



## **GARISSA UNIVERSITY COLLEGE**

*(A Constituent College of Moi University)*

### **UNIVERSITY EXAMINATION 2016/2017 ACADEMIC YEAR ONE SECOND SEMESTER EXAMINATION**

#### **SUPPLEMENTARY/SPECIAL EXAMINATION**

**SCHOOL OF BUSINESS AND ECONOMICS**

**FOR THE DIPLOMA IN BUSINESS MANAGEMENT**

**COURSE CODE: DBM 004**

**COURSE TITLE: QUANTITATIVE TECHNIQUES**

**EXAMINATION DURATION: 3 HOURS**

**DATE: 29/09/17**

**TIME: 02.00-05.00 PM**

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#### **INSTRUCTION TO CANDIDATES**

- **The examination has SIX (6) questions**
- **Question ONE (1) is COMPULSORY**
- **Choose any other THREE (3) questions from the remaining FIVE (5) questions**
- **Use sketch diagrams to illustrate your answer whenever necessary**
- **Do not carry mobile phones or any other written materials in examination room**
- **Do not write on this paper**

**This paper consists of FIVE (5) printed pages**

*Supplementary / special exam\_*

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***please turn over***

*Good Luck – Exams Office*



### QUESTION ONE (COMPULSORY)

- (a) State any two measures of central tendency or averages **(2marks)**
- (b) State any one measure of dispersion or variation **(1mark)**
- (c) Discuss any two advantages of studying Quantitative Techniques to a Business Manager **(4marks)**
- (d) Company XYZ has three production sections  $S_1$ ,  $S_2$ ,  $S_3$  which contribute, 40%, 35% and 25% respectively to the total output. The following percentages of faulty units have been observed;

$$S_1 \quad 2\% \quad (0.02)$$

$$S_2 \quad 3\% \quad (0.03)$$

$$S_3 \quad 4\% \quad (0.04)$$

There is a final check before output is dispatched. Calculate the probability that a unit found faulty has come from section 1 ( $S_1$ ) **(5marks)**

- (e) Describe any two main characteristics of a Normal Distribution **(2 Marks)**
- (f) Discuss the uses of Index Numbers in business **(3 marks)**
- (g) You are the Supervisor of the Candy Section of Madina Supermarket. On Friday afternoon the first 50 items sold out (in K.Shs) from the section were recorded as follows;

24	8	10	12	15	18	20	14	16	24
32	28	46	20	16	16	16	16	34	36
28	42	46	15	44	42	18	20	24	25
26	26	26	26	23	11	9	16	16	37
44	40	16	26	10	32	23	38	28	28

- i. Tally the prices into class interval of 1-10, 11-20, 21-30, 31-40 & 41-50 and determine the modal class **(6 Marks)**
- ii. What advice would you give to the Manager of Madina Supermarket? **(2Marks)**



## QUESTION TWO

(a) Discuss the following major methods of data collection

- i. Questionnaire
- ii. Interview schedule
- iii. Focus Group

**(9 marks)**

(b) Discuss the uses and limitations of statistics

**(6marks)**

## QUESTION THREE

(a) Using the following information:

	<b>X</b>	<b>Y</b>
Mean	6	8
Standard deviation	5	40/3
$r = 8/15$		

Required: Find

- i. The regression coefficient of **X** on **Y** **(3marks)**
- ii. The regression coefficient of **Y** on **X** **(2marks)**
- iii. The most likely value of **Y** when **X=100** **(2marks)**

(b) Using the following information

<b>X</b>	2	3	4	5	6
<b>Y</b>	7	9	10	14	15

Find the regression equation of **Y** on **X** **(5marks)**

(c) Distinguish between correlation and regression **(3marks)**



#### QUESTION FOUR

Miss Atieno, a Diploma in Business Management student doing her field attachment at Afya Medical Clinic was investigating the association between gestational age at birth and birth weight of 17 infants which she recorded in the table below;

Infant No.	Age (in Weeks)	Weight(in Grams)
1.	35	1,895
2.	36	2,030
3.	29	1,440
4.	40	2,836
5.	36	3,090
6.	42	3,827
7.	40	3,260
8.	37	2,690
9.	41	3,285
10.	38	2,920
11.	83	3,430
12.	41	3,657
13.	40	3,685
14.	40	3,345
15.	41	3,260
16.	38	2,680
17.	39	2,005



Required:

- (a) Sketch a scatter diagram ( 4marks)
- (b) Explain the observation in the scatter diagram obtained in (a) above (3 marks)
- (c) Using the information provided, calculate the correlation coefficient ( $r$ ) and comment (8 marks)

### QUESTION FIVE

The table below shows the number of minutes 80 students of Digital College spent on their smart phones while attending a 3-hour QT lecture.

<b>Number of minutes</b>	1-5	6-10	11-15	16-20	21-25	26-30	31-35
<b>No of students</b>	1	18	25	26	7	2	1

Required:

- a) Calculate the modal minute ( 3 marks )
- b) The mean minutes ( 3 marks )
- c) Median minute ( 3 marks )
- d) Variance ( 3 marks )
- e) The standard deviation of minutes ( 3 marks )

### QUESTION SIX

- (a) Outline the assumptions of Regression analysis (6marks)
- (b) Discuss the possible problems in the stages of statistical investigations (9 marks)

