B.Tech. Degree III Semester Examination November 2013

CS/IT 1304 OBJECT ORIENTED PROGRAMMING
(2012 Scheme)

Time : 3 Hours   Maximum Marks : 100

PART A
(Answer *ALL* questions)

(8 x 5 = 40)

I. (a) Is C++ a better language? Justify.
    (b) Why do we need function declaration in a programme?
    (c) What is function overloading? Give an example.
    (d) Differentiate class and object with an example.
    (e) Draw the pictorial representation of different types of inheritance provided by C++.
    (f) What is an abstract class? Are they useful in object oriented software development?
    (g) What is binding? Define static and dynamic binding.
    (h) What is an exception? Write the syntax of exception handling code in C++. Explain the keywords used and the working.
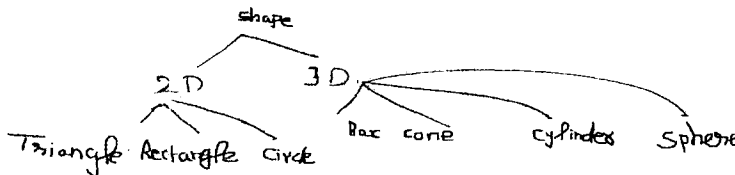
PART B

(4 x 15 = 60)

II.   Explain the key concepts of object oriented programming..   (15)

OR

III. What is the purpose of functions in a programme? Differentiate between function   (15)
definition, function declaration and function call with a suitable C++ code. How are
member functions defined in a C++ class?

IV.   Design the following classes with suitable data members and member functions   (5 x 3 = 15)

    (i)   Student
    (ii)   Employee
    (iii) Bank account
    (iv)   Library book
    (v)   Text file

[Draw the UML notation for classes and write the corresponding C++ code, for each
class]

OR

V.   Write a menu-driven programme in C++ with suitable class and members, to find the   (15)
sum of the specified row or column of a matrix of size $n \times m$. If the matrix is square
find the sum of the specified diagonal also.

VI.   Write short notes on: (3 x 5 = 15)

    (i)   Virtual base class
    (ii)   'New' and 'delete' operators
    (iii) Array of printers and pointer to array

OR

VII. (a) How is the concept of 'data hiding' implemented in C++? Give an example.   (5)
      (b) Implement the following class hierarchy in C++.   (10)

VIII. Write short notes on: (3 x 5 = 15)
    (i)   Templates
    (ii)   Virtual functions
    (iii) 'String' class in C++

OR

IX.   Assume there exists a text file "lang. txt" with content "C++ is a beautiful language".   (15)
Write a C++ programme to append the text "But many students find it difficult to learn
and programme in it" to this file. After appending the text, display the entire file in
forward and reverse order.

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