Total No. of Questions : 10] [Total No. of Printed Pages : 4

Roll No. .....

CS–403(N)

B. E. (Fourth Semester)
EXAMINATION, June, 2011
(Computer Science & Engg. Branch)
OBJECT ORIENTED TECHNOLOGY
[CS–403(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : The question paper is divided into five Units. Each Unit carries an internal choice. Attempt *one* question from each Unit. Thus attempt *five* questions in all. All questions carry equal marks. Assume suitable data whenever necessary.

Unit–I

1. (a) Discuss the non-object oriented features of C++ with programming examples. Also state the merits and demerits of object oriented methodology. 7

   (b) Explain Inline functions and the situations where inline expansion may not work and why ? 7

   (c) What is the main drawback of structured programming ? How OOP address this issue ? 6

Or

2. (a) Define the following terms and give an example to show its realization in C++ : 10

   (i) Encapsulation

P. T. O.

(ii) Class variables and class functions

(iii) Repeated inheritance

(iv) Overloading

(b) What is the difference between register variable and automatic variable ? Explain with example. What are other storage classes for variables ? 10

Unit – II

3. (a) Discuss the advantages of scope resolution operator. Is it useful when the member data of a class whose member function is invoked in derived class is public or private ? 10

(b) Explain with example as to how would you be able to identify objects and classes in program. 10

Or

4. (a) Write a C++ program to convert the polar co-ordinates into rectangular co-ordinates. (hint : polar co-ordinates(radius, angle) and rectangular co-ordinates(x, y) where x = r*cos(angle) and y = r*sin(angle)). 10

(b) Discuss in brief the following : 10

(i) Association

(ii) Recursive association

(iii) Many to many association

(iv) Argument passing

Unit – III

5. (a) Discuss the role of inheritance in object oriented programming. What is public and private derivation ? 10

(b) Explain the concept of operator-overloading. Illustrate operator-overloading concept to concatenate strings. 10

Or

6. (a) Explain the meaning of polymorphism. How is polymorphism achieved at run time ? Explain with coding. 10

(b) Define a class Date with three variables for day, month and year. 10

(i) Overload the operators < <, > > to read and print Date object.

(ii) Overload > to compare two dates

Unit – IV

7. (a) Describe how can files be opended and closed explicitly in a program. 6

(b) Write a program which asks for a file name from the keyboard, opens a file with that name for output reads a line from the keyboard character by character and write the line onto the file. 7

(c) The keyword 'virtual' can be used for functions as well as classes in C+ +. Explain the *two* different uses. Give an example of each. 7

Or

8. (a) Explain the concept of streams in C+ + and give the hierarchy of different types of stream. 10

(b) Write a program to create a file to store the information "Data structure". In the same program, read the information in the created file. 10

Unit – V

9. (a) Explain method overloading and method overriding with giving suitable example. 5

(b) What is the need for and advantages of templates ? What is the difference between function templates and class template ? 5

(c) Write a program to read three numbers x, y and z and evaluate R given by :

$$R = z/(x - y)$$

Use exception handling to throw an exception in case division by zero is attempted. 10

Or

10. (i) Compare the features of C++ versus Java. 5

(ii) Define classes and methods in Java. 5

(iii) Explain the interface concepts in Java. 5

(iv) What is the purpose of package ? Name some packages. 5