



MAASAI MARA UNIVERSITY
REGULAR UNIVERSITY EXAMINATIONS
2022/ 2023 ACADEMIC YEAR
FIRST YEAR FIRST SEMESTER

SCHOOL OF BUSINESS AND ECONOMICS.
BACHELOR OF SCIENCE IN ECONSTAT, FINANCIAL
ECONOMICS AND ECONOMICS.

COURSE CODE: ECO 1105-1

COURSE TITLE: ECONOMICS STATISTICS I.

DATE: 14TH DECEMBER, 2022

TIME: 1100-1300

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO questions

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

Question One

- a. Give three limitations of chain index method **(3 marks)**
- b. Give two differences between dispersion and skewness **(2 marks)**
- c. Three groups of economists contain respectively 3 women and 1 man, 2 women and 2 men, 1 woman and 3 men. One economist is selected at random from each group. Calculate the chance that the three selected consists of 1 woman and 2 men **(5 marks)**
- d. The following data are marks obtained in a class
Marks: 20, 12, 28, 50, 30, 15, 40
- i. Find the value of quartile deviation and its coefficient **(4 marks)**
- ii. Find the value of mean deviation and its coefficient **(4 marks)**
- e. The first four central moments of a distribution are 0, 16, -36 and 120. Comment on skewness and kurtosis of the distribution **(2 marks)**

Question Two

- a. In a certain town, male and female each form 50 percent of the population. It is known that 20 percent of the males and 5 percent of the female are unemployed. A research student studying the employment situation selects an unemployment person at random. Using Bayes' Theorem what is the probability that the person selected is (a) Male (b) Female?
(7 marks)
- b. In a process that manufactures aluminum cans, the probability that a can has a flaw on its side is 0.02, the probability that a can has a flaw on the top is 0.03, and the probability that a can has a flaw on both the side and the top is 0.01. What is the probability that a randomly chosen can has a flaw? What is the probability that it has no flaw? **(5 marks)**
- c. In economic statistics class, 52 students pursuing Economics had a CAT mean score of 38 and 47 students pursuing financial economics had a CAT mean score of 32. What was the mean for the two classes combined?
(3 marks)

Question Three

- a. The data below is for Narok town business center for the year 2020 and 2021.

Product	2020		2021	
	Price	Quantity	Price	Quantity
<i>Meat</i>	20	80	25	100
<i>Fish</i>	12	90	18	120
<i>Eggs</i>	5	150	10	180

Vegetable	13	70	17	130
Fruits	10	95	12	110

Calculate the index numbers for 2021 from the data taking 2020 as the base year using the formulas:

- i. Fisher's **(2 marks)**
 - ii. Laspeyre's **(2 marks)**
 - iii. Paasche's **(2 marks)**
 - iv. Marshall-Edgeworth **(2 marks)**
- b. Maasai Mara University has 200 lecturers. The administration wishes to determine the acceptability of subscribing to online teaching platform and decided to interview 50 lecturers. The administration asked you to guide them on how to pick the required sample size using;
- i. Simple random sampling **(2 marks)**
 - ii. Systematic sampling **(3 marks)**
 - iii. Can you advice the University to apply stratified sampling? Explain. **(2 marks)**

Question Four

- a. The data given below is collected from the economists in Narok county

Age	Frequency
25	2
26	8
27	18
28	27
29	25
30	16
31	7
32	2

Calculate the following:

- i. Mean by using the median value to the nearest whole number as the assumed mean **(4 marks)**
- ii. Geometric mean and compare it with mean in (i) **(2 marks)**
- iii. Standard deviation and comment on it **(3 marks)**
- iv. Kelly's coefficient of skewness based on deciles **(3 marks)**
- v. Karl Pearson's coefficient of skewness **(3 marks)**

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