



PAN AFRICA CHRISTIAN UNIVERSITY

**END OF SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF COMMERCE
JANUARY- APRIL 2024**

CAMPUS: ROYSAMBU

DEPARTMENT: BUSINESS

COURSE CODE: BCM 108

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
marks)

(Compulsory= 10

a. Discuss the term business statistics using suitable example.

(2 marks)

- b. Using suitable examples, differentiate between:
- i. Descriptive statistics
 - ii. Inferential statistics (4 marks)
- c. Discuss **four** reasons a researcher may prefer to study a sample instead of the whole population. (4 marks)

Question Two

The following data relates to the daily bill on consumption of a certain commodity for 60 households

Daily bills (kshs)	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of households	6	7	11	10	6	5	9	3	3

Calculate:

- a. The mean (2 marks)
- b. The median (2 marks)
- c. Standard deviation (2 marks)
- d. Coefficient of skewness (2 marks)
- e. Comment on the coefficient of skewness (2 marks)

Question Three

- a) Define a simple random sample. (2 marks)
- b) Explain how a simple random sample may be selected in practice. (3 marks)
- c) Describe how you might test whether the responses to a questionnaire survey were unbiased. (5marks)

Question Four

The following table shows the average weekly earnings, weekly unemployment benefit and the retail price index (RPI) for a particular country for the period 2019-2022:

Year	Average weekly earnings (kshs)	Average unemployment benefit (kshs)	RPI (2019 = 100)
2019	400	52	100
2020	426	53	103
2021	455	55	106
2022	489	56	110

- a. Use the RPI to deflate the average weekly earnings and average unemployment benefit series (to convert them to real terms). (5 marks)
- b. Convert your 'real average weekly earnings' and 'real average unemployment benefit' figures to index numbers, using 2019 as the base year. (5 marks)

Question Five

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

Question Six

- a. A wallpaper manufacturer has developed a new range of wallpaper designs and has employed you to obtain consumers' opinions of the new patterns before deciding which ones to distribute for sale.
- (i) Explain how you would select a representative sample of consumers for the survey, bearing in mind that the funds available to cover the market research costs are limited. (5marks)
 - (ii) Describe how you would design the survey. (5marks)