



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY &
MAINTENANCE (DICT Y2 S1)

ECT 2204: OBJECT ORIENT PROGRAMMING

SPECIAL/SUPPLEMENTARY EXAMINATION

SERIES: FEBRUARY 2013

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions

Answer question **ONE (COMPULSORY)** 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) In respect to Object Oriented Programming (OOP), explain the meaning of the following terms: **(6 marks)**
- (i) Function overloading
 - (ii) Destructor
 - (iii) Abstraction
 - (iv) Encapsulation
 - (v) Message passing
 - (vi) Operator overloading
- b) Differentiate between the scope of a variable and lifetime of a variable. **(2 marks)**
- c) Using a C++ code example, differentiate between parameterized constructor and an implicit constructor **(2 marks)**
- d) Explain the meaning of the following terms: **(8 marks)**
- (i) Super class and sub class
 - (ii) Data members and member functions
 - (iii) Pass by value and pass by reference
 - (iv) Local variables and global variables
- e) Outline **FOUR** characteristics of a destructor **(4 marks)**
- f) List down **FOUR** basic concepts of OOP **(2 marks)**
- g) Define an Abstract Data Type (ADT) **(2 marks)**
- h) Distinguish between 'while' and 'do-while' looping constructs. **(4 marks)**

Question Two

- a) List and briefly explain **THREE** types of inheritance. **(6 marks)**
- b) Outline **FOUR** characteristics of a constructor **(4 marks)**
- c) Name and briefly explain any **THREE** access specifies. **(6 marks)**
- d) Write a C++ program to print even numbers between 0 and 100 on a screen. **(4 marks)**

Question Three

- a) Differentiate between Abstract Data Type and Abstraction Technologies. **(2 marks)**
- b) In C++, using the concept of inheritance, a sub class inherit properties of a base class can't a subclass inherit from the base class. **(3 marks)**
- c) Write a C++ code stub to implement a function which receives an integer value, adds 1,000 to it and return the resulting value to the calling routine. **(4 marks)**
- d) Differentiate between a function and a procedure. **(2 marks)**
- e) List and briefly explain Two parameter passing mechanism. **(4 marks)**
- f) What are parts of class specification? **(2 marks)**
- g) Write a general syntax of class declaration. **(3 marks)**

Question Four

- a) Differentiate between an inline function and a friend function. (2 marks)
- b) List **TWO** characteristics of a member function. (2 marks)
- c) List any **FOUR** applications of Object Oriented Programming (OOP) (4 marks)
- d) Using examples, specify **TWO** classifications of Data Types in C++ (4 marks)
- e) List down any **TEN** operators available in C++ (5 marks)
- f) List any **THREE** types of control structures used in C++ (3marks)

Question Five

- a) Write a simple C++ program to demonstrate an implementation of a parameterized constructor. (4 marks)
- b) What is dynamic initialization of objects? (2 marks)
- c) What is meant by super class and a derived class? (2 marks)
- d) Write a piece of C++ code to demonstrate an implementation of function overloading mechanism. (4 marks)
- e) Write a class definition of your choice to demonstrate the concept of single inheritance. (5 marks)
- f) Explain the term function prototype. (2 marks)
- g) Define the term object as used in OOP (1 mark)