

LAIKIPIA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST SEMESTER 2025/2026 ACADEMIC YEAR

FIRST YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN ECONOMICS &
STATISTICS

ECON 113: ECONOMIC STATISTICS I

STREAM: *BSC (ECON STAT)*

TIME: 2 HRS

DAY: *TUESDAY [14.30 P.M-16.30 P.M]* **DATE:** *03/02/2026*

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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INSTRUCTIONS

- i. Answer question ONE and any other TWO
- ii. Question ONE (1) is compulsory and carries 30 marks
- iii. All other questions carry 20 marks each

QUESTION ONE (30 MARKS) (COMPULSORY)

- a) Distinguish between the following pair of terms as used in statistics:
 - i) Primary data and secondary data. **(2 marks)**
 - ii) Parameter and statistic. **(2 marks)**
 - iii) Population and sample. **(2 marks)**
- b) In the recent past, tyranny of numbers philosophy has dominated public discourse with its supporters opining that statistics do not lie. By citing the limitations of statistics, argue against the thesis that statistics do not lie. **(6 marks)**
- c) Discuss the characteristics of statistics. **(6 marks)**
- d) The following table represents the number of children per family in a rural village in country X.

No. of children	0	1	2	3	4	5	6
No. of families	1	5	11	27	10	4	2

Calculate:

- i) The mean number of children per family. **(4 marks)**
- ii) The variance. **(6 marks)**
- iii) The standard deviation. **(2 marks)**

QUESTION TWO (20 MARKS)**Country Q**

Income (US\$)	No. of income earners (thousands)	Total Income (Million US\$)
Over 5000	50	790
2000-5000	120	300
1000-2000	200	220
500-1000	180	100
200-500	250	60
100-200	200	30

Country R

Income (US\$)	No. of income earners (thousands)	Total Income (Million US\$)
Under 100	70	900
100-200	150	350
200-400	260	250
400-650	190	140
650-1000	280	100
Over 1000	200	50

- a) Draw Lorenz curves for distribution of incomes in country Q and R. **(18 marks)**
- b) Comment on the degree of variability in the sales of Yamaha motorbikes in the two cities. **(2 marks)**

QUESTION THREE (20 MARKS)

- a) Using examples, distinguish between mutually exclusive events and independent events. **(4 marks)**
- b) Suppose you have two boxes, M and N. Box M contains 3 white balls and 2 black balls while box N contains 2 white balls and 4 black balls. Two balls are randomly selected one at a time from either box M or N without replacement.
- Draw a tree diagram showing all the outcomes of the experiment. **(4 marks)**
 - Find the probability that the two balls are both white. **(3 marks)**
 - What is the probability that at least one of the balls is black? **(3 marks)**
- c) Two Kenya Medical Training Colleges post the following percentage performance in Clinical Medicine, Pharmacy and Nursing courses.

	College P	College Q
Clinical Medicine	65% (80 students)	70% (75 students)
Pharmacy	72% (40 students)	60% (50 students)
Nursing	75% (120 students)	80% (100 students)

Which college post better performance on average? **(6 marks)**

QUESTION FOUR (20 MARKS)

Commodity	Price for 2018	Quantity for 2018	Price for 2024	Quantity For 2024
V	6	50	10	55
W	2	100	2	120
X	4	60	6	60
Y	10	30	12	23
Z	8	50	12	35

Using the information in the above table, calculate the cost of living in 2024:

- a) Laspeyre's index number. **(5 marks)**
- b) Paasche's index number. **(5 marks)**
- c) Fisher's Ideal index number. **(5 marks)**
- d) Marshall-Edgeworth index number. **(5 mark)**

QUESTION FIVE (20 MARKS)

- a) The table below shows weekly earnings of 90 workers in a food processing firm.

Earnings in KSh per week	3001-3500	3501-4000	4001-4500	4501-5000	5001-5500	5501-6000	6001-6500	6501-7000	7001-7500	7501-8000	8001-8500
No. of workers	10	14	13	12	11	10	5	4	3	2	6

Calculate:

- i) The quartile deviation. **(13 marks)**
- ii) The coefficient of quartile deviation. **(3 marks)**
- b) State the demerits of quartile deviation as a measure of dispersion. **(4 marks)**