

**3E2074**

Roll No. : \_\_\_\_\_

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**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. rtuonline.com 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

