namibia university
OF SCIENCE AND TECHNOLOGY

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF HEALTH SCIENCES

QUALIFICATION: BACHELOR OF HEALTH INFORMATION SYSTEM MANAGEMENT; BACHELOR OF HUMAN NUTRITION AND ENVIROEMNTAL HEALTH SCIENCES	
QUALIFICATION CODE: 08BEHS/08BOHN/07BHIS	**LEVEL:** 6
COURSE: EPIDEMIOLOGY 2A	**COURSE CODE:** EPD 611S
DATE: JULY 2019	**PAPER:** THEORY
DURATION: 3 HOURS	**MARKS:** 100

SUPPLEMENTARY/SECOND OPPORTUNITY EXAMINATION-QUESTION PAPER	
EXAMINER:	MR ERWIN NAKAFINGO
MODERATOR:	MRS ROSWITHA MAHALIE

INSTRUCTIONS
1. Answer ALL the questions.
2. Write clearly and neatly.
3. Number the answers clearly.

PERMISSIBLE MATERIALS

SCIENTIFIC CALCULATOR

THIS QUESTION PAPER CONSISTS OF 8 PAGES (INCLUDING THIS FRONT PAGE)

SECTION A (25 MARKS)

QUESTION 1   [10 MARKS]

Evaluate the following statements and select the most appropriate answer or phrase from the given possibilities by writing the question number and the letter representing the answer, on your ANSWER BOOK. *Example: 1.11 C*

1.1.   The epidemiologic triad of disease causation refers to: [1]

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

1.2.   --------is the capability of an infectious agent to cause a disease in susceptible host.   [1]

      A. Infestation
      B. Pathogenicity
      C. Morbidity
      D. Virulence

1.3.   ----------compare groups and make inference about exposure outcome relationship.   [1]

      A. Descriptive epidemiology
      B. Ecological epidemiology
      C. Analytical epidemiology
      D. Statistical inference

1.4.   Which of the following is not an example of tertiary prevention?   [1]

      A. Screening and treatment for prostate cancer
      B. Speech therapy following a cerebrovascular accident
      C. Thrombolytic therapy following myocardial infarction
      D. Occupational therapy

1.5.   Modifiable risk factor associated with Non-Communicable Diseases (NCDs) Includes which of the following?   [1]

      A. Genetics
      B. Race
      C. Use of cigarettes
      D. Gender

1.4　-------measures the number of existing obesity cases in a population regardless of whether the onset was recent or in the distant past.　　　[1]

  A. Incidence rate
  B. Attack rate
  C. Attributable risk
  D. Prevalence rate

1.6.　A cryptosporidiosis, also known as crypto, is a parasitic disease caused by Cryptosporidum, a protozoan parasite in the phylum Apicomplexa. An outbreak of this illness began at a local swimming pool and then spread to individuals who had not visited the swimming pool. This can be classified as which type of outbreak?　[1]

  A. Mixed outbreak
  B. Point Source outbreak
  C. Propagated outbreak
  D. None of the above

1.7.　----------means stopping further progression of the disease in mankind.　　　[1]

  A. Eradication
  B. Elimination
  C. Controlling
  D. Fumigation

1.8.　All proportions are ratios, but not all ratios are proportions.　　　[1]

  A.　True
  B.　False

1.9.　Types of epidemiologic measures included counts and proportions and rates as well as case fatality rates and ratios among others. Using Table 1 below on Hypothetical data for unintentional Injuries, what is the sex ratio for total injuries?　[1]

Table 1: Hypothetical data for Unintentional Injuries

	Totals injuries	Fatal Injuries	Non- Fatal Injuries	Number in Population	Total Deaths from all causes
Men	73	3	70	2856	9
Women	41	2	39	2981	8

A. 1.98 to 2, Male to Female
B. 1.89 to 6 Male to Female
C. 1.78 to 1 Male to Female
D. 291.2 per 100,000

1.10. Who of the following pioneers of epidemiology developed a vaccine of anthrax? [1]

A. Edward Jenner
B. Robert Koch
C. Ignaz Semmelweis
D. Louis Pasteur

QUESTION 2 [10 MARKS]

Assess the following statements and decide whether they are True or False. Write only True or False next to the corresponding number *Example. 2.11. True*

2.1 The term "application" in the definition of epidemiology refers to the fact that information and evidence obtained through epidemiology is applied to better prevent and control health problems. [1]

