CHUKA   **UNIVERSITY**

RESIT/SPECIAL EXAMINATION

SECOND YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF COMMERCE/ BACHELOR OD PROCUREMENT AND LOGISTICS MANAGEMENT/ BACHELOR OF COOPERATIVE MANAGEMENT/ BACHELOR OF ENTREPRENEURSHIP AND SMALL BUSINESS MANAGEMENT

BCOM 262: BUSINESS STATISTICS I

STREAMS: BCOM Y2S1   **TIME: 2 HOURS**

DAY/DATE: MONDAY 01/11/2021   **2.30 P.M – 4.30 P.M**

 INSTRUCTIONS:
Answer Question ONE and Other TWO Questions

Question One (30 Marks)

(a)   Highlight four areas in management where statistics is useful. $[6\,marks]$

(b)   Explain the following statistical concepts
   (i) Descriptive and inferential statistics   (4 marks)
   (ii) A parameter and a statistic   (4 marks)

(c) The price and demand of a soft drink has been documented as follows:

Number of bottles X	12	11	4	6	11	4	4	10
Price (Ksh.000) Y	2	3	5	4	2	6	1	3

   i.   Calculate the Pearson's correlation coefficient and interpret your result.   (4 marks)
   ii. Determine the regression equation and use it to find the forecast number of bottles at a price of Ksh. 9,000.   (4 marks)

(d)   The following table gives the distribution of companies according to size of capital.

Capital (Ksh. billions)	0-5	5-10	10-15	15-20	20-25	25-30
Number of companies	20	7	2	9	10	5

Required:
  i.   Calculate the mean size of the companies   (4 marks)
  ii. Calculate the Mode   (4 marks)

QUESTION TWO   (20 Marks)

a.   Explain the following data sources giving suitable examples
  i)   Primary   (4 marks)
  ii)   Secondary   (4 marks)

b.   Consider the comparative data on household commodity prices in 2011 and 2012.

	2011		2012	
Commodity	Price	Quantity	Price	Quantity
A	2	8	4	6
B	5	10	6	5
C	4	14	5	10
D	2	19	2	13

From the above data, construct and interpret the following index numbers taking 2011 as the base period

  (i) Laspeyres' price index $[4\,marks]$
  (ii) Paasche's price index $[4\,marks]$

c.   Explain the usefulness of index numbers to a country   (4 marks)

QUESTION THREE (20 Marks)

a.   What is meant by fixed base index? $[2\,marks]$

b.   Explain briefly the components of time series data   [8 marks]

c.   The following information relate to quarterly profit (sh. Million) earned by firms in Growth Enterprise Market Segment of the NSE.

Year	Q1	Q2	Q3	Q4
2009	33	36	35	38
2010	42	40	42	47
2011	54	53	54	62
2012	70	67	70	77

Required:
 (i)   Represent the data in the table using a multiple bar diagram   [4 marks]
 (ii) Calculate the Centered four quarterly moving averages   (6 marks)

QUESTION FOUR (20 Marks)

(a) State four properties of a normal distribution   (4 marks)

(b) For a large population of normally distributed account balances, the mean balance is Kshs. 15000 with standard deviation of Kshs 3500. What is the probability that a randomly sampled account has a balance that:

(i) Exceeds Kshs. 16000   (4 marks)

(ii) Lies between Kshs.13000 and Kshs.20000   (4 marks)

(c) The following table shows the pattern of overtime hours per week done by 115 employees of a company.

Overtime hours	10-14	15-19	20-24	25-29	30-34	35-39
Number of employees	2	6	14	21	33	39

Required:
 (i)   Calculate the standard deviation   (5 marks)

 (ii) Calculate the 70th percentile and interpret your result   (3 marks)