

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS
RESIT/SPECIAL EXAMINATIONS**

EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE

MATH /COSC 0170: MATHEMATICS FOR COMPUTING I

STREAMS:

TIME: 2 HOURS

DAY/DATE: TUESDAY 24/07/2018

2.30 P.M – 4.30 P.M

INSTRUCTION:

ANSWER ALL QUESTIONS

QUESTION ONE

- a) In a 6- question marking test how many different answer sheets are possible if no answer sheet can be used twice and there are
 - (i) 6 answer sheets available
 - (ii) 7 answer sheets are available
 - (iii) 10 answer sheets are available6marks]
- b) How many terms of the sequence 1, 4, 7,10... are needed to give a sum of 590 from the first term of the sequence
[5marks]
- c) Find the quotient and the remainder when $x^3 - 4x^2 + x + 2$ is divided by $(x^2 - 3)$
[5marks]
- d) Prove analytically that $(A \cup B) \cup C = A \cup (B \cup C)$
[4marks]

QUESTION TWO

- a) A school committee of nine members is to be formed 8 parents and 6 teachers and the principal. In how many ways can the committee be formed in order to include
 - i) The principal
 - ii) The principal and 5 parents[10marks]
- b) Given $U = \{1,2,3,4,5,6,7,8,9,10\}$

- c) A family of 4 brothers and 3 sisters is to be arranged for a photograph in one row. In how many ways can they be seated if
- i) All the sisters seat together
 - ii) No two sisters seat together
- [4marks]
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