



MAASAI MARA UNIVERSITY

**REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR**

SECOND YEAR FIRST SEMESTER

**SCHOOL OF TOURISM AND NATURAL
RESOURCE MANAGEMENT**

**DIPLOMA IN TOURISM AND WILDLIFE
MANAGEMENT**

COURSE CODE: NDTW 133

**COURSE TITLE: BASIC STATISTICS AND RESEARCH
METHODS**

DATE: 15.4.2019

TIME:

INSTRUCTIONS TO CANDIDATES

1. Answer Question **ONE** and any other **THREE** questions

This paper consists of 6 printed pages. Please turn over.

SECTION A: ANSWER QUESTION ONE (25MKS)

Question One

- i) Define statistics. Statistics is subdivided into two major groups name and briefly explain them. **(5 Marks)**
- ii) The heights (in centimeters) and weight (in kilograms) of 10 basketball players on a team are:

Height (X)	186	189	190	192	193	193	198	201	203	205
Weight (Y)	85	85	86	90	87	91	93	103	100	101

Calculate:

- a) The regression line of y on x.

NB: Use the equations below to get the regression line.

$$\Sigma y = an + b\Sigma x$$

$$\Sigma xy = a\Sigma x + b\Sigma x^2$$

(12 Marks)

- b) The coefficient of correlation.

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{n \sum x^2 - (\sum x)^2} \times \sqrt{n \sum y^2 - (\sum y)^2}}$$

(4 Marks)

- c) The estimated weight of a player who measures 208 cm. **(4 Marks)**

SECTION B: ANSWER ANY THREE QUESTIONS (45 MKS)

Question Two

- a) Name and briefly explain the three methods of Measures of Central Tendency. **(3 Marks)**

- b) There are three different basketball teams and each has played five games. You have each team's score from each of its games below.

	Game 1	Game 2	Game 3	Game 4	Game 5
Jaguars	67	87	54	99	78
Wolves	85	90	44	88	55
Lions	32	101	65	88	55

- i) Suppose you want to join the best of the three basketball teams. Which one would you join? **(2 Marks)**
- ii) Get the median score of each team **(2 Marks)**
- c) The following table shows the number of hours per day of watching TV in a sample of 500 people:

Hours	0 – 1	2 – 3	4 – 5	6 – 7	8 – 9	10 – 11	12 - 13
Frequency	55	87	145	90	73	35	15

- i) What is the mean number of TV viewing hours in this group?
- ii) What length of time is most often spent in front of a TV for this group?
- iii) What is the median number of TV viewing hours?

(8 Marks)

Question Three

- a) Differentiate between Interquartile and Semi Interquartile range **(3 Marks)**
- b) Using the data below calculate the Quartile and Semi interquartile ranges **(8 Marks)**

Number of order	Frequency
10 - 12	4
13 - 15	12
16 -18	20
19 - 21	14

Calculate the variance and Standard Deviation.

(4 Marks)

Question Four

a) Define Normal Distribution

(2 Marks)

b) In a large- scale tree – felling operations, a machine cuts down trees, strips off the branches and then cuts the trunks into logs of length X metres for transporting to a sawmill. It may be assumed that values of X are normally distributed with mean μ and standard deviation 0.16, where μ can be set to a specific value.

a) Given that μ is set at 3.3, determine

i) $P(X < 3.5)$;

(4 Marks)

ii) $P(X > 3.0)$;

(4 Marks)

iii) $P(3.0 < X < 3.5)$ **(2 Marks)**

b) The sawmill now requires a batch of logs such that there is a probability of 0.025 that any given log will have a length less than 3.1 meters.

i) Determine to two decimal places the value of μ **(3 Marks)**

Question Five

a) Define Poisson distribution. **(2 Marks)**

b) For a certain type of computers, the length of time between charges of the battery is normally distributed with a mean of 50 hours and a standard deviation of 15 hours. John owns one of these computers and wants to know the probability that the length of time will be between 50 and 70 hours.

(4 Marks)

c) A test is conducted which is consisting of 20 MCQs (multiple choices questions) with every MCQ having its four options out of which only one is correct. Determine the probability that a person undertaking that test has answered exactly 5 questions wrong.

$$P_n(x) = C(n, x)p^xq^{n-x}$$
$$= \frac{n!}{x!(n-x)!}p^xq^{n-x}$$

(5 Marks)

d) A die marked A to E is rolled 50 times. Find the probability of getting a "D" exactly 5 times. **(4 Marks)**

