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Question Paper Code : 51377

B.E/B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Third Semester

Computer Science and Engineering

**CS 2203/CS 35/CS 1202/080230004/10144 CS 304 – OBJECT ORIENTED
PROGRAMMING**

(Common to Information Technology)

(Regulations 2008/2010)

**(Common to 10144 CS 304 – Object Oriented Programming for B.E. (Part-Time) First
Semester – CSE – Regulations 2010)**

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Define data abstraction.
2. Write a simple function that has default arguments.
3. When friend function becomes essential in an OOP environment ?
4. Which operators of C++ are not overloadable ?
5. Mention any two advantages of class templates.
6. Give a programming example for uncaught exception.
7. In a scenario of inheritances, when and how do you make a class, a virtual base class ?

8. What is cross casting ?
9. Mention any four file handling functions.
10. List four string operations found under standard string class of C++.

PART – B (5 × 16 = 80 Marks)

11. (a) (i) List and explain the major features of Object Oriented Programming. (8)
- (ii) Write a program using static members to count the number of objects created for a particular class. (8)

OR

- (b) (i) Write a program to find out the greater of two numbers using call by reference and return by reference method. (8)
 - (ii) What is nesting of classes ? Explain with an example. (8)
12. (a) (i) Write a program in C++ to overload + operator to add two objects of the class 'complex numbers'. (10)
 - (ii) Write a function that converts an object of one class to another class. (6)

OR

- (b) (i) Define a supplier class. Assume that the items supplied by any supplier are different and varying in number. Use dynamic memory allocation in the constructor to achieve the solution. (10)
- (ii) Write a function to copy a string to another using copy constructor. (6)

13. (a) (i) Write a program to implement quick sort as a generic function. (10)
- (ii) When do we need multiple catch blocks for a single try block ? Give an example. (6)

OR

- (b) (i) Explain the need of exception handling with proper examples. (10)
- (ii) Can a template class have static data members? Justify your answer. (6)

14. (a) (i) How could we achieve run-time polymorphism ? Give example. (6)
- (ii) Explain multiple inheritance with a programming example. (10)

OR

- (b) Define a class Student. Inherit this class in UGStudent and PGStudent. Also inherit Student into Local and non-Local students. Multiply inherit LocalUGStudent from Local and UG student. Define five LocalUGStudents with a constructor assuming all classes have a constructor. (16)

15. (a) Write a program to create a file containing students' performance in three tests; open the file to display its contents and then to add a student's information at middle of the file and finally display all the students' information starting from the first record. (16)

OR

(b) Write a program to read and generate a sequence of projects that are to be completed. Assume the project to be a string. Whenever a new project is inserted, it must be either in the beginning or at the end.

(16)

OR

(b) Define a class Student. Inherit this class in UGStudent and PGStudent. Also inherit Student into Local and non-Local students. Multiply inherit LocalUGStudent from Local and UG student. Define five LocalUGStudents with a constructor assuming all classes have a constructor.

OR