CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

THIRD YEAR EXAMINATION FOR BACHELOR OF SCIENCE IN NURSING

NURS 373: COMMUNITY HEALTH NURSING III (EPIDEMIOLOGY AND DEMOGRAPHY)

STREAMS: BSC (NURS) Y3S2   **TIME: 2 HOURS**

DAY/DATE: WEDNESDAY 08/04/2020   **11.30 A.M – 1.30 P.M**

INSTRUCTIONS

- Do not write anything on the question paper.
- Mobile phones and any other reference materials are NOT allowed in the examination room.
- The paper has three sections. Answer ALL questions in Sections I and II and ONE question in section III.
- All your answers for Section I (MCQs) should be on one page.
- Number ALL your answers and indicate the order of appearance in the space provided in the cover page of the examination answer booklet.
- Write your answers legibly and use your time wisely

SECTION 1: MULTIPLE CHOICE QUESTIONS [20 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. 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.

3. Epidemiology includes all the following activities except_____

    A. Describing the demographic characteristics of persons with acute aflatoxin poisoning in District A

    B. Prescribing an antibiotic to treat a patient with community-acquired methicillin-resistant Staphylococcus aureus infection

    C. Comparing the family history, amount of exercise, and eating habits of those with and without newly diagnosed diabetes

    D. Recommending that a restaurant be closed after implicating it as the source of a hepatitis A outbreak

4. 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

5. In which one of the following circumstances will the **prevalence** of a disease in the population increase, all other factors 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.

6. A specific case definition is one that:

   A. Is likely to include only (or mostly) true cases
   B. Is considered "loose" or "broad"
   C. Will include more cases than a sensitive case definition
   D. May exclude mild cases

7. 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.

8. Rates would be a preferred measure for comparing illness in a community in one of the following:

   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

9. When analyzing surveillance data by age, which of the following age groups is preferred? (Choose one best answer)

   A. 1-year age groups
   B. 5-year age groups
   C. 10-year age groups
   D. Depends on the disease

10. A study in which children are randomly assigned to receive either a newly formulated vaccine or the currently available vaccine, and are followed to monitor for side effects and effectiveness of each vaccine, is an example of which type of study?

    A. Experimental
    B. Observational
    C. Cohort
    D. Case-control
    E. Clinical trial

11. The Kenyan Women's Health Study, in which researchers enrolled 41,837 women in 2016 and collected exposure and lifestyle information to assess the relationship between these factors and subsequent occurrence of cancer, is an example of _____ study?

   A. An experimental
   B. Observational
   C. Cohort
   D. Case-control
   E. Clinical trial

12. 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 diseases

13. A key feature of a cross-sectional study is that:

   A. It usually provides information on prevalence rather than incidence
   B. It is limited to health exposures and behaviors rather than health outcomes
   C. It is more useful for descriptive epidemiology than it is for analytic epidemiology
   D. It is synonymous with survey

14. The epidemiologic triad of disease causation refers to: (Choose one best answer)

   A. Agent, host, environment
   B. Time, place, person
   C. Source, mode of transmission, susceptible host
   D. John Snow, Robert Koch, Kenneth Rothman

15. For the following question, identify the appropriate letter from the time line in representing the natural history of disease using the figure below.

   Natural History of Disease Timeline
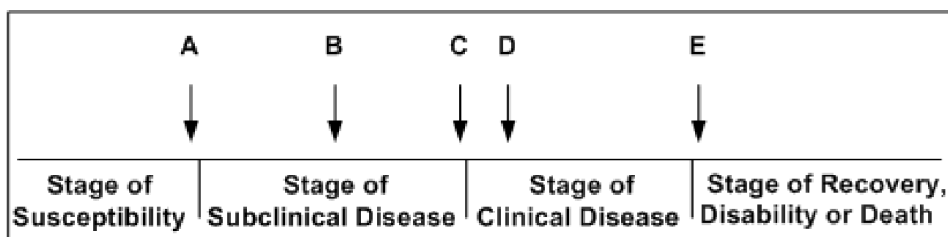
Which one of the labelled letters is correctly matched?

A. ____ Onset of symptoms
B. ____ Usual time of diagnosis
C. ____ Exposure
D. _____ can be controlled by Primary prevention

16. A reservoir of an infectious agent can be:

A. An asymptomatic human
B. A symptomatic human
C. An animal
D. The environment
E. All of the above

17. In Vector borne diseases, disease control measures are generally directed at **One** of the following?

A. Eliminating the reservoir
B. Eliminating the vector
C. Eliminating the host
D. Interrupting mode of transmission
E. Reducing host susceptibility

18. Which term best Matches the pattern of occurrence of the four diseases noted below in a single area?

A. Endemic
B. Outbreak
C. Pandemic
D. Sporadic

A. ____ Disease 1: usually 40–50 cases per week; last week, 48 cases
B. ____ Disease 2: fewer than 10 cases per year; last week, 1 case
C. ____ Disease 3: usually no more than 2–4 cases per week; last week, 13 cases
D. _____ Occurs world wide

19. Randomized, controlledtrials 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.

20. 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.

SECTION II: SHORT ANSWER QUESTIONS [30 MARKS]

1. Other than Incidence and prevalence, name any **four** measures of disease frequency   (**4 Marks)**
2. State *Four* differences between Prevalence rates and Incidence rates   (4 Marks)
3. In 2003, 84 out of 3000 men aged 40-44 years who smoked tobacco in one community in a Ugandan District developed Lung cancer; while 89 out of 5000 men aged 40-44 years non- smokers of tobacco also developed cancer. Construct a 2x2 table and determine:
    i.   Incidence in smokers
    ii.   Incidence in non-smokers
    iii. Relative risk   (8Marks)
4. State four uses of Demographic data   (4 Marks)
5. Distinguish between Cofounding errors and biases during an Epidemiological Study.   (4 Marks)
6. Explain *Three* Ethical issues that should be observed during community health assessment (6 Marks)

SECTION III: LONG ANSWER QUESTIONS [20 MARKS]

1. Discuss the main factors that affect the health of a population?   (20 Marks)

2. Outline the procedure of carrying out health assessment for a community   (20 Marks)