



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE

**DIPLOMA IN INFORMATION COMMUNICATION & TECHNOLOGY
(DICT MOD II)**

END OF SEMESTER EXAMINATIONS

APRIL/MAY 2010 SERIES

OBJECT ORIENTED PROGRAMMING (OOP)

TIME: 2 hours

INSTRUCTIONS TO CANDIDATES

Attempt any **THREE** Questions
ALL Questions **CARRY EQUAL** marks

Question ONE

- (a). Explain the following terms as used in object-oriented programming:
- (i). Data abstraction
 - (ii). Data encapsulation
 - (iii). Inheritance
 - (iv). Polymorphism
 - (v). Data hiding
- (10 Marks)**
- (b). Explain any **TWO** differences between objected oriented programming and procedural programming and procedural programming approach.
- (4 Marks)**
- (c). (i). State any **THREE** objected-oriented languages. **(3 Marks)**
- (ii). Write a C++ program to calculate the factorial of a number given:-
- $$\begin{aligned}0! &= 1 \\1! &= 1 \\N! &= n*(n- 1)!\end{aligned}$$
- (6 Marks)**

Question TWO

- (a). With examples explain the **THREE** control structures in C++ Programming Language. **(12 marks)**
- (b). Write a C++ Program to read **THREE** integer values, compare them and display the largest. **(7 Marks)**
- (c). State **FOUR** advantages of drawing program flowcharts. **(4 Marks)**

Question THREE

- (a). (i). Explain the term “structured programming”. **(2 Marks)**
- (ii). Explain the advantages of structured programming. **(10 Marks)**
- (b). Develop a C++ program having a function to read **TEN** integer values then calculate sum and average. **(8 Marks)**
- (c). State any **THREE** standard data types in C++ Programming Language.

(3 Marks)

Question FOUR

- (a). (i). Explain the term “data structures”. **(2 Marks)**
- (ii). Explain any **TWO** types of data structures. **(4 Marks)**
- (b). Develop a C++ program having an array called score having twenty elements. The program should compare the elements and display the largest. **(8 Marks)**
- (c). Explain the following terms:-
- (i). Local variables
- (ii). Global variables **(4 Marks)**
- (d). (i). Explain any **FOUR** relational operators in C++ programming. **(4 Marks)**
- (ii). State one logical operator in C++. **(1 Mark)**

Question FIVE

- (a). Develop a C++ program to print the integers as shown below. Implement using the while loop.

| Number | Square | Cube |
|---------------|---------------|-------------|
| 1 | 1 | 1 |
| 2 | 4 | 8 |
| 3 | 9 | 27 |
| 4 | 16 | 60 |

(8 Marks)

- (b). (i). Explain the types of errors in C++ Programming Language. **(6 Marks)**
- (ii). Distinguish between interpreter and compiler. **(4 Marks)**
- (c). Draw a program flowchart to calculate the sum of all even numbers from

0 to 10.

(5 Marks)