F 9338 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Fourth Semester

Branch : Computer Science and Engineering

OBJECT ORIENTED PROGRAMMING (R)

(2002 Admissions onwards—Supplementary)

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 4 *marks.*

1. Explain the effect of member functions in a class.
2. What does the concept of a class in object oriented programming convey ? What is the relation of object to classes ?
3. How does inheritance influence the working of constructors and destructors ?
4. What is containership ? How does it differ from inheritance ?
5. Explain the concept and applications of abstract class.
6. What is a friend function ? Discuss the advantages and disadvantages of using a friend function.
7. What is a virtual base class ? What are its uses ?
8. List the properties of constructor functions.
9. What is multithreading ? How does it improve the performance of Java ?
10. What is world wide web ? What is the contribution of Java to the world wide web ?

(10 × 4 = 40 marks)

Part B

Answer **either** *section (a)* **or** *(b) of each module.*
Each full question carries 12 *marks.*

Module 1

11. (a) (i) Differentiate between constructors and other member functions of a class. (7 marks)

(ii) Explain the use of copy constructor, with an example. (5 marks)

Or

(b) Write a C++ program that has a class called POINT which stores (*x, y*) coordinates. Define constructors, destructors and overload operator ' + ' to calculate distance between two points. (12 marks)

Turn over

Module 2

12. (a) (i) Differentiate between public and protected visibility in context of OOP, giving suitable examples for each. (8 marks

(ii) If a derived class does not add any data members to the base class, does the derived clas require constructors ? Explain. (4 mark

Or

(b) (i) What should be the structure of a class when it has to be a base class for other classes (6 mar

(ii) How does the visibility mode control the access of members in the derived class ? Expl with example. (6 mar

Module 3

13. (a) Write a program to implement an overloaded multiplication operator to return the factori an integer.

Or

(b) Explain virtual functions and their importance with an example program.

Module 4

14. (a) Explain the virtual base classes with appropriate examples. List its merits and applicat

Or

(b) (i) Define a function template to interchange the value of two data items. Use this fu to interchange the values of two integer numbers and two real numbers.

(ii) What are namespaces ? Illustrate its application with an example.

Module 5

15. (a) Write a program to implement a doubly-linked list using dynamic memory allocation.

Or

(b) Describe the structure of a simple Java program. Explain the various methods of comments in Java. ($5 \times 12 = 60$