

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE
OF BACHELOR OF COMMERCE

BCOM 262: BUSINESS STATISTICS

STREAMS: BCOM - ODEL

TIME: 2 HOURS

DAY/DATE: FRIDAY 07/12/2018

8.30 A.M. – 10.30 A.M.

INSTRUCTIONS:

- Answer question ONE and any other TWO questions
- Do not write anything on the question paper
- Clearly show all your workings

QUESTION ONE

- (a) Explain FIVE uses of statistics in a business [5 marks]
- (b) Giving examples, explain two sources of data [2 marks]
- (c) You have conducted a market survey with a sample size of 50 regarding the acceptability of new product which your company has launched. The scores of the respondents on the appropriate scale are as follows:

40	45	41	45	45	30	39	8	48	25
26	9	23	24	26	29	8	40	41	42
39	35	18	25	35	40	42	43	44	36
27	32	28	27	25	26	38	47	36	35
32	28	40	41	43	44	45	40	39	41

Required:

- (i) Prepare a frequency table [6 marks]
- (ii) Present the same information as a histogram [8 marks]

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- (c) The following distribution gives the pattern of overtime work one per week by 100 employees of a certain company

Overtime hours	10-15	15-20	20-25	25-30	30-35	35-40
No. of employees	11	20	35	20	8	6

Calculate:

- (i) Median [3 marks]
- (ii) First quartile (Q1) [3 marks]
- (iii) 7th Decile [3 marks]

QUESTIO TWO

- (a) Explain FIVE functions of index numbers in an economy [5 marks]
- (b) For the following data, calculate index numbers of 2018 with 2017 as the base year using
 - (i) Paasche method
 - (ii) Laspeyer’s method [3 marks]
 - (iii) Fisher’s ideal method [3 marks]

	2017		2018	
	Price	Quantity	Price	quantity
A	20	8	40	6
B	50	10	60	5
C	40	15	50	15
D	20	20	20	25

- (c) Explain three types of correlation [6 marks]

QUESTION THREE

- (a) Explain 3 differences between correlation and regression analysis [6 marks]
- (b) After investigation it has been found that the demand for automobiles in a city depends mainly if not entirely upon the number of families residing in that city. Below are given figure for the sales of automobiles in the five cities for the year 2018, and the number of families residing in those cities

City	No. of families	Sale of automobile in ‘000’
1	70	25.2

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2	75	28.6
3	80	30.2
4	60	22.3
5	90	35.4

Required:

- (i) Fit a linear regression equation by the least square method [8 marks]
- (ii) Estimate the sales for the year 2019 for city 1 which is estimated to have 100 families assuming the same relationship holds time [2 marks]
- (c) The following data relates to the number of days it takes for an evaluation processing tendering to be completed in a certain firm 30, 30, 31, 32, 35, 24.

Required: prepare a stem leaf diagram to explain the distribution [4 marks]

QUESTION FOUR

- (a) Explain four assumptions of linear bivariate models [4 marks]
- (b) You are given the following information concerning a certain business operating in Chuka town for the period between 2010 and 2017

Year	2010	2011	2012	2013	2014	2015	2016	2017
Sales (ksh '000')	76	80	130	144	138	120	174	190

Required:

- (i) Fit a trend line by method of least squares [8 marks]
- (ii) What will be the predicted sales for 2018 assuming the same rate of change continues [2 marks]
- (c) The following data gives the age and blood pressure of 10 women in ABC meridian hospital

Age	56	42	36	47	49	42	60	70	65	58
Blood pressure	147	125	118	128	145	140	165	160	150	153

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Required: Find the correlation coefficient between age and blood pressure. Explain the meaning of your results [6 marks]

