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

Roll No. ....

CS–403(N)

B. E. (Fourth Semester) EXAMINATION, June, 2010

(New Scheme)

(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. (i) What is object oriented programming ? How does it differ from structured programming ? Discuss the characteristics of object oriented languages.   10

   (ii) Compare global, automatic and static objects. Write a program in C + + to demonstrate the creation and use of dynamic objects.   10

Or

2. (i) What is an object ? How object of two different classes can interact ? Give an example for it.   10

P. T. O.

(ii) Explain the following terms in object-oriented programming : abstract data types, visibility and information hiding, templates.   10

Unit – II

3. (i) What is Aggregation ? Explain its properties and various types.   7

(ii) What are the different elements of object model ? Explain.   6

(iii) Explain the following by giving suitable example :   7

   (a) Recursive association

   (b) Named association

Or

4. (i) Draw an object diagram to compute the interaction between students and teachers for course as per given time table. You are advice to choose descriptive self-explanatory class, attribute and association names.   8

(ii) Compare aggregation and inheritance. What are the properties of aggregations ?   6

(iii) What are the different kinds of relationship among classes ? Explain.   6

Unit – III

5. (i) How virtual inheritance removes the drawbacks of hybrid inheritance ? Write a program to demonstrate it.   10

(ii) Explain operator overloading with the implementation of complex numbers and its numeric operations addition, subtraction, multiplication and division.   10

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Or

6. (i) Discuss about the following :   8

    (a)   Method lookup

    (b)   Polymorphism

  (ii) When does ambiguity arise in multiple inheritance ? How can one resolve it ? Develop a program in C++ to create a derived class having the following items : Name, age, roll no, marks, empcode and designation. Design a base class student having data members as roll no, marks and the another base class is employee having data members as empcode and designation. These both base classes are inherited from a single base class person with data members name and age. The program should carry out the required input()and output() member functions for all.   12

Unit – IV

7. (i) What is Containership ? How does it differ from inheritance ?   8

  (ii) Write a program to create a database of the students information such as names, roll no and the program should have the following facilities :   12

    (a)   Adds a new record to the file

    (b)   Modifies the details of a record

    (c)   Displays the contents of the file

Or

8. (i) Define a stream. What are the three streams used for inputting, outputting and both for inputting and outputting ?   10

P. T. O.

[4]

(ii) Write a Java program to produce the following output : 10

A

B B

C C C

D D D D

The number of rows to be printed is read from the user.

Unit – V

9. (i) Explain how memory allocation failure can be handled in C + + ? 8

(ii) Defines interfaces in Java. How interfaces are implemented ? How can they be accessed ? How to apply interfaces ? What is menat by extension of interfaces ? Explain with an example. 12

Or

10. (i) What is the difference between the following in JAVA ? 12

(a) Static class, public class, and class with any keyword and static data member

(b) Static function and public function and public static function

(c) Keyword implements and keyword extends

(d) Abstract classes and concrete classes

Give one example in each case to illustrate the difference.

(ii) What is Unicode ? Why Java uses Unicode and not ASCII code ? 8

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