

GARISSA UNIVERSITY

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

SCHOOL OF BUSINESS AND ECONOMICS

FOR THE DEGREE OF BACHELOR OF BUSINESS MANAGEMENT

COURSE CODE: IRD 101

COURSE TITLE: QUANTITATIVE SKILLS

EXAMINATION DURATION: 3 HOURS

DATE: 05/12/17

TIME: 2.00-5.00 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 FIVE (5) printed pages

SEM 1, 17/18 main exam (01/12-14/12/17)



please turn over

QUESTION ONE (COMPULSORY)

- (a) Define the term statistics hence explain how statistical procedure can be considered both a descriptive and inferential statistics [3 marks]
- (b) Given that A is the set of odd numbers less than 20, and B is the set of prime numbers less than 20, list the numbers of
 - (i) A [1 mark]
 - (ii) B [1 mark]
 - (iii) $A \cap B$ [1 mark]
 - (iv) $A \cup B$ [1 mark]
- (c) Use matrix method to solve the equation

$$2x - y = 7$$

 $x + 3y = 14$
[4 marks]

(d) The table below shows a frequency distribution on marks of a final examination by masters students

Marks	10-19	20-29	30-39	40-49	50-59	60-69	70-79
No. of	1	3	11	21	43	32	9
students							

Use the given data to compute the following

i. Mean

ii. Mode

- iii. Median
- iv. Standard deviation

(e) The discrete random variable X has the probability distribution shown below if P ($X \le 1$) = 0.3 and E(X) = 1.7. Determine Var (X) [4 marks]

Х	0	1	2	3
P(X=x)	0.2	А	В	С



[5 marks]

(f) The table below shows the exports of Country 2008.

Commodity	Coffee	Wheat	Cotton	Flower	Tea	Timber	Others
Value in	98.9	102.3	43.7	54.3	41.6	78.2	20.9
Million							

Use this data to differentiate between a bar graph and a pie chart

QUESTION TWO

- (a) Differentiate between regression Analysis and correlation Analysis
- (b) The table below shows the marks of two students in two subjects X and Y in TUK.

Subject X	65	78	59	43	36	56	43
Subject Y	36	39	27	28	24	20	25

- i. Estimate a and b in the regression line of the form y=a+bX
- ii. Estimate the value of Y when X=50
- iii. Calculate the correlation coefficient of the above data [10

QUESTION THREE

(a) Use aristic method to find the determinant of A

$A = \begin{pmatrix} 3 & 1 \\ -1 & 2 \\ 3 & -2 \end{pmatrix}$	$\begin{array}{c}2\\4\\1\end{array}$	[2	2 marks]
(b) Obtain the inverse of A= $\begin{vmatrix} 4 \\ 5 \\ 2 \end{vmatrix}$	2 6 3	$ \begin{array}{c} 3 \\ 1 \\ 0 \end{array} $ [4	marks]

(c) In a sample of 100 household in Garissa County, the following distribution of number of people per household was observed.

[5 marks]

[10 marks]

[5 marks]

No. of people	X	1	2	3	4	5	6	7
No. of household	F	7	f2	20	f4	18	10	5

The mean of people of per household frequencies was found to be 4.0. However, the frequencies per two and four members per household are missing.

i) Calculate the missing frequencies f2 and f4 [9 marks]

QUESTION FOUR

- (a) Explain the types of variable used in statistics hence given two sources of data collection citing examples
 [6 marks]
- (b) The table below shows a frequency distribution on marks of a final examination by Garissa university student

Marks	3.50-3.59	3.60-3.69	3.70-3.79	3.80-3.89	3.90-3.99	4.00-4.09	4.10-4.19	4.20- 4.29
No. of students	1	2	2	4	5	6	3	2

Use the given data to compute the following

- i. Compute the sample mean and sample standard deviation.
- ii. Compute the median and mode
- iii. Construct a relative frequency histogram and o give curve of the data

[9 marks]

QUESTION FIVE

- (a) The sets L, M and N in a universal set consisting of the first 10 lower case letter of the alphabetical are L={a, b, c} M={b, c, a, e} N={a, d, e, f} determine
 - i. MUN
 - ii. LUN

vii.	$\mathbf{M} \cap \mathbf{N} \cap \mathbf{L}^{\prime}$		[0 monlea]
vi.	$M \cap \ N$		
v.	(LUMUN)'		
iv.	$L \cap \ M \cap \ N\textbf{'}$		
iii.	L'		
NO. BBM 08	37/17		

(b) The following are the yearly percentage losses made by a company in 10 successive years

22, 89, 36, 17, 22, 17, 27, 12, 14, 15.

Find the arithmetic mean, harmonic mean and geometric mean. [6 marks]

QUESTION SIX

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(a) A random variable X has the probability distribution shown below,

X	1	2	3	4	5
P(X=x)	7c	5c	4c	3c	С

i. Find the values of the constant c hence determine the mean and variance of X [6 marks]

(b) Define the term universal set and finite set

- (c) In a recent survey of 400 students in a college, 100 were listed as studying HRM and 150 were listed as studying BA, 75 registered as doing both courses
 - i. Find the number of student in the college who are not registered in either courses

[3 marks]

[4 marks]

ii. How many students were registered for studying HRM [2 marks]