The Co-operative University of Kenya

END OF SEMESTER EXAMINATION – DECEMBER 2016

EXAMINATION FOR THE BACHELOR OF CO-OPERATIVE BUSINESS/ BACHELOR OF SCIENCF IN FINANCE (BCOB YR II SEM I/ B.ScF YR II SEM I)

UNIT CODE: HCOB 2204

UNIT TITLE: BUSINESS STATISTICS II

DATE: 7TH DECEMBER, 2016 **TIME: 9:00 AM – 11:00 AM**

INSTRUCTIONS:

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

QUESTION ONE

(a) Explain any FIVE (5) types of a game evident in a market place (10 Marks)

(b) A systematic bias results from errors in the sampling procedures. Explain FIVE (5) factors that may lead to the bias (10 Marks)

(c) A potential investor is to decide to invest in either stock X or stock Y but not both. Should she invest in X and it turns out to be a success, he can make Kshs 2,000, but if it is a failure, he loses Kshs 5,000. The success of stock Y is Kshs 4,000, but a failure is Kshs 3,000. Which stock should he invest in if she has the following probability distribution in view? (10 Marks)

Probability of	Stock X	Stock Y
Success	0.80	0.60
Failure	0.20	0.40

QUESTION TWO

(a) A two-man game is described by the following pay-off matrix of a hypothetical market determine the value of the game and hence explain the choice of your method. (10 Marks)

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Trevino	6	3	-1	0	-3
	3	2	-4	2	-1

(b) A management student wishes to investigate the consumption of sugar in Narok Town. Shs obtained the following data:

Price	30	35	40	45	50	55
Quantity	45	40	40	35	30	25

From the data provided, determine:

i. Regression equation of price on quantity (6 Marks)

ii. Pearson correlation co-efficient (4 Marks)

QUESTION THREE

(a) For situations to be termed as "Competitive games", they must possess certain properties. Identify and briefly explain FIVE (5) of those properties (10 Marks)

(b) Organizations today try to understand the business and move to provide solutions that will satisfy their customers' needs implementing quality control solutions. Highlight FIVE (5) benefits of Statistical Quality Control (SQC) that may accrue to an organization. (5 Marks)

(c) Outline FIVE(5) reasons why forecasting is important in business (5 Marks)

QUESTION FOUR

Monthly sales of general Motors Company was recorded in the last 12 months as shown:

Month	1	2	3	4	5	6	7	8	9	10	11	12
Sales	17	21	19	23	18	16	20	18	22	20	15	22

(a) Plot a line graph of actual sales against time (months) (3 Months)

(b) Calculate a 3-month period moving average (MA) and plot the results on the same Cartesian plane as in part (a) above, clearly labelling the two curves (5 Marks)

(c) Fit the best linear regression model to represent the above time series and hence estimate the sales for 15th month. (12 Marks)

QUESTION FIVE

(a) To determine the productivity of floor workers in a manufacturing factory, a specialist collected the following information regarding the output, scores of an aptitude test (X_1), age X_2), and experience X_3) of eight workers as follows:

Output	13	6	8	11	13	14	13	2
Test	14	6	10	12	14	20	12	8
Age	20	6	11	28	31	32	25	7
Experience	18	7	8	10	18	19	9	7

Fit a multiple regression equation to for the above information (15 Marks)

(b) Hence calculate a coefficient of the multiple correlation of and interpret your results (5 Marks)