NURTURING INNOVATORS

RIARA SCHOOL OF BUSINESS

JANUARY – APRIL 2025 TRIMESTER

EXAMINATION FOR CERTIFICATE IN BUSINESS ADMINISTRATION

DAY PROGRAMME

RCM 007: DESCRIPTIVE BUSINESS STATISTICS

APRIL 2025 **TIME: 2 HOURS**

GENERAL INSTRUCTIONS:

Students are NOT permitted to write on the examination paper during reading time.

This is a closed book examination. Text book/Reference books/notes are not permitted.

SPECIAL INSTRUCTIONS:

1. Write your REGISTRATION NO. Clearly on the answer booklet(s).
2. Answer Question One and ANY other TWO questions.
3. Questions in all sections should be answered in answer booklet(s).
4. Marks allocated to each question are shown at the end of the question.
5. PLEASE start the answer to EACH question on a NEW PAGE.
6. For the questions, write the number of the question on the answer booklet(s) in the order you answered them.
7. Write your answers in paragraph form unless stated otherwise.
8. Keep your phone(s) SWITCHED OFF at the front of the examination room.
9. Keep ALL bags and caps at the front of the examination room and do not refer to any unauthorized material before or during the course of the examination.
10. You are only allowed to leave the examination room 30minutes to the end of the Examination.

QUESTION ONE – COMPULSORY (30 MARKS)

a) Which of the following is NOT a measure of central tendency? **(2 Marks)**

a) Mean

b) Median

c) Standard Deviation

d) Mode

b) What distinguishes ordinal data from nominal data? **(2 Marks)**

a) It uses categories without a meaningful order

b) It has a meaningful order but no equal intervals

c) It has equal intervals but no true zero

d) It includes a true zero-point

c) Which of the following is an example of nominal data? **(2 Marks)**

a) Height of students

b) Gender (Male/Female)

c) Temperature in Celsius

d) Exam scores

d) The median is the: **(2 Marks)**

a) The most frequently occurring value in the dataset

b) Average of all values

c) Middle value when data is arranged in ascending order

d) Difference between highest and lowest values

e) A histogram is used to represent: **(2 Marks)**

a) Qualitative data

b) Quantitative data

c) Both qualitative and quantitative data

d) None of the above

f) Outline FOUR business applications of descriptive statistics. **(4 Marks)**

g) Explain the difference between descriptive and inferential statistics. **(4 Marks)**

h) Define the FOUR levels of measurement and provide an example for each. **(8 Marks)**

i) A researcher records the eye colors of 100 students. What level of measurement does this represent? Explain your answer. **(4 Marks)**

QUESTION TWO

a) The following table shows the amount, in inches, of annual rainfall in a sample of towns.

Rainfall (inches)	**Frequency**	**Relative Frequency**	**Cumulative Relative Frequency**
2.95 – 4.97	6		
4.97 – 6.99	7		
6.99 – 9.01	15		
9.01 – 11.03	8		
11.03 – 13.05	9		
13.05 – 15.07	5		

i). Draw the table and populate it with both relative frequencies and cumulative frequencies. **(6 Marks)**

ii). Find the percentage of rainfall that is less than 9.01 inches. **(2 Marks)**

iii). Find the percentage of rainfall that is between 6.99 and 13.05 inches. **(2 Marks)**

iv). Calculate the fraction of towns surveyed that get between 11.03 and 13.05 inches of rainfall each year. **(2 Marks)**

b) Discuss the importance of understanding levels of measurement when designing a research study. Provide examples of how incorrect classification can affect data analysis. **(8 Marks)**

QUESTION THREE

a) The following data represents distances (in kilometers) from home to local supermarkets. Create a stem plot using the data: **(6 Marks)**

1.1; 1.5; 2.3; 2.5; 2.7; 3.2; 3.3; 3.3; 3.5; 3.8;

4.0; 4.2; 4.5; 4.5; 4.7; 4.8; 5.5; 5.6; 6.5; 6.7; 12.3

b) Distinguish between a Bar graph and a Pareto graph. **(4 Marks)**

c) A study is done to determine the average tuition that Riara University undergraduate students pay per semester. Each student in the following samples is asked how much tuition he or she paid for the previous semester. What is the type of sampling in each case? **(10 Marks)**

i). A sample of 100 undergraduate students is taken by organizing the students' names by classification (1st Year, 2nd Year, 3rd Year, or 4th Year), and then selecting 25 students from each.

ii). A random number generator is used to select a student from the alphabetical listing of all undergraduate students in the previous semester. Starting with that student, every 50th student is chosen until 75 students are included in the sample.

iii). A completely random method is used to select 75 students. Each undergraduate student in the previous semester has the same probability of being chosen at any stage of the sampling process.

iv). The 1st Year, 2nd Year, 3rd Year, and 4th Years are numbered one, two, three, and four, respectively. A random number generator is used to pick two of the years. All students in those two years are in the sample.

v). An administrative assistant is asked to stand in front of the library one Wednesday and to ask the first 100 undergraduate students he encounters what they paid for tuition the previous semester. Those 100 students are the sample.

QUESTION FOUR

a) Find the mean for the following frequency distribution. **(10 Marks)**

Class	**Frequency**
20 – 40	9
40 - 60	11
60 - 80	14
80 - 100	6
100 - 120	8
120 - 140	15
140 - 160	12
Total	**75**

b) Find the median of the following data, which gives the marks, out of 15, obtained by 35 students in a mathematics test. **(4 Marks)**

Marks Obtained	3	5	6	11	15	14	13	7	12	10
Number of Students	4	6	5	7	1	3	2	3	3	1

c) In a batch of 400 students, the height of students is given in the following table. Represent it through a frequency polygon. **(6 Marks)**

Height (in cm)	**Number of Students (Frequency)**
140 – 150	74
150 – 160	163
160 – 170	135
170 – 180	28
Total	**400**

END OF EXAM