



MAASAI MARA UNIVERSITY
REGULAR UNIVERSITY EXAMINATIONS
2021/ 2022 ACADEMIC YEAR

FIRST YEAR FIRST SEMESTER
SCHOOL OF BUSINESS AND ECONOMICS.
DEGREE IN ECONSTAT, FINANCIAL
ECONOMICS AND ECONOMICS.

COURSE CODE: ECO 1105-1

COURSE TITLE: ECONOMICS STATISTICS I.

DATE: 1st April, 2022

TIME: 1100-1300hrs

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. Differentiate between independent and dependent events (2 marks)
- c. Give two differences between dispersion and skewness (2 marks)
- d. A manager wants an estimate of sales of salesmen in his company. As a researcher, you are to pick a random sample of 50 out of 500 salesmen to participate in the study. If the salesmen are distributed by gender as 20 women and 480 men.
 - i. Which sampling procedure should you apply and why? (2 marks)
 - ii. How many female and male should you sample for the study? (2 marks)
- e. 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 (4 marks)
- f. There are 10 numbers; 0 through to 9, which are to be used in code group of four to identify an item of clothing in a boutique shop e.g. code 1083 is to identify blue blouse, code 1030 is identify a pair of socks and so on. How many codes can you generate if repetition of numbers is not permitted (3 marks)
- g. 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? (6 marks)
- b. A survey was conducted on the newspapers readership of three dailies: Nation Daily (D), the Standard (S) and the Kenya times (K) in the University and the following data was obtained. The number that read: D and K =19, S and D =17, S and K= 11, D, K and S =6 only, D = 65, S = 51, K= 47

Determine the number of people who read:

- i) Daily nation only (2 marks)
 - ii) The Kenya times only (2 marks)
 - iii) Standard or Kenya times but not Daily nation (2 marks)
- c. Under which conditions will a function P defined on S be called probability function if it associates a real number denoted by P(E) and called the probability of E for every event E defined on S be satisfied. (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
<i>Vegetable</i>	13	70	17	130
<i>Fruits</i>	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. Give any three advantages of weighted average of price relative indices over weighted aggregative indices (3 marks)
- c. Using 1989 as the base year, convert the following series into fixed based index numbers

Year	1989	1990	1991	1992	1993	1994	1995	1996
Consumption	3500	2800	3300	3700	4000	3800	4200	4500

(4 marks)

Question Four

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

Age	Frequency
25-30	2
30-35	8
35-40	18
40-45	27
45-50	25
50-55	16
55-60	7
60-65	2

Calculate the following:

- i. Arithmetic mean (2 marks)
- ii. Geometric mean (2 marks)
- iii. Harmonic mean (2 marks)
- iv. Standard deviation (3 marks)
- v. Kelly's coefficient of skewness based on deciles (3 marks)
- vi. Karl Pearson's coefficient of skewness (3 marks)