NED UNIVERSITY OF ENGINEERING AND TECHNOLOGY, KARACHI
MASTER OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY SPRING SEMESTER EXAMINATION -2008

Dated: 12-05-2008

Time: 3 Hours **Max Marks: 70**

OBJECT ORIENTED PROGRAMMING
(CT-492)

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Instructions:-

- Attempt all questions and start every question from fresh page.
- All questions carry equal marks.
- Use comments in every program and No pencil work.

Q-1 Write a C++ program to take user inputs in the form of first floating point number, an operator, and the second floating point number then perform following functions and display the result. [*addition, subtraction, multiplication, division, square roots, reciprocal of numbers]. As* it finishes the calculation, the program should ask the user to do another calculation. If the response is 'y' then the program should take another inputs otherwise if the response is 'n' then it should quit. [14]

Q-2 Create a structure called time in C++ with three member functions, hours, minutes and seconds, all type int. The program takes input from the user to enter a time value in hours, minutes and seconds in hh:mm:ss format. Each number is entered at a separate prompt. Enter Hours, Enter Minutes and Enter Seconds. The program should then store the time in a variable of type struct time, and finally print out the total number of seconds represented by this time value. [14]

Q-3 Write a function that, when called it displays a message telling how many times it has been called: "This function has been called x times". for instance. Write a main() program that calls this function at least 12 times. Implement this function in two different ways. [14]

(i) Use a global variable to store the count.
(ii) Use local static variable

Finally comment which one is more appropriate?

Q-4 Create a class that includes a data member that holds a 'serial number' for each object created from the class. That is, the first object created will be numbered 1, the second 2, and so on. To do this, you'll need another data member that record a count of how many objects have been created so far. This member should apply to the class as a whole; not to individual objects. What keyword specifies this? Then, as each object created, its constructor can examine this count member variable to determine the appropriate serial number for the new object. [14]

Q-5 Write a program in C++ to incorporate a class called 'queue' with two functions put() to store data and get() to retrieve data from the queue of size ten. For elements of queue use the table of seven. Hint: A queue is a data storage type similar to stack. The difference is that the structure of stack is LIFO while the structure of queue is FIFO. [14]