*Total No. of Questions : 5]* *[Total No. of Printed Pages : 3*

**Roll No** .....

# IT - 303

## B.E. III Semester

Examination, June 2015

## OOPs Methodology

***Time : Three Hours***

***Maximum Marks : 70***

***Note:*** i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each question are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max. 50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max. 400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

### Unit-I

1. a) Define Flow chart? Draw and explain different notation use in flow chart with their description?

   b) Explain the difference between structure and class?

   c) Why do we create class Hierarchy? Explain with example.

   d) Compare global, automatic and static objects? Write a program in C++ to demonstrate the creation and use of dynamic objects.

   Or

   Explain the meaning of polymorphism? How polymorphism is achieved at run time? Explain with an example.

## Unit-II

2. a) Define aggregation? Explain the various properties of aggregation?

   b) Explain the term attributes and methods in Class and Object?

   c) Explain recursive association by giving suitable example.

   d) What is static memory allocation and dynamic memory allocation? Explain one situation where dynamic allocation is preferred over static allocation of memory with suitable example.

   Or

   Describe different types of relationships between classes with example?

## Unit-III

3. a) Explain why there is need to define a function outside of class definition with an example?

   b) What do you mean by Access Specifier? Explain each of them in brief?

   c) Define friend function? Write a C++ Code to demonstrate use of Friend Function?

   d) What is parameter passing? Explain the different ways of parameter passing in a function with their advantages and disadvantages.

   Or

   Define the following terms:

   i) Links and association

   ii) Multiplicity









## Unit-IV

4. a) When do we use the protected visibility specifier to a class member? Justify your answer.

   b) In what order are the class constructor called when a derived class object created, explain with suitable example?

   c) Explain multipath inheritance by showing its example?

   d) What are container classes? Explain the difference between containership and inheritance with suitable example?

   Or

   The keyword **Virtual** can be used for functions as well as classes in C++. Explain the two different uses with example?

## Unit-V

5. a) Define inline function with its advantage and disadvantage?

   b) Define static data members of a Class. Also write their properties.

   c) Explain the method of exception handling in C++?

   d) What is operator overloading? Write a C++ program to overload binary '+' operator to concatenate two strings.

   Or

   What are generic classes? Why are they useful? Explain with the example how are they implemented in C++?

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