



TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY
DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
(DICT 14J)

EIT 2205: PROGRAMMING METHODOLOGY

END OF SEMESTER EXAMINATION

SERIES: APRIL 2014

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE** and any other **TWO** questions

Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (Compulsory)

- a) Explain the following as used in computer programming:
(i) Interpreter
(ii) Compiler
(iii) Object-code
(iv) Pseudo code (8 marks)
- b) Explain the following paragraph of programming languages: (12 marks)
(i) Structured programming
(ii) Object oriented programming
(iii) Web programming

Question Two

- a) With the aid of examples, explain the THREE control structures in C programming language. (9 marks)
- b) Explain any TWO types of errors in computer programming. (4 marks)
- c) Write a C program to calculate the value X in quadratic equation given the following:

$$ax^2 + bx + c = 0$$
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$b^2 - 4ac$

Determinant =
If determinant >0

$$x_1 = \frac{-b + \sqrt{b^2 - 4ac}}{2a}$$

$$x_2 = \frac{-b - \sqrt{b^2 - 4ac}}{2a}$$

If determinant = 0

$$X_1 = X_2 = -b/2a$$

If Determinant <0
“equation has no roots”

(7 marks)

Question Three

Describe the stages of program development life cycle. (20 marks)

Question Four

- a) (i) Explain the term variable as used in computer programming. **(12 marks)**
(ii) Explain the FOUR data types in C programming language. **(8 marks)**
- b) (i) Write a C program to read THREE integer values, compare them and display the largest. **(8 marks)**
(ii) Define the term algorithm as used in programming. **(2 marks)**

Question Five

- a) Explain the term data structure. **(2 marks)**
- b) Explain the following as used in programming:
(i) Arrays
(ii) Records
(iii) Queue **(12 marks)**
- c) Explain THREE control structures in C programming. **(6 marks)**