UGANDA MARTYRS UNIVERSITY

UNIVERSITY EXAMINATIONS

FACULTY OF EDUCATION

DEPARTMENT OF ECONOMICS

YEAR ONE SEMESTER ONE 2023/2024

TEST

COURSE CODE : STA 1101

COURSE UNIT : INTRODUCTION TO STATISTICS FOR ECONOMICS

PROGRAM : BACHELOR OF ARTS WITH EDUCATION

DURATION: 1 HOUR

Instructions:

1. This TEST consists of **TWO** questions.
2. Attempt any **ONE** question. Each question caries 25 marks.
3. Do not write anything on the questions paper.

QUESTION ONE

(a) Using relevant examples, differentiate between correlation analysis and regression analysis. **(4 marks)**

(b) A company wants to know if there is a significant relationship between its advertising expenditures and its sales volume. A lag time of one month will be used because sales are expected to lag behind actual advertising expenditures. Data was collected for a six month period and is shown the following table. All figures are in thousands of dollars.

ADVERTISING EXPENDITURE	SALES VOLUME
4.2	27.1
6.1	30.4
3.9	25.0
5.7	29.7
7.3	40.1
5.9	28.8

(i) Identify the dependent and independent variables. **(2 marks)**

(ii) Plot the scatter diagram. **(6 marks)**

(iii) Draw the line of best fit. **(2 marks)**

(iv) Comment on your graph. **(1 mark)**

(v) Determine the spearman's rank correlation coefficient correlation between advertising expenditure and sales volume. **(8 marks)**

(vi) Comment on your answer. **(2 marks)**

QUESTION TWO

(a) What is meant by measures of dispersion as used in statistics? **(1 mark)**

(b) Name any three measures of dispersion. **(3 marks)**

(c) The production of each manufacturing department in a company is monitored weekly to establish productivity bonuses to be paid to the departmental members of staff. 350 items have to be produced each week before a bonus is paid. The production in one department over a 40 week period is shown below

493	478	475	476	482	481	483	518	466	458
460	460	471	468	473	475	516	488	476	472
491	493	495	497	499	513	517	548	567	570
577	560	565	571	568	533	540	546	520	465

(i) Construct a frequency distribution table using a class width of 20 starting with a class of 450-469; **(10 marks)**

(ii) Find the mean number of items produced **(2 marks)**

(iii) Find the median number of items **(4 marks)**

(iv) Plot the histogram and use it to find the modal number of items produced. **(5 marks)**

END