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Faculty of Information Technology

Department: ALL

MID-TERM EXAM: October 2025, Semester one)

Course Code and Name: STAT 8122, Descriptive Statistics

Instructor: Pascal Hategekimana, Dr Hategekimana Fidele
Time: 9am
Group: H, L and K

Exam Duration: 2.5hours
Date: 23/10/2025
Total max: 30

Instructions:

- *This exam consists of one section with three questions.*
- *Attempt ALL three questions, and each is equivalent to 10 marks.*
- *Do not write any answers on this question paper*
- *The use of Mobile phones and programmable calculators is strictly prohibited*

Question One

i. Give the difference between Inferential statistics and Descriptive statistics with one (1) typical example for each. **[2 marks]**

ii. Provide the difference between Quantitative and qualitative Variables: Give also two examples for each ***[4 marks]***

iii. During a survey conducted in two classes at AUCA- Gishushu campus, an arithmetic mean of marks of 65 was observed in a class of 75, while 85 was seen in a class of 55 students. Determine the arithmetic mean from these two classes. **[4 marks]**

Question Two

The following data show the distances (in miles) from the homes of off-campus statistics students to the college.

0.5; 0.7; 1.1; 1.2; 1.2; 1.3; 1.3; 1.5; 1.5; 1.7; 1.7; 1.8; 1.9; 2.0; 2.2; 2.5; 2.6; 2.8; 2.8; 2.8; 3.5; 3.8; 4.4; 4.8; 4.9; 5.2; 5.5; 5.7; 5.8; 8.0

i. Generate the stem-and-leaf plot corresponding to the above scores for the midterm exam of descriptive statistics. **[2.5 marks]**

ii. Construct its corresponding frequency distribution table. **[2.5 marks].**

iii. Determine also the arithmetic mean of these results. **[2.5 marks]**

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iV. In a survey, adults were asked whether they personally worried about a variety of environmental concerns. The numbers (out of 1012 surveyed) who indicated that they worried "a great deal" about some selected concerns are summarized below. Display the data using a bar chart. **[2.5 marks]**

Environmental Issue	Frequency
Pollution of drinking water	597
Contamination of soil and water by toxic waste	526
Air pollution	455
Global warming	354

Question Three

Refer to the table below of the given distribution. Construct a

(i) frequency polygon, **[2.5 marks]**
(ii) histogram, and **[2.5 marks]**
(iii) Cumulative frequency (ogives). **[2.5 marks]**
(iv) Find the median (Q2) and the third (Q3) percentiles. **[2.5 marks]**

Class Interval	Frequency	CF
25-29	1	1
30-34	6	7
35-39	5	12
40-44	8	20
45-49	15	35
50-54	15	50
55-59	14	64
60-64	13	77
65-69	14	91
70-74	3	92
75-79	1	93

$\frac{N-45}{2}$

Good luck