GWANDA STATE UNIVERSITY

Excellence through Esprit De Corps

FACULTY OF BUSINESS SCIENCES AND MANAGEMENT

DEPARTMENT OF ACCOUNTING

BACHELOR OF COMMERCE HONOURS DEGREE IN ACCOUNTING

PART I FIRST SEMESTER EXAMINATION

QUANTITATIVE ANALYSIS FOR BUSINESS 1 [BAC1102]

MAY 2023

DURATION: 3 HOURS

INSTRUCTIONS

1. Answer **ALL** QUESTIONS
2. Begin each question on a new page.
3. Please indicate the study format (Conventional/Block/Parallel) on the cover of your answer script.

INFORMATION

1. Marks per question are as indicated.
2. Questions may be attempted in any order.

MATERIALS SUPPLIED

1. **Statistical booklet**
2. **Graph paper**
3. **Formula booklet**

This paper consists of seven printed pages including the cover page

SECTION A

1. The following are practical reasons why managers in general should develop an appreciation of statistical methods and thinking except? **[2 marks]**

a) Recognizing situations where statistics can be applied to enhance a decision process

b) Performing simple statistical analyses in practice (using *Excel*, for example) to extract additional information from business data

c) Interpreting and performing statistical analysis on management reports expressed in non-numerical terms

d) Critically assess the validity of statistical findings before using them in decision making

2) Business statistics is the science of good decision making in the face of uncertainty. Which one of the following refers to a branch of statistics

[2 marks]

a) Inferential statistics

b) Quantitative statics

c) Qualitative statistics

d) Discrete data

3) Which one of the following is not an important concept in statistics **[2 marks]**

a) random variable and its data

b) sampling unit

c) Net Present Value

d) population parameters

4) Which one of the following statements are true **[2 marks]**

i)	Population is a totality of items or things under consideration.

ii)	A parameter is a summary measure that is computed to forecast the characteristics of the sample.
iii)	Sampling can be classified as either non-probability sampling or probability sampling.

a) i and ii

b) i and iii

c) ii only

d) ii and iii

5) Which one of the following combinations is incorrect

[2 marks]

	Term	**Description**
i)	Sampling unit	the object being measured, counted or observed
ii)	Random variable	attribute of interest on which data is collected
iii)	Sample statistic	Measure that describes a characteristic of a sample.

a) i and ii

b) ii and iii

c) i and iii

d) ii only

6) There are basically four approaches to gathering data for statistical analysis. The following are methods of data collections except?

[2 marks]

a) Sampling

b) Survey

c) Interviews

d) Observation

7) Which of the following is not one of the central location measure used by managers? **[2 marks]**

a) Arithmetic mean

b) Second quartile

c) Modal value

d) Sample statistic

8) Line graphs show the behaviour of a variable overtime. All of the following are random variables which are commonly plotted over time except. **[2 marks]**

a) company turnover on a monthly basis

b) student numbers on an annual basis

c) share price of an equity on a daily basis

d) beliefs and perceptions of customers about company's product

9) Which of the following is not useful in determining the best central location measure **[2 marks]**

i)	Outlier effect
ii)	Cumulative frequency distribution
iii)	Data type
iv)	Representativeness of the data values

a) iii and iv

b) ii only

c) ii and iii

d) i and iv

10) The following data shows the ages of members of a swimming club at Gwanda State University.

26	7	24	29	10	9	5	33
17	23	17	26	15	12	12	24
10	17	23	18	16	26	23	12
18	17	10	22	16	26	15	

What is the mean age of the members? **[2 marks]**

a) 18

b) 25

c) 17

d) 16

11) The following data shows the distribution of ages of members of GSU Soccer club

Ages	**Frequency(fi)**
5-10	3
10-15	5
15-20	9
20-25	7
25-30	6

Making use of the formula below, what is the mean for grouped ages?

