



PAN AFRICA CHRISTIAN UNIVERSITY

BACHELORS OF COMMERCE

END OF TERM EXAMINATION

DEPARTMENT: BUSINESS

COURSE CODE: BCM108/BUS2243

COURSE TITLE: BUSINESS STATISTICS 1

ROYSAMBU CAMPUS

EXAM DATE: MONDAY

TIME: 11.00AM - 2:00PM

INSTRUCTIONS

- This examination script consists of **five (5)** questions.
- Answer question ONE and ANY other three Questions.
- Show all your workings
- Read all questions carefully before attempting.

Write your **student number** on the answer booklet provided.

QUESTION ONE

- a) Distinguish between the following terms:
- i) A bar graph and a histogram - Bar graphs compare distinct, categorical data using spaced bars, whereas histograms visualize the distribution of continuous numerical data using adjacent bars. Bar graphs are best for comparing counts across categories, while histograms illustrate data density, spread, and skewness over intervals.
 - ii) Skewedness and Kurtosis - **kewness** measures asymmetry (left/right tail direction) around the mean. **Kurtosis** measures the "tailedness" or peakedness of a distribution, indicating the presence of outliers. Skewness indicates symmetry (0), while kurtosis indicates heavy/light tails relative to a normal distribution
 - iii) A sample and a population- A population is the entire, comprehensive group you want to draw conclusions about, while a sample is a smaller, manageable subset of that population used to collect data and make inferences. Populations are described by parameters, whereas samples are described by statistics used to estimate those parameters
- b) Appropriate level of measurement for each of the following variables:
- i) Level of education - Ordinal
 - ii) Religion - nominal
 - iii) Production - ratio
 - iv) Weight - interval
- c) The observations below represent the net monthly salary (sh'000') of staff in a certain company.

Required:

- a) Frequency distribution table

X	38	48	52	56	58	60	63	66	68	73	82	88
F	1	2	3	1	9	2	2	4	13	3	9	1
CF	1	3	6	7	16	18	20	24	37	40	49	50

- b) Mode 68

QUESTION TWO

Type of data and the appropriate instrument for data for collecting the following variables

- a) Customer satisfaction – primary - questionnaire
- b) Students' performance – secondary – a check list
- c) Acidity of the soil – primary– experiment
- d) Traffic movement on the road – primary - observation

- e) Cultural beliefs of a given tribe – primary - participation

QUESTION THREE

- a) Frequency distribution table

Class	20 - 24	25-29	30 -34	35-39	40-44	45-49
Class limit	19.5 -24.5	24.5-29.5	29.5-34.5	34.5-39.5	39.5-44.5	44.5-49.5
Mid-point (X)	22	27	32	37	42	47
F	5	15	4	15	10	1
CF	5	20	24	39	49	50

- b) Median class = $50/2 = 25$, i.e where 25th item lies. 35 – 39

$$\text{Median} = [35 + (25-24)/15]*4 = 35.2$$

QUESTION FOUR

Salary	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
Class limit	10-20	20-30	30-40	40-50	50-60
Mid-point (X)	15	25	35	45	55
Frequency (F)	2	11	15	9	6
CF	2	13	28	37	43
FX	30	275	525	405	330
Arithmetic mean	$1565/43=36.4$				
Std Dev	$(15-36.4)^2$	$(25-36.4)^2$	$(35-36.4)^2$	$(45-36.4)^2$	$(55-36.4)^2$
	457.96	129.96	1.96	73.96	345.96
	$\sqrt{1009.8} = 31.78$				