



PAN AFRICA CHRISTIAN UNIVERSITY

END OF SEMESTER EXAMINATION FOR THE DEGREE OF

JANUARY- APRIL 2023

CAMPUS: ROYSAMBU

DEPARTMENT: BUSINESS

COURSE CODE: DBM0126 | DSM203

COURSE TITLE: BUSINESS STATISTICS

EXAM DATE:

TIME:

INSTRUCTIONS

- This examination script consists of **six (6)** questions.
- Answer question **ONE** and ANY other **four** Questions.
- Read all questions carefully before attempting.
- Write your **student number** on the answer booklet provided.

Question One **(Compulsory= 10 marks)**

a. The distances travelled to work (in km) by 30 employees of a company are as follows:

9	2	15	5	8	10
10	20	5	15	9	8
10	15	5	10	8	1
10	10	9	12	7	10
11	10	20	25	10	7

Required:

- i. Find the arithmetic mean, median and mode. (6 marks)
- ii. Calculate the standard deviation. (4 marks)

Question Two **(10 marks)**

A company buys four types of raw materials. The prices (in £) and annual quantities used in the years 1999 and 2000 are given below:

Materials	1999		2000	
	Price	Quantity	Price	Quantity
A	50	90,000	90	80,000
B	60	10,000	50	20,000
C	60	1,000	50	2,000
D	50	25,000	60	20,000

- a) Calculate a (weighted) Laspeyres price index for 2000, using 1999 as the base year. (5 marks)
- b) Calculate a (weighted) Paasche price index for 2000, using 1999 as the base year. (5 marks)

QUESTION THREE **(10 Marks)**

- a) Distinguish between the following terms giving relevant examples:
 - i. Discrete and continuous data. (2 marks)
 - ii. The mean deviation and the standard deviation. (2 marks)
 - iii. The coefficient of variation and the coefficient of skewness. (2 marks)

- iv. Weighted and unweighted price index numbers. (2 marks)
- v. 'Price index' and a 'quantity index'. (5 marks)

QUESTION FOUR **(10 Marks)**

- a) Define a simple random sample. (2 marks)
- b) Explain how a simple random sample may be selected in practice. (3 marks)
- c) With reference to a questionnaire survey, distinguish between:
 - i. non-response bias (3 marks)
 - ii. sampling error. (2 marks)

QUESTION FIVE **(10 Marks)**

The following set of data represents the distribution of annual salaries of a random sample of 100 managers in a large multinational company:

Salary Range (£000)	Managers
20 but under 25	4
25 but under 30	8
30 but under 35	24
35 but under 40	40
40 but under 45	20
45 but under 50	4

- (a) Standard deviation for this distribution and comment on your results. (5 marks)
- (b) Calculate a measure of skewness and comment on the result. (5 marks)

QUESTION SIX **(10 Marks)**

The table below shows grouped distribution of the overdraft sizes of 400 bank customers.

Size in Kshs.	Number of customers
Less than 100	82
100 but less than 200	122
200 but less than 300	86
300 but less than 400	54
400 but less than 500	40
500 but less than 600	16

- a. Using the above table calculate the following:

- i. Quartile 1 (Q_1) (2 marks)
- ii. Quartile 3 (Q_3) (2 marks)
- iii. Fourth Decile (D_4) (2 marks)
- iv. Ninty fifth percentile (P_{95}) (2 marks)
- v. Quartile deviation (2 marks)