2.2 The Hippocrates has been known as the Father of Medicine and the first Epidemiologist. [1]

2.3 The Y-axis of an epidemic curve represents the number of cases. [1]

2.4 Promotion of low salt intake is an example of primary prevention of hypertension. [1]

2.5 Gloves, aprons and masks are not types of personal Protective Equipment (PPE). [1]

2.6 Human papilloma virus can be associated with chronic diseases. [1]

2.7 Alcohol use/abuse is associated with Road Traffic Accidents but not with stroke. [1]

2.8 Interventions to prevent additional infections should be started as soon as a likely source is identified, even if laboratory results are not yet available. [1]

2.9 A disease that spreads through the bite of an insect is called a vehicle-borne disease. [1]

2.10 Common- source epidemics arise from infections transmitted from one infected person to another. [1]

QUESTION 3 [5 MARKS]

Match the statement in column 1 to the corresponding concept(s) in column 2.
Example: 3.6 A

	Column 1		Column 2
3.1	Ongoing, usual, or constant presence of a disease in a community.	A	Tertiary prevention
3.2	An infection occurring in a patient during the process of care in a hospital.	B	Pandemic disease
3.3	Smallpox was a global disaster of the 20th century that killed over 300 million people worldwide.	C	Nosocomial infection
3.4	Transmissible under natural conditions from vertebrate animals to humans.	D	Edward Jenner
3.5	Pancreatic organ transplantation to restore normoglycemia and to halt the progression of chronic complication.	E	Endemic disease
		F	Zoonosis
		H	John snow
		I	In-direct transmission
		J	Secondary prevention

SECTION B (35 MARKS)

QUESTION 4 [10 MARKS]

Define the following terms and concepts.

4.1   Epidemiology.   [2]

4.2   Herd immunity.   [2]

4.3   Eradication.   [2]

4.4   Reservoir.   [2]

4.5   Passive immunity.   [2]

QUESTION 5 [25 MARKS]

Read each question completely, and on your ANSWER SHEET, next to the question number, please write the full answer to the questions.

5.1   Enumerate any two examples of vector-borne transmission.   [2]

5.2   Explain any six factors which may account for an apparent increase in cases during routine disease surveillance.   [6]

5.3   Describe the five objectives of epidemiology.   [5]

5.4   Discuss in detail the core epidemiologic functions using the sub-headings below;

       5.4.1   Public health surveillance.   [2]

       5.4.2   Field investigation.   [2]

5.5 An outbreak of gastroenteritis occurred at a boarding school with a student enrolment of 846. Fifty-seven students reported symptoms including vomiting, diarrhoea, nausea, and low-grade fever between 10 p.m. on September 24 and 8 p.m. on September 25 the ill students lived in dormitories that housed 723 of the students. The table below provides information on the number of students per type of residence and the number reporting illnesses consistent with the described symptoms and onset time.

Table 2: Distribution of illness among students per type residence

Residence	Number of Students	Number of Cases
Boys dormitory (all boys)	380	40
Girls dormitory (all girls)	343	12
Day students (live at home)	123 (46 boys, 77 girls)	5 (3 boys, 2 girls)
Total	846	57

5.5.1 What is the proportion of total cases occurring in students who live in dormitories? [2]

5.5.2 Calculate the attack rates for boys and girls separately. [2]

5.6 As an epidemiologist, you are hired to lead an investigation of a possible outbreak of Influenza in Burkina Faso. Advise on the key criteria to consider when developing a Case definition for this outbreak investigation. [4]

SECTION C (40 MARKS)

QUESTION 6: [40 MARKS]

Read each question completely, and on your ANSWER SHEET, next to the question number, please write the full answer to the questions.

6.1 Discuss any three benefits of active surveillance over passive case finding for Malaria. [3]

6.2 Enumerate any five characteristics of Non-Communicable Diseases (NCDs). [5]

6.3 Using Rothmans's causal pie diagram, illustrate how a sufficient cause is different from a necessary cause sufficient. [4]

6.4 Elaborate on the administrative factors influencing the Hospital Associated Infection (HAI). [5]

6.5 Briefly explain the importance of investigating a disease outbreak. [5]

6.6   Discuss in detail the chain of infection.   [8]

6.7   Explain with clear examples how controlling and eliminating an agent at source of
       transmission could be achieved.   [10]

TOTAL: 100 MARKS