AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF COMMUNITY HEALTH
MASTERS IN SEXUAL & REPRODUCTIVE HEALTH RIGHTS & POLICY
END OF MAY-AUGUST 2024 SEMESTER EXAMINATIONS
MSRH

UNIT CODE: MSR 713

UNIT NAME: PRINCIPLES OF EPIDEMIOLOGY

DATE: THURSDAY 15TH AUGUST 2024
TIME: THREE HOURS
START: 5.00 PM   **STOP:** 8.00PM
INSTRUCTIONS

1. This exam is marked out of 60 marks
2. This Examination comprises TWO Sections
   Section A: Compulsory 15 Marks
   Section B: Answer THREE questions 45 Marks
3. This online exam shall take THREE Hours
4. Late submission of the answers will not be accepted
5. Ensure your web-camera is on at all times during the examination period
6. No movement is allowed during the examination
7. Idling of your machine for 5 min or more will lead to lock out from the exam
8. The Virtual Assessment System (VAS) has inbuilt integrity checks to detect cheating
9. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam
10. In case you have any questions call the Unit Lecturer Dr. Tom Marwa Tel. 0723800089 and or the Head of Department Dr. Faith Muhonja Tel 0723742370
11. For adverse incidences please write an email to: amiu.examinations@amref.ac.ke

SECTION A: COMPULSORY (15 MARKS)

1. List down five important steps in investigating a communicable disease outbreak

    (5 Marks)

2. Explain six characteristics of a good screening test (5 Marks)

3. To study the causes of an outbreak of aflatoxin poisoning in Africa, investigators conducted a case-control study with 40 case-patients and 80 controls. Among the 40 poisoning victims, 32 reported storing their maize inside rather than outside. Among the 80 controls, 20 stored their maize inside. Calculate odds ratio for the association between inside storage of maize and illness. (5 Marks)

SECTION B

ANSWER ANY THREE (3) QUESTIONS (45 Marks)

4.

   a) What are the necessary conditions for "confounding" in epidemiological studies?

    (5 Marks)

   b) Explain why a randomization process is important in clinical trials study design.

    (5 Marks)

   c) Explain Blinding/masking as used in clinical trials (5 Marks)

5. a). Define "Case Definition" as used in Outbreak Investigations (5 Marks)

   b). List and explain in detail strength and limitation with advantages and disadvantages of **two** main epidemiological study designs (5 marks)

   c). Give one advantage of using a whisker plot in epidemiological studies (2marks)

   d). Define randomization as used in clinical trials (3 marks)

6.

   a) Define Bias as used in Epidemiological studies (5 Marks)

   b) List two types of biases in research (2 marks)

   c) How do you minimize biases in a case control study? (3 Marks)

   d) List 2 Strengths and 2 Limitations of a cross sectional study design (5 Marks)

7. a). Using relevant examples distinguish between screening and diagnostic tests. 5 Marks

   b). In the examples of the sensitivity and specificity below

Calculate the following				
Sensitivity Specificity Calculate positive predictive value Define Predictive value as used in screening tests		Present	Absent	
	Positive	34		Total Positive results =49
	Negative		282	Total Negative results=292

Calculate the following

    i.   Sensitivity   (2.5 Marks)
    ii. Specificity   (2.5 marks)
    iii. Calculate positive predictive value   (2.5 Marks)
    iv. Define Predictive value as used in screening tests   (2.5 Marks)

10.

    a) During the previous year, nine residents of a community died from cervical cancer. List at least 5 reasons that might justify an outbreak investigation.   (5 Marks)

    b) Investigators conducted a case-control study of histoplasmosis among industrial plant workers in Nebraska. The following table shows the number of case-patients and controls who worked in Building X, near a recently excavated site.

	Cases	Controls	Total
Building X	15	8	23
Other Building	7	23	30
Total	22	31	53

    a) What is the appropriate measure of association?   (2Marks)
    b) Explain your answer above   (3 Marks)
    c) Calculate this measure.   (5 Marks)