



GARISSA UNIVERSITY COLLEGE

(A Constituent College of Moi University)

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

SUPPLEMENTARY/SPECIAL EXAMINATION

SCHOOL OF INFORMATION SCIENCE

FOR THE DIPLOMA IN INFORMATION TECHNOLOGY

COURSE CODE: DIT 002

COURSE TITLE: QUANTITATIVE SKILLS

EXAMINATION DURATION: 3 HOURS

DATE: 26/09/17

TIME: 09.00-12.00 PM

INSTRUCTION TO CANDIDATES

- **The examination has FIVE (5) 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 THREE (3) printed pages

Supplementary / special exam_

1

please turn over

Good Luck – Exams Office



QUESTION ONE (COMPULSORY)

(a) Solve for x:

$$2^{2x-1} - 9(2^{x-2}) + 1 = 0 \quad [4 \text{ marks}]$$

(b) With relevant example explain 'disjoint sets' [2 marks]

(c) In a college, 60 students are brought to the principal's office for questioning. If 40 of them are boys and the remaining 20 are girls. If the students are taken randomly without replacement for the interrogation, what is the probability that the second person called is a girl [3 marks]

(d) With relevant example differentiate between 'correlation and regression' [4 marks]

(e) Find the variance of the following;

$$125, 106, 113, 5, 120, 103, 321, 98 \text{ and } 111 \quad [3 \text{ marks}]$$

(f) Evaluate: $(2\frac{2}{3} + 1\frac{4}{5}) \div (-\frac{1}{3} + \frac{6}{5})$ [4 marks]

(g) Three items of type A and four items of type B costs Ksh.560 while two items of type A and five of B costs Ksh.490. Use matrix method to find the cost of ten items of A and seven items of B. [3 marks]

QUESTION TWO

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

Marks	20-29	30-39	40-49	50-59	60-69	70-79	80-89
No. of Candidates	3	6	11	20	13	5	2

Calculate;

- (a) Arithmetic mean of the class [3 marks]
- (b) The standard deviation of the class [4 marks]
- (c) Median mark [3 marks]
- (d) Quartile deviation [5 marks]

QUESTION THREE

(a) Define time series [2 marks]



(b) The table below shows the amount money spend from 1986 -1996

YEAR	1986	1987	1988	1989	1990	1992	1991	1992	1993	1994	1995	1996
Ksh.(millions)	66.6	84.9	88.60	78.0	93.2	96.8	93.2	111.6	88.3	111.7	115.2	111.0

- i. Use least square method to equation of trend line **[6 marks]**
 - ii. Use the trend line to estimate value of 1997 **[2 marks]**
- (c) Give three uses of time series **[5 marks]**

QUESTION FOUR

(a) Solve;

- i. $4x_1 + x_2 - 5x_3 = 8$
- ii. $-2x_1 + 3x_2 + x_3 = 12$
- iii. $3x_1 - x_2 + 4x_3 = 5$ **[11 marks]**

(b) Calculate the standard deviation, using 20 as an assumed mean of the following marks.

10, 12, 15, 17, 26, 21 **[4 marks]**

QUESTION FIVE

From a sample of 800 consumers, 230 took coffee, 245 took tea and 325 took cocoa, 30 took all the three beverages, 70 took coffee and cocoa, 110 took coffee only, 185 took cocoa only.

Required:

- (a) Present the above information in a Venn Diagram **[4 marks]**
- (b) The number of customers who took tea only **[2 marks]**
- (c) The number of customers who took coffee and tea only **[2 marks]**
- (d) The number of customers who took tea and cocoa only **[2 marks]**
- (e) The number of customers who took none of the beverages **[2 marks]**
- (f) Find the % of consumers who took tea or coffee but not cocoa **[3 marks]**

