



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A CONSTITUENT COLLEGE OF JKUAT)

Faculty of Engineering & Technology

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

DIPLOMA IN TECHNOLOGY

ELECTRICAL POWER ENGINEERING

EEE 2258: PROGRAMMING AND SOFTWARE ENGINEERING II

SUPPLEMENTARY/SPECIAL EXAMINATIONS

SERIES: JUNE 2012

TIME: 2 HOURS

INSTRUCTIONS:

- You are required to have the following for this examination:
 - Answer booklet
- This paper consists of **FIVE** questions.
- Answer any **THREE** questions.

This paper consists of Four printed pages.

QUESTION 1

- a) I) Briefly explain the purpose of each of the following elements in a C program.
- i) Pre-processor directive
 - ii) Declarations
 - iii) Expressions
 - iv) Statements
 - v) Function
- II) Show the general structure of a C program function. **(9 marks)**
- b) I) Explain why the functions main C> is special to a C program.
- II) State the meaning of the following escape sequence code in a program
- i) \n
 - ii) \b
 - iii) \t
 - iv) \n
 - v) \a
- (6 marks)**
- c) Write program codes for the following control structures to show how each can be implemented in a C program.
- i) Print f c>
 - ii) Scan fc>
- (4 marks)**

QUESTION 2

- a) I) Describe the following:
- i) Source code
 - ii) Compiler
 - iii) Machine code
- (3 marks)**
- II) Explain the purpose of a control structure in C program. **(2 marks)**
- III) State and explain **THREE** categories of control structures in C program. **(6 marks)**
- b) I) Write a C program to show how each of the following control structure can be implemented
- i) If-else-if
 - ii) While loop
- (6 marks)**
- II) List any **THREE** rules to be followed when naming variables in a program. **(3 marks)**

QUESTION 3

The electrical department of Mombasa Polytechnic University College uses a students' grading system that displays the student name, course,, class, semester and subject done in an exam. The program

calculates the total marks and corresponding average marks for each student. The final grades are assigned based on the average marks and using the following criteria

- < 40 FAIL
- > = 40 < = 60 PASS
- > 60 < = 80 CREDIT
- > 80 < = 100 DISTINCTION

Write a C program for the above specifications using atleast **THREE** subjects. **(20 marks)**

QUESTION 4

Design a C program using while loop control structure and one dimensional array to

- (I) Prompt the user to enter a set of integer values to be manipulated
- (II) Prompt the user to enter the value in the set one at a time
- (III) Perform the following arithmetic operations
 - i) Sum the values entered into the system
 - ii) Average the values
 - iii) Calculate the product of the values

(20 marks)

QUESTION 5

Write a C program that stores ten integer values. The program should then compare the values stored sorts them and display then in descending order. **(20 marks)**