



(Knowledge for Development)

KIBABII UNIVERSITY
UNIVERSITY EXAMINATION
2021/2022 ACADEMIC YEAR
SECOND YEAR SEMESTER ONE
MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF COMMERCE

COURSE CODE: BCO 212

COURSE TITLE: BUSINESS STATISTICS

DATE: 24.5.2022 TIME: 2.00pm

INSTRUCTIONS TO CANDIDATES

Answer Question **One** and Any other **Two** Questions

TIME: 2 Hours

KIBU observes **ZERO** tolerance to examination cheating

This Paper Consists of 5 Printed Pages. Please Turn Over. 

SECTION A

QUESTION ONE

- a) Measures of central tendency and measures of dispersion represents statistical averages commonly used in decision making. Outline three characteristics of a good average. 3mks
- b) Identify three demerits of the median as a measure of dispersion. 3mks
- c) The mean weight of 150 students in a class is 60 kg. The mean weight of boys in the class is 70 kg and that of the girls is 55 kg. Find the number of boys and girls in the class. 4mks
- d) Highlight two differences between correlation and regression. 4mks
- e) Find the harmonic mean of the following sets of data. 3mks

Marks	0-10	10-20	20-30	30-40	40-50
Frequency	8	15	20	4	3

- f) From the following details, find the standard deviation of Y.
Pearson's correlation coefficient $(r) = 0.3$
Covariance $(X, Y) = 9$
Variance of $X = 16$ 4mks
- g) Identify three characteristics of index numbers. 3mks
- h) The standard deviation is the most commonly used measure of dispersion. Explain. 3mks
- i) Given the following data, calculate the Karl Pearson's coefficient of skewedness: sum of $X = 452$, sum of x squared $= 24,270$, mode $= 43.7$ and $N = 10$. 3mks

SECTION B (ANSWER ANY TWO QUESTIONS)

QUESTION TWO

- a) Discuss five challenges encountered during construction of index numbers. 10mks
- b) 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 Laspeyre price index to Paasche' price index is 28:27 10mks

	P_0	Q_0	P_1	Q_1
A	1	10	2	5
B	1	5	X	2

QUESTION THREE

- a) A national consumer protection society investigated seven brands of paint to determine their quality relative to price. The society's conclusions were ranked according to the following table.

Brand	T	U	V	W	X	Y	Z
Price per litre (X)	1.92	1.58	1.35	1.60	2.05	1.39	1.77
Quality ranking (Y)	2	6	7	4	3	5	1

Using spearman's rank correlation coefficient, determine whether the consumers generally get value for money. 10mks

- b) The median and mode of the following frequency distribution table are known to be 33.5 and 34 respectively. Find the values of X, Y and Z. 10mks

Marks	0-10	10-20	20-30	30-40	40-50	50-60-	60-70	Total
Frequency	4	16	X	Y	Z	6	4	230

QUESTION FOUR

- (a) The table below shows profit before taxation in pounds and turnover in pounds for a period of six years for Riziki business Enterprises Company.

Year	1977	1978	1979	1980	1981	1982
Turnover(pounds) (X)	106	125	147	167	187	220
Profit before taxation(pounds) (Y)	10	12	16	17	18	22

- (i) Plot a scatter diagram showing the relationship between profit before taxation and turnover and comment about it. 6mks
- (ii) Determine the least square regression line of profit before taxation on turn over. 10mks
- (iii) Estimate the profit before taxation when turnover was 300 in 1987. 4mks

QUESTION FIVE

- a) Calculate the Karl Pearson coefficient of skewedness from the following data using mean, median and standard deviation and comment about it.

10mks

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No of students	10	40	20	0	10	40	16	14

- b) Calculate coefficient of correlation from the following data and comment about it. 10mk

X	51	54	55	59	65	60	70
Y	38	44	33	36	33	23	10