



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL SCIENCES

UNIVERSITY EXAMINATION FOR:

DMLS

APH 2304 : EPIDEMIOLOGY & DISEASE CONTROL

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2019

TIME: 2 HOURS

DATE: Pick Date Aug 2019

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.

SECTION A

1. Epidemiologists define disease occurrence in terms of:
 - a. Agent
 - b. Host
 - c. Environment
 - d. All of the above
2. Which of the following factors play a key role in likelihood of infectious disease acquisition?
 - a. Genetic profile
 - b. Human behavior
 - c. Environmental conditions
 - d. All of the above
3. Influenza is an example of a(n):
 - a. Agent that mutates frequently
 - b. Is a non-zoonotic disease
 - c. Resurgence of an endemic disease
 - d. All of the above
4. Tuberculosis and gonorrhea are examples of:
 - a. Sexually transmitted diseases
 - b. Being caused by agents that have not yet become drug-resistant
 - c. Are currently major health problems globally
 - d. Are viral infections

5. Virulence is the:
 - a. Ability to cause clinical disease
 - b. Ability to cause severe disease
 - c. The ability to evoke an immune response
 - d. a. and b. above
6. An infectious disease agent may cause:
 - a. No infection
 - b. Subclinical infection
 - c. Clinical infection
 - d. All of the above
7. Septicemia is:
 - a. Acute illness caused by agents circulating in the blood
 - b. Infection in a previously healthy person
 - c. Caused by secondary infection
 - d. An example of the carrier state
8. 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
9. A “fomite” is:
 - a. An agent conducting aerosol
 - b. A blanket, door handle or other inanimate article on the surface of which the agent resides
 - c. A vector between an arthropod and the susceptible host
 - d. An agent bearing substance that is eaten or drunk
10. The biggest single barrier to prevention of HIV/AIDS is:
 - a. The cost of treatment
 - b. Reluctance of some individuals to be treated
 - c. The high proportion of individuals globally who do not know that they are infected
 - d. The lack of a cure for HIV
11. Effective prevention strategies to reduce HIV transmission include:
 - a. Condoms
 - b. Successful treatment of HIV-infected individuals
 - c. Incarceration of sexually promiscuous individuals
 - d. a. and b. above
12. An effective surveillance system includes:
 - a. Ongoing collection of data
 - b. Timely analysis
 - c. Rapid dissemination of results
 - d. All of the above
13. Successful surveillance is facilitated by:
 - a. Keeping the questionnaire short and simple
 - b. Seeking the assistance of groups supportive of the target population
 - c. Not using invasive strategies for specimen collection
 - d. All of the above
14. Surveillance systems usually use which of the following study designs?
 - a. Cohort
 - b. Cross-sectional

- c. Serial cross-sectional
 - d. Case-control
15. A reduction in which of the following factors will reduce the rate of spread of an Epidemic?
- a. Transmission probability per contact
 - b. Contact rate
 - c. Duration of infectiousness
 - d. All of the above
16. As an epidemic spreads in a closed population, the number of susceptible will:
- a. Increase
 - b. Decrease
 - c. Stabilize
 - d. Optimal
17. In an epidemiological context, what is the population at risk?
- a. The proportion of a population that engage in risky behaviors.
 - 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
18. 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.
19. 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.
20. Epidemiological measures of effect assess the _____ between an exposure and an outcome.
- a. strength of the causal mechanism
 - b. strength of the reversibilities
 - c. strength of the association
 - d. strength of a confounding factor
21. 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.
22. 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.

23. When epidemiologists judge the evidence to establish possible causes of a health outcome, they consider
- The estimated strength of the association between an exposure and the outcome.
 - Evidence that the exposure of interest has appeared before the outcome.
 - Evidence showing that reductions in the exposure level will reverse the risk of the outcome.
 - All of the options given.
24. Confounding is a particular challenge in nutritional epidemiology because
- people change their diets over time.
 - it is difficult to measure people's diets accurately in large studies.
 - there are no good methods to adjust for confounding in nutritional studies.
 - different dietary components are correlated with each other, making it difficult to separate their effects.
25. In the definition of epidemiology, "distribution" refers to:
- Who
 - When
 - Where
 - Why
26. In the definition of epidemiology, "determinants" generally includes:
- Agents
 - Causes
 - Control measures
 - Risk factors
27. A cohort study differs from a case-control study in that:
- Subjects are enrolled or categorized on the basis of their exposure status in a cohort study but not in a case-control study
 - Subjects are asked about their exposure status in a cohort study but not in a case-control study
 - Cohort studies require many years to conduct, but case-control studies do not
 - Cohort studies are conducted to investigate chronic diseases, case-control studies are used for infectious diseases
28. A key feature of a cross-sectional study is that:
- It usually provides information on prevalence rather than incidence
 - It is limited to health exposures and behaviors rather than health outcomes
 - It is more useful for descriptive epidemiology than it is for analytic epidemiology
 - It is synonymous with survey
29. The epidemiologic triad of disease causation refers to: (Choose one best answer)
- Agent, host, environment
 - Time, place, person
 - Source, mode of transmission, susceptible host
 - John Snow, Robert Koch, Kenneth Rothman
30. A reservoir of an infectious agent can be:
- An asymptomatic human
 - A symptomatic human
 - An animal
 - The environment
31. Indirect transmission includes which of the following?
- Droplet spread

- b. Mosquito-borne
 - c. Foodborne
 - d. Doorknobs or toilet seats
32. Disease control measures are generally directed at which of the following?
- a. Eliminating the reservoir
 - b. Eliminating the vector
 - c. Eliminating the host
 - d. Interrupting mode of transmission
33. Which term best describes the pattern of occurrence of the three diseases noted below in a single area?
- a. Endemic
 - b. Outbreak
 - c. Pandemic
 - d. Sporadic
34. What is the difference between a communicable disease and a non-communicable disease?
- a. A communicable disease can be passed from person to person, a non-communicable disease cannot.
 - b. A communicable disease cannot be passed from person to person, while a non-communicable disease can be
 - c. Both types of disease can be passed from person to person, but communicable diseases require direct contact with bodily fluids.
 - d. There is no difference because both still result in disease
35. Which of the following is NOT a present threat to global health?
- a. Newly emerging infections
 - b. Better understanding of the causes of infection
 - c. Remerging infections
 - d. Antimicrobial resistance
36. Which of the following is NOT true regarding many communicable diseases?
- a. They are easily prevented
 - b. Vaccinations are readily available
 - c. They are easily eradicated
 - d. They are easily treated
37. Which of the following is NOT true regarding treatments for malaria and tuberculosis?
- a. Expensive
 - b. Effective
 - c. Safe
 - d. Inexpensive
38. Which of the following is NOT one of the leading causes of death from communicable diseases worldwide?
- a. Diarrheal diseases
 - b. AIDS
 - c. Malaria
 - d. Upper respiratory conditions
39. Which of the following is one of the most significant risk factors for cancer in general?
- a. Heroin
 - b. Alcohol
 - c. Opioid
 - d. Tobacco

40. Excessive alcohol use is NOT linked to which of the following cancers?

- a. Breast
- b. Liver
- c. Lung
- d. Colorectal

SECTION B

41. Discuss five sources of data in epidemiology (20mks)
42. Discuss the steps in Epidemic Investigation (20mks)
43. a) Discuss the major components of the definition of epidemiology (12mks)
- b) Outline the four stages in the natural history of a disease (8mks)