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**Fourth Semester B.E. Degree Examination, December 2010**  
**Object Oriented Programming with C++**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
at least TWO questions from each part.**

**PART - A**

- 1
  - a. State the important features of object oriented programming. Compare the object oriented system, with procedure oriented system. (08 Marks)
  - b. What is function overloading? Illustrate function overloading through add function which adds two integers, two float numbers. (06 Marks)
  - c. Explain the working of inline functions, with an example. (06 Marks)
- 2
  - a. What is a friend class? Illustrate friends as bridges. (10 Marks)
  - b. Explain: i) this operator ii) arrow operator. (05 Marks)
  - c. What are nested classes? (05 Marks)
- 3
  - a. What is a constructor? Explain different types of constructors. (08 Marks)
  - b. Explain new and delete operators used in dynamic memory allocation. (10 Marks)
  - c. What is a destructor? (02 Marks)
- 4
  - a. What is inheritance? Explain the different types of inheritance possible in C++. (10 Marks)
  - b. Write a C++ program to create a class STUDENT with data members USN, name and age. Using inheritance, create class UGSTUDENT having fields semester, fees and stipend. Enter data for at least 5 students and compute the semesterwise average age for UG students. (10 Marks)

**PART - B**

- 5
  - a. What is a virtual function? Explain with a suitable example. (10 Marks)
  - b. Write a short note on I/O stream classes, with hierarchy for C++ stream handling. (05 Marks)
  - c. What is a pure virtual function? Explain with an example. (05 Marks)
- 6
  - a. Distinguish between text and binary files. (05 Marks)
  - b. How are opening and closing of files handled in C++? (05 Marks)
  - c. Illustrate the overloading of ++ and -- operators. (10 Marks)
- 7
  - a. Write a program to add two complex numbers by overloading the + operator. Display the complex numbers by overloading << operator. (10 Marks)
  - b. Illustrate the overloading of new and delete operators. (10 Marks)
- 8
  - a. What is exception handling? How are exceptions handled in C++? (10 Marks)
  - b. Write short notes on :
    - i) RTTI
    - ii) Templates

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