



*(Knowledge for Development)*

**KIBABII UNIVERSITY**

**UNIVERSITY EXAMINATION**

**2022/2023 ACADEMIC YEAR**

**SECOND YEAR SEMESTER ONE**

**MAIN EXAMINATION**

**FOR THE DEGREE OF**

**BACHELOR OF COMMERCE / BACHELOR OF BUSINESS  
MANAGEMENT AND BACHELOR OF COOPERATIVE AND  
ENTREPRENEURSHIP MANAGEMENT.**

**COURSE CODE: BCO 212/BBM 211/BCO 214**

**COURSE TITLE: BUSINESS STATISTICS**

**DATE: 21<sup>ST</sup> DECEMBER, 2022**

**TIME: 2.00PM – 4.00PM**

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**INSTRUCTIONS TO CANDIDATES**

1. Answer Question One in Section A and Any other TWO (2) Questions in Section B
2. Question **one** carries **30** marks and each of the other two questions carry **20** marks each.

**TIME: 2 Hours**

**KIBU observes ZERO tolerance to examination cheating**

**SECTION A**

**QUESTION ONE**

- a) Differentiate between the following pairs of terms as used in business statistics.
- i) Measures of central tendency and measures of dispersion. 4mks
  - ii) Skewness and kurtosis
- b) Highlight three disadvantages of the mode as a measure of central tendency. 3mks
- c) Determine the geometric mean for the following distribution.

x	135	231	352	430
f	2	3	4	3

4mks

- d) The arithmetic mean of the following frequency distribution was found to be 1.46.

Number of accidents	0	1	2	3	4	5	
Number of days(frequency)	46	x	y	25	10	5	Total=200 days

Calculate the values of x and y.

4mks

- e) Given below are the arithmetic mean, the median and the standard deviation of two distributions. Determine which distribution is more skewed.
- i) A.M = 22, Median = 24 standard deviation = 10
  - ii) A.M = 22, Median = 25 standard deviation = 12 4mks
- f) Outline three characteristics of a good average. 3mks
- g) Identify three uses of index numbers. 3mks
- h) Ten mechanics were asked to assemble a piece of machinery. The minutes they took to assemble it in the morning (x) and the minutes they took to assemble it in the afternoon (y) were obtained and the following quantities were computed.

$$\sum x = 142, \sum y = 166 \sum xy = 2434 \sum x^2 = 2085 \sum y^2 = 2897.$$

4mks

**SECTION B (ANSWER ANY TWO QUESTIONS)**

**QUESTION TWO**

- a) The table below shows prices and quantities of two commodities A and B where P and Q stand for price and quantity respectively and subscripts stand for time periods. Find the value of X if the ratio of Laspeyres price index to Paasches price index is 28:27 10mks

	P <sub>0</sub>	Q <sub>0</sub>	P <sub>1</sub>	Q <sub>1</sub>
A	1	10	2	5
B	1	5	X	2

- b) The following data gives the experience in years of machine operators and their performance ratings given by the number of good parts turned out per 100 pieces:

Operator	1	2	3	4	5	6	7	8
Experience(X)	16	12	18	4	3	10	5	12
Performance ratings(Y)	87	88	89	68	78	80	75	83

- i) Estimate the regression line of performance ratings on experience. 8mks  
 j) Estimate the probable performance if an operator has 7 years of experience. 2mks

**QUESTION THREE**

- a) Of a certain distribution, the Karl Pearson's coefficient of skewness is 0.32, the standard deviation is 6.5 and the mean is 29.6. determine the mode and the median of the distribution. 5mks  
 b) The following table relates to age of employees and the number of days they reported sick in a month. Calculate the Karl Pearson's coefficient of correlation and interpret it. 10mks

employees	1	2	3	4	5	6	7	8	9	10
Age(X)	30	32	35	40	48	50	52	55	57	61
Sick days(Y)	1	0	2	5	2	4	6	5	7	8

- c) Two judges X and Y in a beauty contest ranked the 12 entries as follows:

X	1	2	3	4	5	6	7	8	9	10	11	12
Y												

Y	12	9	6	10	3	5	4	7	8	2	11	1
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Compute the rank correlation coefficient and comment about it.

5mks

#### QUESTION FOUR

- (i) Discuss five limitations of statistics. 10mks
- (ii) The arithmetic mean and the standard deviation of a series of 20 items were calculated by a student as 20 and 5 respectively. But while calculating them, an item 13 was misread as 30. Find the correct standard deviation. 10mks

#### QUESTION FIVE

- a) Discuss five problems encountered in the construction of index numbers. 10mks
- b) The expenditure of 1000 families are given below:

Expenditure(ksh)	40-59	60-79	80-99	100-119	120-139
No of families	50	x	503	y	50

The mean and the median of the distribution are both ksh 87.50, calculate the values of x and y. 10mks