   C. Not useful for developing HIV/AIDS control programme.
   D. Useful for developing Avian flu control programme.

26. Which type of study is described below, "An investigator takes a sample of healthy individuals, record their ongoing solar exposure and relate that to the subsequent occurrence of skin cancer in the same group."
   A. Case –control study
   B. Ecological study
   C. Cohort study
   D. Cross-sectional study

27. Which of the following is an advantage of a case-control study ?
   A. Multiple disease outcomes following a selected exposure can be readily studied
   B. Dependence on recall by subjects in the study minimized
   C. It is possible to determine the true incidence of the disease.
   D. It may be used to study etiology of a rare disease.

28. For a disease such as Corona virus, which is highly fatal and of short duration, which of the following statements is correct?
   A. Incidence rate and mortality rate will be similar
   B. Mortality rate will be much higher than incidence rate

C. Incidence rate will be much higher than mortality rate
D. Incidence rate will be unrelated to mortality rate

29. In Tharaka –Nithi County; that did not require varicella (chicken pox) vaccination, a boarding school experienced a prolonged outbreak of varicella among its students that began in September and continued through December. To calculate the probability or risk of illness among the students, which denominator would you use ?

   A. Number of susceptible students at the ending of the period (i.e, June)
   B. Number of susceptible students at the midpoint of the period (late October /early November)
   C. Number of susceptible students at the beginning of the period (i.e September)
   D. Average number of susceptible students during outbreak.

30. Which of the following statements is true ?
   A. Modern medicine has at times been responsible for causing health problems.
   B. Malnutrition has been essentially eliminated in the Kenyan republic.
   C. Persistent undernourishment among children rarely results in serious health problems.
   D. Epidemics are not very contagious.

SHORT ANSWER QUESTIONS.   [20 Marks]
1. Outline three characteristics that an exposure should have, in a retrospective-cohort studies in order to be considered a strong suspect.   [3 Marks]

2. Explain the difference between 'passive surveillance and active surveillance'
                                                                          [4 Marks]

3. Giving examples, briefly describe three levels of disease prevention.   [6 Marks]

4. Explain four types of validity in epidemiologic studies.   [4 Marks]

5. Briefly Discuss three measures of central tendency.   [3 Marks]

LONG ANSWER QUESTIONS.   [20 MARKS]

1.A. Define a disease outbreak and describe factors that are taken into account before deciding whether to go out into the field and investigate the outbreak.   [7 Marks]

B. Discuss the steps involved in investigating a disease outbreak.   [13 Marks]