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**UNIVERSITY EXAMINATIONS
2022/2023 ACADEMIC YEAR**

**FIRST YEAR 2ND SEMESTER
SPECIAL/SUPPLEMENTARY EXAMINATIONS**

**FOR THE DEGREE OF BACHELOR OF SCIENCE AGRICULTURE
ECONOMICS AND RESOURCE MANAGEMENT**

COURSE CODE: AEC 125

COURSE TITLE: STATISTICS FOR ECONOMISTS

DATE: 10TH AUGUST 2023 **TIME:** 11 – 1 PM

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 3 printed pages. Please Turn Over



30 MARKS
(10 Marks)

QUESTION ONE

- (a) Define Statistics and Explain four of its main functions
- (b) Why would a statistician classify data and what guiding principles would they follow **(10 Marks)**
- (c) Two clothing factories manufacture the same type of overalls for export. Sometimes the overalls have defects that are categorized as either 0, 1, 2, or 3 manufacturing defects. The joint probability distribution for this is given below: **(10Marks)**

No of Defects	0	1	2	3
Manufacturer A	0.1250	0.0625	0.1875	0.1250
Manufacturer B	0.0625	0.0625	0.1250	0.2500

- (i) An overall is observed to have no defects. What is the conditional probability that it was produced by Manufacturer A?
- (ii) An overall is known to have been produced by Manufacturer A. What is the conditional probability that it has no defects?
- (iii) An overall is known to have two or more defects. What is the conditional probability that it was manufactured by A?
- (iv) An overall is known to have one or more defects. What is the conditional probability that it was manufactured by B?

20 MARKS
(10 Marks)

QUESTION TWO

- (a) What is Sampling Bias and in what ways is it introduced **(10Marks)**
- (b) Describe five statistical sampling methods **20 MARKS**

QUESTION THREE

Differentiate between the following terms

- (i) One tailed and two tailed test
- (ii) Census or sample methods
- (iii) Skewness and Kurtosis
- (iv) Observation and interview methods
- (v) Mutually exclusive events and collective exhaustive events

20 MARKS

QUESTION FOUR

- (a) In a random sample of 100 people taken from Mombasa; 60 are found to be consuming coffee. In another sample of 200 people taken from Nairobi, 100 people are found to be consuming coffee. Based on the habit of drinking coffee, test the hypothesis that there is a significant differences between the two towns? **(10 Marks)**
- (b) An Education officer in Busia County provided the following information on performance in KNEC technical exams by candidate in her County.
Out of the 1,100 male candidates 20 years old and over 200 passed and 900 failed. Of 3,500 male candidates below 20years of age, 500 passed and 3,000 failed. With regard to the female candidates, out of 500 below 20years of age, 100 passed and 400 failed. Of the 340 females 20 years old and over, 80 passed and 260 failed. Present the above information in a tabular form. **(5 Marks)**

- (c) Three groups of students contain 3 female and 1 Male; 2 female and 2 Male; and 1 female and 3 Male. The teacher selected one student at random from each group. What is the chance that the three selected will consist of 1 female and 2 male students? **(5 marks)**

QUESTION FIVE

20 MARKS

- (a) Describe five measures of central tendency and explain when each one is used **(10 Marks)**
- (b) Use the following data relating to the profits of 1000 companies to calculate the Karl Pearson's coefficient of skewness and comment on its value. **(10 Marks)**

Profits (sh,000)	100-120	120-140	140-160	160-180	180-200	200-220	220-240
No. of Companies	17	53	199	194	327	208	2