



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

Faculty of Engineering & Technology

DIPLOMA IN INFORMATION TECHNOLOGY

EDT 2003

END OF SEMESTER EXAMINATIONS

APRIL/MAY 2010 SERIES

OBJECT ORIENTATED PROGRAMMING I

TIME: 2 hours

INSTRUCTIONS TO CANDIDATES

Answer question **ONE** and Any other **TWO** questions

SECTION A

Question ONE : Answer ALL Questions

- Q1 a) Define the following terms: **[8 marks]**
- Class
 - Object
 - Inheritance
 - Polymorphism
- b) Illustrate the structure of an object oriented Program. **[3marks]**
- c) Outline any **Five** benefits of Object Oriented Programming. **[5 marks]**
- d) Write appropriate declarations, assigning initial values for each of the following: **[3 marks]**
- Integer variable: index
 - Unsigned integer variable: cust_num
 - Double-precision variables: gross, tax, net
- e) Explain the meaning of each of the following declarations. **[3 marks]**
- Int *a, *b, c;
 - Double *f;
 - Char *d, e;
- f) Write the header file needed to use the following functions. **[3 marks]**
- sqrt ()
 - random ()
 - islower ()
- g) i. Explain the term ARRAY
- ii. With suitable examples, illustrate the ONE and TWO dimensional array declarations **[5 marks]**

SECTION B: Answer any TWO questions

Question TWO

- a) Write a program to calculate the area of a circle using the WHILE LOOP. The program should store the values of radius and the calculated areas in arrays radius and area respectively, and then display those values. **[12 marks]**
- b) Explain any four statements you have used in the above program. **[8 marks]**

Question THREE

- a) Explain with suitable code to illustrate the **FOUR** jump statements used in C+. **[8 marks]**
- b) Write a program to illustrate the switch statement, the program should display the message **To append a record, To modify a record, To delete a record, To exit the menu, or invalid selection**, depending on whether the value entered for the prompt Enter selection: is A, M, D, X, or some other character. **[12 marks]**

Question FOUR

- a) Write a program to read an arbitrary number of temperature readings into the array temp using pointers. Then again using pointers, it computes the average temperature. The program should terminate when the value entered for temperature is 0. **[12 marks]**
- b) i. With suitable diagrams explain the concept of Single indirection and multiple indirection as used in pointers.
- ii. Write a code to illustrate the use of multiple indirections. The code should output the value 7 which is stored in the variable num. **[8 marks]**

Question FIVE

- a) Write a program to convert a lower case character to an upper-case using a programmer- defined function. **[10 marks]**
- b) Write a program that will sort a list of $n < \text{maxsize}$ integer numbers entered by the user. **[10 marks]**

