



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 (YR I SEM I1)
UNIT CODE: HCOB 2114
UNIT TITLE: BUSINESS STATISTICS I

DATE:

TIME:

INSTRUCTIONS:

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

QUESTION ONE

- (a) Briefly explain FIVE uses of index numbers (5 marks)
(b) The use of questionnaires provides a quick and simple method of conducting a survey. Explain FIVE factors you would consider while preparing a questionnaire (5 marks)
(c) Distinguish between dispersion and skewness (4 marks)
(d) In the following table are data showing test scores made by salesman on an intelligence test and their weekly sales.

Salesmen	1	2	3	4	5	6	7	8	9	10
Test score (x)	40	70	50	60	80	50	90	40	60	60
Sales(‘0000shs)	2.5	6.0	4.0	5.0	4.0	2.5	5.5	3.0	4.5	3.0

Required:

- i. Calculate the regression line of sales test scores (14 marks)
ii. Use the regression line to estimate the probable weekly sales volume if a salesman makes a score of 100 (2 marks)

QUESTION TWO

- (a) The manager of an import agency are investigating the length of time that customers take to pay their invoices. They have checked the payment reward of two customers chosen at random and have compiled the following table.

Payment in	Number of customers
5 to 9 days	4
10 to 14 days	10
15 to 19 days	17
20 to 24 days	20
25 to 29 days	22
30 to 34 days	16
35 to 39 days	8
40 to 44 days	3

Required:

- i. Calculate the arithmetic mean (6 marks)

- ii. Calculate the standard derivation (6 marks)
 - iii. Estimate the probability that an unpaid invoice at random will be between 30 and 39 days old (4 marks)
- (b) Discuss the limitations of using the media in business management (4 marks)

QUESTION THREE

- (a) You are working as a purchase manager for a company. The following information has been supplied to you by two manufacturers of electric bulbs.

	Company	Company
Mean life (in hours)	1300	1248
Standard derivation (in hours)	82	93
Sample size	100	100

Which brand of bulbs are you going to purchase if you decide to take a risk of 5% (at 5% level of significance the critical value of Z for two tailed = 1.96) (10 marks)

- (b) In sampling, bias means a systematic component of error which deprives a statistical result of its representativeness. Bias is introduced by various methods of election. Discuss FIVE reasons of sampling bias (10 marks)

QUESTION FOUR

- (a) Fit a straight line trend by method of least squares to the following time series data and estimate the production for 2016 (16 marks)

Year	Production of Tv sets(y) (‘000)
1999	17
2000	20
2001	19
2002	26
2003	24
2004	40
2005	35
2006	55
2007	50
2008	74
2009	69

- (b) Distinguish between primary and secondary data (4 marks)

QUESTION FIVE

The weekly wages earned by 100 workers of a factory are set out in the following table

Weekly wages (in Kenya pound)	No. of workers
52.5 – 57.5	12
57.5 – 62.5	16
62.5 – 67.5	25
67.5 – 72.5	14
72.5 – 77.5	13
77.5 – 82.5	10
82.5 – 87.5	6
87.5 – 92.5	3
92.5 – 97.5	1

Required:

- i. Calculate the three quartiles of the above distribution
 - ii. Find the absolute measures of dispersion and skewness based on these quartiles
 - iii. Interpret the measures you have calculated in
(i) and (ii) above
- (20 marks)