



THE TECHNICAL UNIVERISTY OF MOMBASA

# Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN MECHANICAL ENGINEERING (PLANT OPTION)

**EIT 2112: COMPUTER APPLICATION II**

END OF SEMESTER EXAMINATION

**SERIES: APRIL 2013**

**TIME: 2 HOURS**

**Instructions to Candidates:**

You should have the following for this examination

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 **TWO** printed pages

**Question One (Compulsory)**

- a) Define the following terms:
  - (i) Algorithm
  - (ii) Problem definition(4 marks)
  
- b) Differentiate between low and high level programming language. (4 marks)
  
- c) What are the limitations of using flow chart diagram in system analysis? (4 marks)
  
- d) Explain **TWO** basic functions of algorithm in programming. (2 marks)
  
- e) Explain **THREE** data types as used in C++ (3 marks)
  
- f) Define a simple C++ main program. (3 marks)

**Question Two**

- a) Differentiate between local and global variables. (5 marks)
  
- b) Write a C++ program to calculate the sum of any 10 given numbers using loops. (5 marks)
  
- c) Write a program that will give the following output. (10 marks)  

```
* * * * * * * *
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* * * * * * *
```

**Question Three**

- a) Write an algorithm to find the sum and average of three given numbers. (6 marks)
  
- b) Draw a flow chart diagram for the algorithm illustrated above (i) (7 marks)
  
- c) Write a C++ program to implement the algorithm above (ii) (7 marks)

**Question Four**

- a) Write an algorithm to find the result of a division operation for the given two numbers X and Y. (7 marks)
  
- b) Show how to declare a function in C++ that returns a value. (6 marks)
  
- c) Write a C++ program to show how to call a function declared in (ii) above. (2 marks)
  
- d) Write a C++ program that can prompt user to enter two integers than display the maximum of the two. (5 marks)

**Question Five**

- a) Draw a flow chart to find the sum and products of the two given numbers. (5 marks)

b) Discuss the **FIVE** major phases of software development life cycle.

**(15 marks)**