# MAASAI MARA UNIVERSITY

## REGULAR UNIVERSITY EXAMINATIONS
## 2023/2024 ACADEMIC YEAR
## SECOND YEAR SECOND SEMESTER

## SCHOOL OF NATURAL RESOURCES, ENVIRONMENTAL STUDIES AND AGRICULTURE
## DIPLOMA IN TOURISM AND WILDLIFE MANAGEMENT

## COURSE CODE: NDTW 133
## COURSE TITLE: BASIC STATISTICS AND RESEARCH METHODS

**DATE: 26/4/2024** **TIME: 1100-1300 HRS**

**INSTRUCTIONS TO CANDIDATES**

Answer **ALL** questions in section **A** and any other **TWO** in section **B.**

***This paper consists of 2 printed pages. Please turn over***

# SECTION **A**

**QUESTION ONE**

a. Differentiate between convenience sampling and snowball sampling (4 marks)

b. Give three assumption for applying t-test on independent means (3 marks)

c. State three methods of studying correlation (3 marks)

d. Give three functions of statistics (3 marks)

e. State three significance of correlation (3 marks)

f. Given the following information; n = 6, p = 0.3. Find $P(X > 3)$ (5 marks)

**g.** 10 bottles are to be selected from 50 bottles. Explain how this can be done using systematic sampling (4marks)

**h.** The data below shows the weight of cabbage harvested by farmers in Narok county. Use it to compute variance and standard deviation of the weight for the cabbage harvested in the county. (5marks)

| Weight of Cabbage | 1 - 3 | 3 – 5 | 5 – 7 | 7 – 9 | 9 - 11 | 11 - 13 |
|---|---|---|---|---|---|---|
| Frequency | 8 | 20 | 7 | 6 | 4 | 2 |

# SECTION **B**

**QUSETION TWO**

a. Differentiate between correlation and regression (4 marks)

b. The ages of husbands and wives were recorded as shown in the table below

| Age of husband | 23 | 27 | 28 | 28 | 28 | 30 | 30 | 33 | 35 | 38 |
|---|---|---|---|---|---|---|---|---|---|---|
| Age of wife | 18 | 20 | 22 | 27 | 21 | 29 | 27 | 29 | 28 | 29 |

Use the data to calculate Karl Pearson's coefficient of correlation and interpret it (10 marks)

c. Explain any three types of correlation (6 marks)

**QUESTION THREE**

a. With relevant examples where necessary, discuss two techniques that are involved in probability sampling ( 4 marks)

b. Give three characteristics of Poison distribution at a specified time or interval (3 marks)

c. State three assumptions for Binomial distribution ( 3marks)

d. Explain the following;

i. Mutually exclusive events and independent events. Give example in each case (4marks)

ii. Continuous variable and discrete variable (2 marks)

iii. Complimentary events and Elementary events (2 marks)

iv. Primary and secondary sources of data in statistics (2 marks)

**QUESTION FOUR**

a) Define a variable and state two major types of variables giving an example in each case (4marks)

b) Define tabulation and state the most commonly used method of tabulation in statistics (2mks)

c) Consider the data below, use it to construct a discrete frequency distribution.

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 24 | 20 | 23 | 20 | 25 | 22 | 20 | 20 | 22 |
| 25 | 23 | 20 | 23 | 25 | 24 | 22 | 25 | 23 |
| 25 | 21 | 23 | 24 | 22 | 21 | 23 | 21 | 21 |
| 23 | 20 | 24 | 24 | 23 | 24 | 20 | 25 | 25 |
| 20 | 23 | 21 | 20 | 20 | 20 | 22 | 22 | 22 |

Using the data determine the following; (14mks)

i. Mean

ii. Median

iii. Mode

iv. Variance and standard deviation

//END//