



COU4113 COUNSELLING STATISTICS

MAY SEMESTER 2023 END TERM EXAM ONLINE

DURATION: 3 HOURS

INSTRUCTIONS

- i) This exam is divided into two sections: Section A and B.
- ii) Each section carry equal marks.
- iii) answer ALL questions in section A and any 2 questions in section B.
- iv) Round off your answers to the nearest 1 Decimal Place for all questions involving fractions.
- v) Show all your workings on the Answer Sheet

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION

QUESTION 1:

- a) Outline two conditions which make the median a better measure of central tendency than the mean (2 marks)
- b) The following data relates to incidence rate of vicarious trauma among anti-riot police deployed to different riot hotspots in Kenya.

Number of hotspots	Vicarious Trauma Index
3	1 – 20
6	21- 40
10	41 – 60
15	61 – 80
9	81 – 100
4	101 – 120

Compute the mean Index (3 marks)

- c) Illustrate the difference between positive skewness and negative skewness. (2 marks)
- d) Outline three limitations of statistics. (3 marks)
- e) Distinguish between type I and type II errors in hypothesis testing. (2 marks)
- f) Explain three uses of correlation analysis. (3 marks)

SECTION B: ANSWER ANY TWO QUESTIONS IN THIS SECTION

QUESTION 2

A mob psychologist set out to establish whether crowd size increased the level of courage. She randomly recorded crowd size against their courage level as given below.

Crowd size	5	7	6	10	14	20
Courage level	1	3	4	3	7	8

- a) Compute the coefficient of skewness for crowd size (5 marks)
- b) Determine the correlation coefficient (5 marks)

QUESTION 3:

The following dataset relates to the number of suicides recorded in Nairobi in the last eleven days

(8, 4, 3, 3, 9, 6, 3, 5, 3, 2, 1)

- a) Determine the interquartile range. (6 marks)
- b) Calculate the coefficient of quartile deviation. (4 marks)

QUESTION 4:

A student of statistics recorded the number of hours it took a job candidate to undertake a psychometric test

(5, 6, 5, 2, 0, 3, 4, 8, 10)

Calculate

- (a) Range (2 marks)
- (b) Median score (3 marks)
- (c) Semi interquartile range (3 marks)
- (d) Absolute skewness (2 marks)

QUESTION 5:

The following data is a record of the number of clients who were seen by a therapist in a week

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Number of clients	7	4	3	2	5	8

- g) Work out the variance . (6 marks)
- h) Compute the Standard Deviation. (4 marks)