GARISSA UNIVERSITY

UNIVERSITY EXAMINATION 2017/2018 ACADEMIC YEAR <u>ONE</u> <u>SECOND</u> SEMESTER EXAMINATION

SCHOOL OF BUSINESS AND ECNOMICS

FOR THE DIPLOMA IN BUSINESS MANAGEMENT

COURSE CODE: DBM 004

COURSE TITLE: QUANTITATIVE TECHNIQUES

EXAMINATION DURATION: 3 HOURS

DATE: 13/04/18   TIME: 09.00-12.00 PM

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 FOUR (4) printed pages   *please turn over*

QUESTION ONE (COMPULSORY)

(a) By use of graphs, discuss the three types of correlation **[6 marks]**

(b) Explain and State the formulae for the following measures of dispersion

    i.   Range **[2 marks]**

    ii.   Standard deviation **[2 marks]**

(c) Calculate the Median Using the Following Information **[4 marks]**

Wages	30-35	35-40	40-45	45-50	50-55	55-60
No. Workers	5	8	10	6	3	2

(d) Elaborate on some of the merits of index numbers in relation to Business **[4 marks]**

(e) From the following data, construct the index for 2009 using 2017 as base year. Comment on your result. **[4 marks]**

Commodity	price 2017	price 2009
Maize meal	120	70
Rice	4564	
Milk	85	32
Sugar	45	70
Bread	25	40

(f) Identify four essential features of a Normal Distribution. State the formula for its calculation

[**5 marks**]

(g) Give two characteristics of binomial distribution. State its formula for calculation **[3 marks]**

QUESTION TWO

Compute index numbers for 1996 from the following taking 1986 as base year.

Year	rice		wheat		maize	
Price	Qty	price	Qty	price	Qty	
1986	20	80	12	90	5	150
1996	25	100	18	120	10	180

i.	Laspeyres index	**[3 marks]**
ii.	Paasche index	**[3 marks]**
iii.	Fishers index	**[3 marks]**
iv.	Marshall-edge worth index	**[3 marks]**
v.	Dorbish-bowly index	**[3 marks]**

QUESTION THREE

(a) Using the following information:

	X	**Y**
Mean	24	16
Standard deviation	18	36.25

r =0.125

Required: Find

i.   The regression coefficient of **Y** on **X**   (3marks

ii.   The most likely value of **Y** when **X**=90   **[2 marks]**

(b) Using the following information

X	8	12	14	16	18
Y	24	30	32	39	41

Find the regression equation of *Y* on *X*   **[7 marks]**

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

QUESTION FOUR

(a) Calculate the coefficient of correlation for the following. **[12 marks]**

Husband age(x)	23	27	28	28	29	30	31	33	35
Wife age(y)	18	20	22	27	21	29	27	29	28

(b) name three measures of averages **[3 marks]**

QUESTION FIVE

The table below shows the marks scored by students in a CAT.

Marks scored	0-5	5-10	10-15	15-20	20-25	25-30
No of students	2	8	12	6	7	5

Required: calculate

    i.   the modal mark **[3 marks]**

   ii.   The mean mark **[3 marks]**

  iii.   Median mark **[3 marks]**

  iv.   Variance **[3 marks]**

   v.   The standard deviation of marks **[3 marks]**

QUESTION SIX

(a) Statistical inquiry is a process of transforming raw data into useful information that can tell us more about a subject and allow us to make recommendations and possibly make predictions of future outcomes. Discuss the six stage of statistical inquiry **[12 marks]**

(b) A container is packed with heavy (2B), medium (HB), fine (2H) and extra fine (3H) pencils. If a pack is chosen randomly from the container what is the probability that the pack chosen is medium. **[3 marks]**