



*(KNOWLEDGE FOR DEVELOPMENT)*

**KIBABII UNIVERSITY  
UNIVERSITY EXAMINATIONS  
2017/2018 ACADEMIC YEAR  
SECOND YEAR FIRST SEMESTER  
SPECIAL/SUPPLIMENTARY EXAMINATION  
FOR THE BACHELOR OF EDUCATION ARTS**

**COURSE CODE: BCO 204**

**COURSE TITLE: BUSINESS STATISTICS**

**DATE: 18/10/2018 TIME: 3.00 – 5.00 P.M**

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**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTION ONE IN SECTION A AND ANY OTHER TWO (2)  
QUESTIONS IN SECTION B**

**TIME: 2 HOURS**

KIBUCO observes ZERO tolerance to examination cheating

This Paper Consists of 3 Printed Pages. Please Turn Over.

## SECTION A (COMPULSORY)

### QUESTION ONE

Your company manufactures components for use in the production of motor vehicles. The number of components produced each day over a period of forty days is tabulated below.

553 526 521 528 538 523 538 546 524 544 532 555 517 549 512 528 523 510 555  
 545 524 512 525 543 532 533 519 521 536 534 541 535 531 551 535 519 530 549  
 518 531

- a) Required  
 Group the data into 10 classes. 3 marks
- b) Draw the histogram of the frequency distribution. 2 marks
- c) From the data determine.
- i) The mean 4 marks
  - ii) Median 2 marks
  - iii) Establish the value of the standard deviation of the data. 6 marks
  - iv) Determine the value of kurtosis and skewness of the distribution of the data. 6 marks
- d) Explain four advantages of using random sampling rather than census while studying a population. 4 marks
- e) Differentiate between inductive and deductive reasoning in statistical analysis. 3 mark

## SECTION B

### QUESTION TWO

a) The data below relate to a set of commodities used in a particular process.

Commodity	unit of purchase	Base period		Period 1	
		price sh.	Quantity units	price sh.	Quantity units
A	2.5KG	3.60	115	4.00	950
B	1 BAG	8.00	21	9.00	70
C	10 KG	4.50	126	4.00	218
D	100 Ribbon	5.00	110	6.00	122

- Required** 10 marks  
 Laspeyer's and Paasche price indices for period 1.
- b) Explain the use of the Consumer Price Index. 10 marks

### QUESTION THREE

A casual observation by a researcher for a period of time revealed that there is some association between quantities demanded of a certain industrial product Y and income X. The researcher conducted a study which revealed the following:

Quantity	Income
110	1100
85	700
90	1300
80	600
60	400
75	500
100	1400
110	1200
70	400

- i) Using the Least Squares Method compute the regression line. (5 marks)
- ii) How does income influence quantity demanded? (2.5 marks)
- iii) Estimate the quantity demanded if the income level rose to sh.2,000.(2.5 marks)
- iv) Compute the Pearson correlation coefficient for the two variables and interpret it. (5 marks)

### QUESTION FOUR

- i) Explain the use statistics in business and economics. (5 marks)
- ii) Of 100 students at a college, 25 have a master card , 40 have a visa card and 10 have both.
  - a) Find the probability that a randomly selected student
    - i) Has a master card. (2 mark)
    - ii) Has a visa card. (2 mark)
    - iii) Has both cards (2marks)
  - b) Construct and fill in a contingency table summarizing the credit card data and use the table to find the following probabilities.
    - i) A student has a master card or visa. (1 mark)
    - ii) Has neither credit card. (1 mark)
    - iii) Has exactly one of the two credit cards. (3marks)

Determine the following probabilities

- c) The randomly selected student has a master card given she does not have a visa card. (3 marks)
- d) The randomly selected student has visa card given she does not have a visa card. (3 marks).
- e) From your answer in b (i) above and your knowledge of Baye's theorem proof that a master card and a visa card are mutually exclusive. (3 marks)