AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF PUBLIC HEALTH
DEPARTMENT OF COMMUNITY HEALTH
HIGHER DIPLOMA IN COMMUNITY HEALTH PRACTICE
END OF SEMESTER EXAMINATION JAN/APRIL 2024

UNIT CODE: **HDCH 015:**

UNIT NAME: **BIOSTATISTICS**

Date: **11th April 2024**

Time: 2 hours **4.30 PM ------ 6.30 PM**

INSTRUCTIONS

1. This exam is marked out of 60 marks
2. This Examination comprises TWO Sections
   Section A: Compulsory Question (20 Marks)
   Section B: Long Answer Questions (40 Marks)
3. All questions in Section A are compulsory and Answer any TWO questions in Section B
4. This online exam shall take 2 Hours
5. Late submission of the answers will not be accepted
6. Ensure your web-camera is on at all times during the examination period
7. No movement is allowed during the examination
8. Idling of your machine for 5 min or more will lead to lock out from the exam
9. The Virtual Assessment System (VAS) has inbuilt integrity checks to detect cheating
10. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam
11. In case you have any questions call the Invigilator on Tel +254720573449
12. For adverse incidences please write an email to: amiu.examinations@amref.ac.ke

SECTION A: SHORT ANSWER QUESTIONS. ANSWER ALL QUESTIONS (20 Marks)

1. Define the following terms
   a. Statistical inference (1 Mark)
   b. Null Hypothesis (1 Marks)
   c. Alternative Hypothesis (1 Mark)
   d. Study Population (1 Mark)

2. Define the following Statistical terms (3 Marks)
   a. Confidence Interval (1 Mark)
   b. Confidence Level (1 Mark)
   c. Alpha Level (1 Mark)

3. State any four (4) sources of statistical data in your country (4 Marks)

4. State four Characteristics of the normal distribution: (4 Marks)

5. Define the following terms; for each case give a suitable example. (2 Marks)
   a) Type I Error (1 Marks)
   b) Type II Error (1 Marks)

6. State any three (03) reasons for studying statistics (3 Marks)

SECTION B: SHORT ANSWER QUESTIONS. ANSWER ANY TWO QUESTIONS (40 MARKS)

9. There are 08 steps in steps hypothesis testing, highlight these steps in a chronological order, briefly explaining each step. **(20 Marks)**

10. The mean lifetime of a sample of 100 fluorescent bulbs produced by a company is computed to be 1570 hours with a standard deviation of 120 hours. If μ is the mean life time of all bulbs produced by the company, test the hypothesis μ=1600 hrs against the alternative hypothesis μ is not 1600 hours. What is your conclusion on your test. (Note conclusion alone carries 05 Marks), the other calculations carry 15 Marks. . **(20 Marks)**

10. Odhiambo wants to find out if smoking is associated with lung cancer. He carried out a cross sectional study on 120 men from Kibera Slum. He summarized his data into the 2 by 2 table below. At a level of significance of 5%, help Odhiambo conclude whether smoking is associated with

lung cancer. **(20 Marks)**

	Has Lung Caner	Does not Have Lung Cancer	Totals
Smokers	37	13	50
Non Smokers	17	53	70
Totals	54	66	120