CHUKA   **UNIVERSITY**

UNIVERSITY EXAMINATIONS

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

BCOM 262: BUSINESS STATISTICS

STREAMS: BCOM   **TIME: 2 HOURS**

DAY/DATE: THURSDAY 05/12/2019   **2.30 P.M. – 4.30 P.M.**

INSTRUCTIONS:
- **Answer question ONE and any other TWO questions**
- **Do not write anything on the question paper**
- **Referent tables are provided**

QUESTION ONE

(a)   Explain six uses of statistics in business   [6 marks]

(b)   You have conducted a market survey with a sample of 50 regarding acceptability of a new product your company has launched. The scores of the respondents on appropriate scale are as follows:

40	45	41	45	45	30	39	8	48	25
26	9	23	24	25	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   [6 marks]

(c)   Explain four assumptions of linear bivariate models   [4 marks]

(d)   The following data relates to the patterns of overtime work per week by 100 employees of a textile firm in Embu County.

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

Required:

(i)   Mean   [2 marks]

(ii)   Median   [2 marks]

(iii)   Mode   [2 marks]

(iv) Q_2 [2 marks]

QUESTION TWO

(a)   You are given information concerning a certain firm operating in Embu town for a period between 2011 and 2018

Year	2011	2012	2013	2014	2015	2016	2017	2018
Sales (ksh '000')	76	80	130	144	138	120	174	190

Required:

(i)   Fit a trend line by method of least squares   [7 marks]

(ii)   Interpret your model   [2 marks]

(iii)   Predict sales for 2019 assuming the same rate of change prevails   [2 marks]

(b)   Discuss various trends time series data may contain   [9 marks]

QUESTION THREE

(a)   The following data relates to age and blood pressure of 10 men tested in Chuka General Hospital

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

Required:

(i)   Determine the relationship between age and blood pressure from the above information   [8 marks]

(ii)   Interpret your results in (i) above   [2 marks]

(b) Discuss differences between correlation and regression analysis [3 marks]

(c) Discuss factors a researcher should consider when developing a questionnaire as a tool of data collection [7 marks]

QUESTION FOUR

(a) Discuss role of index numbers in an economy [6 marks]

(b) The following data relates to the number of days it takes for an evaluation process in tendering process to be completed in a certain firm: 30, 30, 31, 32, 35, 34

Required:

Prepare a stem lead diagram to explain the distribution [4 marks]

(c) The following data relates to price and quantity of a certain commodity lies in a certain market

Commodity	2018		2019	
	Price	Quantity	Price	Quantity
Apple	20	8	40	6
Bananas	50	10	60	5
Carrots	40	15	50	15
Dannies	20	20	20	25

Required: using the above information calculate and interpret your results

(i) Paasche's Index [2.5 marks]

(ii) Laspeyre's Index [2.5 marks]

(iii) Fisher's Index [2.5 marks]

(iv) Barley Index [2.5 marks]