MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS
2018/2019 ACADEMIC YEAR

SECOND YEAR SEMESTER TWO

SCHOOL OF ARTS AND SOCIAL SCIENCES

BACHELOR OF ARTS IN POLITICAL SCIENCE AND PUBLIC ADMINISTRATION

COURSE CODE: PSA 2220

COURSE TITLE: SOCIAL STATISTICS IN POLITICAL SCIENCE AND PUBLIC ADMINISTRATION

DATE: 18TH APRIL, 2019 **TIME: 1430 - 1630 HRS**

INSTRUCTIONS

i. **Answer question ONE and any other THREE questions**

ii. **Do not write on the question paper**

iii. **Use illustration and diagrams where they serve to support the answers.**

This paper consists of 4 printed pages. Please turn over.

QUESTION ONE **(25 MARKS)**

a) Explain what is meant by the term:

i) Statistics **(3 marks)**

ii) Probability **(2 marks)**

b) Differentiate between each of the following

i) A parameter and a statistic **(4 marks)**

ii) Frequency distribution and probability distribution **(4 marks)**

iii) Mutually Exclusive Events and Collectively Exhaustive **(4 marks)**

iv) Discrete variable and continuous variable **(4 marks)**

v) Population and sample **(4 marks)**

QUESTION TWO **(15 MARKS)**

Given the salary scales in thousands of different categories of employees in an organization as below

Employees earnings	Frequency
10 up to 20	12
20 up to 30	25
30 up to 40	15
40 up to 50	18
50 up to 60	15
60 up to 70	8
70 and above	7

Required: determine;

a) Arithmetic mean **(4 marks)**

b) The median **(4 marks)**

c) The mode **(4 marks)**

d) The range **(3 marks)**

QUESTION THREE **(15 MARKS)**

The average weight of members of a Statistics class is 75 kg with a standard deviation of 5 kg. Determine the probability that a student picked at random will have a weight of:

i) Between 60kg and 72kg **($2_{1/2}$ marks)**

ii) Above 83kg **(2 marks)**

iii) Between 68kg and 78kg **($2_{1/2}$ marks)**

iv) Below74kg **(2 marks)**

Give the probability of A and B if given that the two are

i) Independent **($1_{1/2}$ marks)**

ii) dependent **($1_{1/2}$ marks**

Give the probability of A or B if given that the two are

i) Mutually exclusive **($1_{1/2}$ Marks)**

ii) Not mutually exclusive **($1_{1/2}$ Marks)**

QUESTION FOUR **(15 MARKS)**

a) Clearly explain the four levels of measurement as applied to the study of statistics **(6 marks)**

b) Outputs of fifty operators are given as per the table below

Output	Frequency
1100 to under 1200	5
1200 to under 1300	9
1300 to under 1400	14
1400 to under 1500	15
1500 to under 1600	7
TOTAL	50

From the table construct each of the following

i) Frequency polygon **(3 marks)**

ii) Histogram **(3 marks)**

iii) An ogive **(3 marks)**

QUESTION FIVE **(15 MARKS)**

Below is a data representing the daily temperatures of a given region in degrees Fahrenheit (F^0) over 2 months period

Daily Temp (F^0)	Frequency
30 – 35	5
35 – 40	6
40 – 45	9
45 – 50	15
50 – 55	10
55 – 60	11
6 0– 70	4
Total	60

Required, determine:

i) The variance **(4 marks)**

ii) The standard deviation **(1 marks)**

iii) The interquartile range **(4 marks)**

iv) Coefficient of variation **(2 marks)**

v) Karl Pearson's coefficient of Skewness **(4 marks)**

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