

18



*(Knowledge for Development)*

**KIBABII UNIVERSITY**  
**UNIVERSITY EXAMINATION**  
**2020/2021 ACADEMIC YEAR**  
**FIRST YEAR SECOND SEMESTER**  
**MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF COMMERCE  
AND BACHELOR OF BUSINESS MANAGEMENT**

**COURSE CODE: BCO 214/BCO212**

**COURSE TITLE: BUSINESS STATISTICS**

**DATE: 30/09/2021 TIME: 11.00 A.M-1.00 P.M**

---

**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 3 Printed Pages. Please Turn Over.



**SECTION A**

**QUESTION ONE**

- a) Distinguish between the following pairs of terms as used in business statistics.
- (i) Measures of central tendency and measures of dispersion 4mks
  - (ii) Discrete data and continuous data 3mks
- b) Highlight three characteristics of a good average. 3mks
- c) The table below shows marks of students in a statistics exam. If the arithmetic mean of the distribution is 52, find the value of t. 4mks

Marks	0-20	20-40	40-60	60-80	80-100
Frequency	8	t	19	14	9

- d) State three disadvantages of the median as a measure of central tendency. 3mks
- e) 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
- f) The mean mark in statistics of 100 students in a class was 72. The mean mark for boys was 75 and the number of boys was 70. Determine the mean mark for girls in the class. 4mks
- g) Determine the standard deviation from the following sample of observations. 3mks
- 14, 18, 17, 16, 25, 31
- h) State three uses index numbers. 3mks
- i) Identify three main functions of statistics to a business enterprise. 3mks

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

**QUESTION TWO**

- a) Calculate the Karl Pearson's coefficient of correlation from the following set of data 10mks

X	10	12	15	23	20
Y	14	17	23	25	21

- b) An office contains 12 clerks. The long serving clerks feel that they should have a seniority increment based on length of service built into their salary structure. An assessment of their efficiency by their departmental manager and the personnel department produced a ranking based on efficiency and based on the length of service. Determine whether the data supports claims by the clerks for seniority increment using Spearman's rank correlation coefficient. 10mks

Ranking according to length of service	1	2	3	4	5	6	7	8	9	10	11	12
Ranking according to efficiency	2	3	5	1	9	10	11	12	8	7	6	4

### QUESTION THREE

- a) The following information was obtained from an NGO which was giving small loans to some small scale business enterprises in the year 2006. The loans are in the form of thousands of ksh.

Loans	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Units(f)	18	30	40	55	38	20	16

Determine the measure of skewness using the mean, median and standard deviation. 10mks

- b) After investigation, it was found that the demand for automobiles in a city depends entirely on the number of families residing in that city. Below are figures for sale of automobiles in the five cities for the year 2014 and the number of families residing in those cities.

CITY	Number of families(X)	Sale of automobiles"000" (Y)
A	70	25.2
B	75	28.6
C	80	30.2
D	60	22.3
E	90	35.4

Establish a regression equation of Y on X and estimate the sale for the year 2017 for city F which is estimated to have 100 families assuming that the same relationship holds true. 10mks

### QUESTION FOUR

- 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 Laspeyres price index to Paasches price index is 28:27 10mks

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

**END**  
**GOOD LUCK**