END TERM EXAMINATION

FOURTH SEMESTER [B.TECH] APRIL-MAY-2019

Paper Code: ETCS-210   Subject: Object Oriented Programming

(Batch-2013 Onwards)

Maximum Marks :75

Time : 3 Hours

Note: Attempt any five questions including question no.1 which is compulsory.

(2.5X10=25)

Q1   Attempt the following:-
(a) Explain the advantages of new operator over malloc0.
(b) Differentiate between C and C++.
(c) What is the use of inline member functions?
(d) Show the use of Mutable keyword with example.
(e) Why virtual destructors are used?
(f) What is the main difference between array of pointers and pointer to an array?
(g) Define static objects with example.
(h) Differentiate between static and dynamic binding.
(i) Define Reusability, how C++ supports Reusability?
(j) Explain the use of this pointer with example.

Q2   (a) What is inheritance? Give its various types and access mechanisms. What are the advantages of scope resolutor & referencing?   (8.5)
(b) Create a class A with data members B and C respectively. Include a function swap () to swap the values in the data members.   (4)

Q3   (a) What do you mean by an array of objects? Explain how members of objects can be accessed in array of objects with the help of C++ program.   (7.5)
(b) What are Destructors? Write a program to show the order in which objects are destructed.   (5)

Q4   (a) What is the difference between overloading and overriding of a function? Write a program in C++ to overload== operator and compare two objects using the operator.   (7.5)
(b) How to achieve dynamic memory allocation in C++? Explain with a program.   (5)

Q5   (a) How base class member functions can be invoked in a derived class if the derived class also has a member function with the same name? Explain with example. (8.5)
(b) Why do we need virtual function? When do we make a virtual function pure?   (4)

Q6   (a) What is generic programming? What are its advantages?   (5)
(b) Write a template based program for adding objects of the Vector class. Use dynamic data members instead for storing vector elements.   (7.5)

Q7   (a) Write a program to compute the square root of a number. The input values must be tested for validity. If it is negative, the user defined function my_sqrt0 should raise an exception.   (7.5)
(b) Write a program having STUDENT as an abstract class and create derived classes such as ENGINEERING, SCIENCE, MEDICAL, etc. from the STUDENT class. Create their objects and process them.   (5)

Q8   (a) Explain seekg(), tellg(), seekp(), tellp() functions in file handling with sample program.   (7.5)
(b) How garbage collection is handled in C++?   (5)

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