Formula: $\bar{x} = 1/n\ \Sigma fi\ xi$ **[2 marks]**

a) 6

b) 30

c) 18.83

d) 17.90

12) The following are three common shapes of a unimodal histogram except? **[2 marks]**

a) symmetrical shapes

b) positively skewed shapes

c) negatively skewed shapes

d) U shapes

13) Pearson's coefficient of skewness (Skp) measures skewness in a sample of numeric data. Which of the following statements is incorrect regarding interpretation of skewness? **[2 marks]**

a) If Skp > 0, the histogram is negatively skewed

b) If Skp = 0, the histogram is symmetrical.

c) If Skp > 0, the histogram is positively skewed.

d) If Skp < 0, the histogram is negatively skewed.

14) The table below shows Financial Advisors' Training Study. The number of seminar training days attended last year by 20 financial advisors is shown in the Table. What is the average number of training days attended by these financial advisors?

[2 marks]

16	20	13	19	24	22	18	18	15	20
21	21	18	20	18	20	15	20	18	20

a) 376

b) 20

c) 19.5

d) 18.8

15) The table below shows data set of electricity consumption per household in Bulawayo. Find the **RANGE** of the electricity consumption across households in Bulawayo.

[2 marks]

Daily household electricity consumption (KW)

58	50	33	51	38	43	60	55	46	43
51	47	40	37	43	48	61	55	44	35

a) 29kw

b) 47kw

c) 61kw

d) 65kw

TOTAL [30 marks]

SECTION B

Question 1

A market research company conducted a survey amongst grocery shoppers to identify their demographic profile and shopping patterns. A random sample of 30 grocery shoppers was asked to complete a questionnaire that identified:

The response data to each question is summarized in percentage frequency table below.

Preferred store	Count	Percentage
1 = Checkers	10	33.3%
2 = Pick n Pay	17	56.7%
3 = Spar	3	10%
Total	30	100%

i) Show the findings graphically as a bar chart **[5 marks]**

ii) Show the findings graphically as a pie chart **[5 marks]**

[Total: 10 marks]

Question 2

A survey of a random sample of 68 human resource (HR) managers asked them to identify the performance appraisal system their company uses. The options were:

1 = a trait method

2 = a behavioural method

3 = a results method.

The survey found that only 15% used the trait method, 39% used the behavioural method and 46% used the results method. The study aims to describe the profile of performance appraisal systems used by all JSE companies.

(a) Define the random variable of interest. **(2 marks)**

(b) What is the population of interest? **(2 marks)**

(c) What is the sample? **(2 marks)**

(d) What is the sampling unit in this scenario? **(2 marks)**

(e) Is the '46% who use the results method' a parameter or a statistic? **(2 marks)**

(f) Why is it important that the sample of 68 HR managers be randomly selected? **(3 marks)**

(g) State and explain four basic approaches to gathering data for statistical analysis **(12 marks)**

[Total: 25 marks]

Question 3

a) The daily electricity consumption in kilowatt hours (kWh) by a sample of 20 households in Filabusi is recorded in Table below.

Daily household electricity consumption (kWh)

58	50	33	51	38	43	60	55	46	43
51	47	40	37	43	48	61	55	44	35

i) Find the lower quartile value of daily household electricity consumption. **(4 marks)**

ii) Find the upper quartile value of daily household electricity consumption. **(4 marks)**

iii) Using the data set of electricity consumption per household above. Find the range of the electricity consumption across households in Filabusi. **(3 marks)**

iv) Find the standard deviation of the electricity consumption for the sample of households in Filabusi. **(6 marks)**

b) The setting time for ceramic tile glue is an important quality feature of the product. A manufacturer of ceramic tile glue tested a sample of nine batches from a large consignment and recorded the setting times (in minutes) of each batch:

27	22	31	18	20	25	21	28	24

i) Find the mean and standard deviation of setting times of the ceramic tile glue **(7 marks)**

ii) How consistent are the setting times across the different batches? Compute the coefficient of variation as a consistency index measure. **(5 marks)**

(c) If the consistency index must be less than 10% for the consignment to be passed by the quality controller, will this consignment be approved for dispatch? Explain your answer. **(6 marks)**

[Total: 35 marks]

THE END OF EXAMINATION QUESTION PAPER