3E2074

B. Tech. (Sem. III) (Main & Back) Examination, January - 2013
Computer Engg. & Information Tech.
3IT4 & 3CS4 Object Oriented Programming

Time : **3** Hours]

[Total Marks : **80**
[Min. Passing Marks : **24**

*Attempt any **five** questions, selecting **one** question from each unit. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Use of following supporting material is permitted during examination. *(Mentioned in form No. 205)*

1. ____NIL_____   2. _____·NIL_____

UNIT - I

1   (a) Explain structure as a user defined data type in C with the help of suitable example.

4

(b) Write an interactive program which processes date of birth using structure.

4

(c) Explain following with their syntax :
(i)   Pointer to structure
(ii) Array of structure.   4+4

OR

1   (a) What is difference between structured programming and object oriented programming ?

8

(b) What is object oriented paradigm ? Explain the various features of object oriented paradigm ?

8

UNIT - II

2   (a)   What is class and object ? Describe the syntax for class and object specification with example. How does it accomplish data hiding ? Give an example.

6

      (b)   What is constructor ? How many types of constructors are in C++ ? Describe with the help of a suitable example.

6

      (c)   Explain the concept of inline function in C++. How it is beneficial in programming ?

4

OR

2   (a)   Explain mechanism of accessing a private data member of the class from a non member function and justify it with a program in C++ to swap private data members of two classes.

8

      (b)   Explain static data members and static member functions with suitable example.

8

UNIT - III

3   (a)   What is operator overloading ? State the rules to be followed for overloading operators.

6

      (b)   Write a program to overload unary (++) operator ? What are the limitations of overloading unary increment / decrement operator ? How are they overcome ?

10

OR

3   (a)   What is type conversion in C++ ? How it is achieved in user defined data types ?

8

      (b)   Write a C++ program to make a class named "string", which uses concept of operator overloading to concatenate two strings by (+) operator.

8

UNIT - IV

4 (a) What is inheritance ? What are the different forms of inheritance supported by C++ ? Explain each with suitable example.

8

(b) What is visibility mode ? What are different inheritance visibility modes supported by C++ ?

8

OR

4 (a) What is pure virtual function ? What are the implications of making function pure virtual function ?

8

(b) What are abstract classes ? Explain the role of abstract class while building the class hierarchy.

8

UNIT - V

5 (a) Explain the multiple inheritance with example.

8

(b) What is virtual base class ? When do we make a class virtual ? Explain with example.

8

OR

5 (a) What is generic programming ? How is it implemented in C++ ? Write a program to implement swapping using templates.

8

(b) Explain try, throw and catch constructs used in C++ with their syntax.

8