



MAASAI MARA UNIVERSITY

REGULAR UNIVERSITY EXAMINATIONS 2023/2024 ACADEMIC YEAR FOURTH YEAR FIRST SEMESTER

SCHOOL OF EDUCATION BACHELOR OF EDUCATION

COURSE CODE: PSY 4108-1

**COURSE TITLE: EDUCATION STATISTICS,
MEASUREMENT AND
EVALUATION**

DATE: 7/12/2023

TIME: 1430 - 1630 HRS

INSTRUCTIONS TO CANDIDATES

Question **ONE** is compulsory

Answer any other **TWO** questions

This paper consists of 3 printed pages. Please turn over

QUESTION ONE (COMPULSORY)

- a) Give **FIVE** reasons why a teacher need to have basic knowledge of statistics, evaluation and measurements **(5 marks)**
- b) The following scores were obtained from geography exams in a class of 50 students:

35	44	54	33	46	20	32	19	50	39
42	40	20	25	34	52	27	22	18	40
41	45	21	34	49	27	60	46	32	58
24	64	41	47	54	37	40	41	40	36
34	39	39	40	37	50	41	34	47	34

Using a class interval of 5 construct a grouped frequency distribution showing:

- i) Real class limits
ii) Mid points
iii) Tally
iv) Frequency
v) Cumulative frequency below
vi) Cumulative frequency above **(5marks)**
- c) Using the above grouped frequency distribution, calculate Mean, Mode, Median, Variance and Standard Deviation. **(8 marks)**
- d) Comment on the shape of the distribution. **(2 marks)**

QUESTION TWO

- a) Explain the following terms as used in education and measurement.
- i) Percentile
ii) Interval scale
iii) Diagnostic assessment
iv) Validity **(4 marks)**
- b) i) Give TWO characteristics of a Histogram **(2 marks)**
ii) The data below shows grouped frequency distribution of scores for students in a class:

<u>Scores</u>	<u>No of Students</u>
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20-29	7
30-39	21
40-49	19
50-59	6
60-69	3
70-79	1

Using this data, plot a histogram **(9 marks)**

QUESTION THREE

- a) Using illustrations, explain the differences between the following;
- Positive and negative skewness
 - Leptokurtic and platykurtic distribution **(5 marks)**
- b) The table below gives a summary of students' performance on a multiple choice item/question

	A	B	C*	D	E
Upper group (Ru)	0	0	20	0	0
Lower group (Rl)	4	2	8	3	3

C- was the correct answer*

- Calculate item difficulty index and item discrimination index for the item **(8 marks)**
- Comment on the quality of the item **(2 marks)**

QUESTION FOUR

- Explain TWO properties of a normal curve **(3 marks)**
- In an English test, the mean score was 48 and the standard deviation was 5 for a group of 100 form I(One) students.
 - Assuming a normal distribution, calculate the number of students who scored below 45 marks **(6 marks)**
 - If 50% of the students were to be selected using these scores, what will be the cut-off marks for them to be selected **(6 marks)**

QUESTION FIVE

- a) As a trained teacher, identify FOUR factors that you will consider when deciding on the choice of item format (or type) during test construction process **(4 marks)**
- b) The following scores were obtained when a group of ten (10) Form III students were tested in maths and business studies

Students	A	B	C	D	E	F	G	H	I	J
Maths	4	4	6	6	8	8	10	10	12	12
Business studies	4	5	5	6	6	7	7	8	8	9

- i) Compute Spearman Rank Order Correlation Coefficient for the two sets of scores **(10 marks)**
- ii) Interpret the correlation coefficient value obtained in (i) above and comment on the results **(1 mark)**

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