



**The Co-operative University College of Kenya**  
(A Constituent College of Jomo Kenyatta University of Agriculture & Technology)

**END OF SEMESTER EXAMINATION - APRIL 2015**

**EXAMINATION FOR THE DEGREE OF BACHELOR OF CO-OPERATIVE  
BUSINESS/ BACHELOR OF COMMERCE (YR I SEM II)**

**UNIT CODE: HBC 2110/HCOB 2114**

**UNIT TITLE: BUSINESS STATISTICS I/INTRODUCTION TO BUSINESS  
STATISTICS**

**DATE:**

**TIME:**

**INSTRUCTIONS:**

Answer question **ONE (compulsory)** and any other **TWO** questions.

**QUESTION ONE**

- (a) Using illustration distinguish between
- Sampling and census (3 marks)
  - Fixed base and chain relatives (3 marks)
- (b) The average daily sales of 500 branch offices was \$150 thousand and standard deviation \$ 15 thousand. Assuming the distribution to be normal, indicate how many branches have sales \$ 140 thousands and \$ 165 thousand (8 marks)
- (c) Using illustrations distinguish between symmetrical and asymmetrical distribution (4 marks)
- (d) Using the data below, compute quartile deviation (6 marks)
- |    |    |
|----|----|
| X  | f  |
| 10 | 2  |
| 12 | 8  |
| 13 | 17 |
| 14 | 5  |
| 16 | 1  |
| 19 | 1  |
- (e) The figures below show the number of goods with defect. Compute the standard deviation 3, 5, 10, 12, 14, 16 (6 marks)

**QUESTION TWO**

- (a) The value of the orders received for two separate companies over one financial year are given below. Compare the two distribution using frequency polygon and comment on the result (14 marks)

Value of orders (\$)	Percentage of orders	
	Company A	Company B
100 and over 200	7	1
200 and over 300	13	4

300 and over 400	35	10
400 and over 500	19	16
500 and over 600	16	27
600 and over 700	10	21
700 and over 800	-	11
800 and over 900	-	7
900 and over 1000	-	3

(b) Highlight the SIX main steps of hypothesis testing (6 marks)

### QUESTION THREE

(a) Compute skewness of the data given

X	f
2	1
7	14
12	23
17	21
22	15
27	16

(10 marks)

(b) Calculate Fisher's ideal index using the data below given that 2003 is base year

(10 marks)

Item	2003		2005	
	Price	Quality	Price	Quantity
Sugar	15	15	22	12
Potatoes	20	5	27	4
rice	4	10	7	5

### QUESTION FOUR

(a) Explain the main strength and one main weakness of arithmetic mean as a measure of central tendency (4 marks)

(b) A researcher found that the mean life time of a sample of 100 light tubes produced by a company is 1580 hours with standard deviation of 90 hours. The company manager claims that mean life time of the tubes produced by the company is 1600 hours. Can the researcher's finding on the mean be accurately used to infer to population mean life time of the tubes at 95% level of confidence? (6 marks)

(c) Calculate the regression equation of Y and X from the following data hence predict the value of Y when X = 3.5 (10 marks)

X	Y
10	20
20	50
30	30
40	80
50	70

### QUESTION FIVE

(a) Discuss FOUR components of time series

(8 marks)

(b) Calculate 3yearly moving averages of the production figures below, draw the trend line and predict the level of production in 2004

(12 marks)

Year	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2001	2003
Production (million tones)	15	21	30	36	42	46	50	56	63	70	74	82	90	95	102