CHUKA UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE AND BACHELOR OF PURCHASING AND LOGISTICS MANAGEMENT

BCOM 262: BUSINESS STATISTICS

STREAMS: BCOM, BPLM **TIME: 2 HOURS**

DAY/DATE: THURSDAY 09/08/2018 **8.30 AM – 10.30 AM**

INSTRUCTIONS:

- **Answer Question One and any other Two**
- **Clearly show all your workings**
- **Mathematical tables are provided**

QUESTION ONE

(a) Discuss relevance of statistics in a business. [5 marks]

(b) After sales promotion about a certain product, the following data presents the consumption pattern in a week.

Packets of units consumed	No of families
11 – 20	3
21 – 30	5
31 – 40	8
41 – 50	11
51 – 60	10
61 – 70	7
71 – 80	4
81 – 90	2

Required:

(i) Prepare a histogram and frequency polygon to show the family consumption of the product. [8 marks]

(ii) Calculate the

(i) Median [2 marks]
(ii) Mode [2 marks]
(iii) Mean [2 marks]

(c) Explain 3 types of correlation [3 marks]

(d) The following data relates to the number of days it takes for a tender evaluated in a certain pharmaceutical firm. 30, 30, 31, 32, 35, 34
You are required to prepare a stem leaf diagram to represent the data. [6 marks]

(e) Explain two assumptions of regression analysis. [2 marks]

QUESTION TWO

(a) Discuss differences between regression analysis and correlation analysis. [4 marks]

(b) Fit a straight line trend by method of least squares to the following data about production of coffee in tones in a certain coffee factory.

Year	2010	2011	2012	2013	2014	2015	2016
Prod (Tonnes)	12	10	14	11	13	15	16

Required:

(i) Calculate the trend values and estimate the likely production for the year 2022. [10 marks]

(ii) Interpret the values of your coefficients in the model generated in (i) above. [2 marks]

(c) Explain the relevance of forecasting in business. [4 marks]

QUESTION THREE

(a) Explain four importance of index numbers in a business. [4 marks]

(b) Ranks of two artists in a musical contest by judges are as given below. The two numbers in brackets denote the ranks of the same artists A and B respectively.

(1,10) (2,7) (3,2) (4,6) (5,4) (6,8) (7,3) (8,1) (9,11) (10,15) (11,9) (11,5) (13,14) (14,12) (15,13)

Required:

(i) Find the rank correlation coefficient [8 marks]

(ii) Interprete the results [3 marks]

(c) Explain five properties of normal distribution [5 marks]

QUESTION FOUR

(a) A company gives on the job training of its sales men and women which are followed by a test. It is considering whether it should terminate the services of any sales person who does not do well in the test. The following data gives the test scores by nine officers during the last one year

Test scores	14	19	24	21	26	22	15	20	19
Sales ksh (000)	31	36	48	37	50	45	33	41	39

Required:

Compute the coefficient of correlation between test scores and sales made by the sales officers. [6 marks]

(b) You are given the following data about prices of various commodities in Chuka Town for the year 2016 and 2017

	Price	Quantity	Price	Quantity
Eggs	2	8	4	6
Hot Dog	5	10	6	5
Onions	4	14	5	10
Tomatoes	2	19	2	13

Required:

Construct index numbers using and interpret results in each case.

(i) Laspeyres method [2 marks]

(ii) Paasche's method [2 marks]

(iii) Fisher's method [2 marks]

(c) A human resource management department of a certain institution has devised a test for job applicants to predict their production rating. A sample of 10 applicants is selected and given a test and late assigned production rating. Their results were as follows:

Worker	1	2	3	4	5	6	7	8	9	10
Test score	53	36	88	84	86	64	45	48	39	69
Production rating	45	43	89	79	84	66	49	48	43	76

Required:

Fit a linear least square regression equation for prediction of rating score. Interpret your results. [7 marks]
