TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR:
BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING
(BSME Y2 S2)

ICS 2276: COMPUTER PROGRAMMING II

SPECIAL/SUPPLEMENTARY EXAMINATION
SERIES: MARCH 2014
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
You should have the following for this examination
- *Answer Booklet*
This paper consists of **FIVE** questions. Attempt question **ONE** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **TWO** printed pages

Question One (Compulsory)

a) Identify any popular Java/C++ editors   **(3 marks)**

b) Define the following Java/C++ terms: **(6 marks)**
   (i)   Object
   (ii)   Class
   (iii) Method
   (iv)   Instance variables

c) Distinguish between:
   (i)   A Java/C++ Identifier and Java/C++ modifier
   (ii)   A relational operators and logical operators   **(4 marks)**

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d) Describe the types of C++/Java variables **(3 marks)**

e) Create a Java/C++ class called dog with two attributes and TWO methods **(3 marks)**

f) Illustrate how a do while loop can be used to output the following:
Value of X: 10
Value of X: 11
Value of X: 12
Value of X: 13
Value of X: 14 **(5 marks)**

g) Outline THREE steps for creating an object **(3 marks)**

h) Distinguish between primitive data types and reference data type **(3 marks)**

Question Two

a) Write a program that prompts the user's name, and the greets the user by name. Before outputting the users name, converts it into upper case letter, For example, it the user's name is Fred, then the program should respond "Hello, FRED, nice to meet you!" **(20 marks)**

Question Three

Suppose that a file named "textdata.txt." contains the following information. The first line of the file is the name of a student. Each of the next lines contains an integer. The integers are the students' scores on three exams. Write a program that will read the information in the file and display (on standard output) a message that will read the information in the file and average grade on the three exams. The average is obtained by adding up the individual exams grades and then dividing by the number of exams. **(20 marks)**

Question Four

Write a program that will read a sequence of positive real numbers entered by the user and will print the same numbers in stored order from smallest to largest. The user will input a zero to mark the end of the input. Assume that at most 100 positive members will be entered.

Question Five

a) Write a Java/C++ Program that calculate the perimeter and area of a circle **(10 marks)**

b) Write a Java/C++ Program that can determine the factorial of a number **(10 marks)**