THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of JKUAT)

Faculty of Engineering & Technology

DEPARTMENT COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

DICT 10M

EIT 2208: OBJECT ORIENTED PROGRAMMING (OOP)

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: FEBRUARY/MARCH 2012
TIME: 2 HOURS

SECTION A (COMPULSORY)

Question One 30 Marks

a) Explain the following terms:
    i.   Class.
    ii.   Object.
    iii.   Inheritance.
    iv.   Polymorphism.   **[8 marks]**

b) State any **six** benefits of object oriented programming methodology.   **[6 marks]**

c) Using a suitable example, show the declaration and implementation section of a class.
                                                                     [4 marks]
d) Explain the term 'Data hiding'.   **[2 marks]**

e) Distinguish between Constructors and Destructors.   **[4 marks]**

f) Explain the term 'Overloading' stating its importance.   **[3 marks]**

g) Using a suitable illustration, explain the term Multiple Inheritance.   **[3 marks]**

SECTION B (Answer any two questions)

Question Two

a) List **three** ways in which an object can be passed as an argument to a function   **[3 marks]**

b) Write a program that declares a student class with three variables stud_id, stud_mark and stud_grade and two functions get_mark and show_grade. The function get_marks gets values for stud_id and stud_mark and then computes and stores the grade 10 stud_grade. The function show_grade then displays all the three values. The grade is calculated as follows:

mark	grade
mrk < 50	F
mrk < 60	C
mrk < 70	B
mrk > = 70	A

                                                                     [12 marks]

Question Three

a) State **four** ways in which a constructor differs from a member function   **[4 marks]**

3b) Using a class employee with variables int id and double salary and functions get and set values , write a program to illustrate how a constructor works.   **[11 marks]**

Question Four

a) Given that student and employee are subclasses of person, write the attributes and methods of the class person, student and Employee to illustrate the inherited properties **[4 marks]**

b) The account class is the base class and the current account is the subclass. There are two variables (account_no and name). Each class has its own variables and functions. The functions for the account class are open_account ( ), show_account ( ). The functions for the current account include deposit ( ), show_balance ( ). Write a program to illustrate this. **[11 marks]**

Question Five

Create a class called numbers that has a unary operator minus. Overload the operator so that it can be applied to the class Numbers. The functions are get_data ( ), show_data ( ) and operator_ ( ).

[15 marks]