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## Fourth Semester B.E. Degree Examination, December 2012

### Object Oriented Programming with C++

Time: 3 hrs.

Max. Marks: 100

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

#### PART – A

- 1 a. Explain any four characteristics of OOPs. (08 Marks)  
 b. What are the advantages of inline functions? Write a C++ program to find greater of 3 numbers using inline function. (06 Marks)  
 c. With syntax and example, explain necessity of function prototype. (06 Marks)
- 2 a. How friend functions are different from member function? Write a program to add two data members of different classes using friend function. (08 Marks)  
 b. Explain with a syntax and example the structure of C++ program. Write a c++ program to find average marks scored in three subjects using arrays of object. (08 Marks)  
 c. Explain the importance of static data member with an example. (04 Marks)
- 3 a. With syntax and example, explain dynamic memory management operators in C++. (04 Marks)  
 b. Explain the use of this pointer with an example. (04 Marks)  
 c. What are the characteristics of constructors? Define a class called distance with feet and inches as data members. Write a C++ program to add two distances by overloading constructors. (12 Marks)
- 4 a. What is a derived class? Explain with an example, the three ways in which a class can be inherited. (08 Marks)  
 b. Explain multiple and diamond shaped inheritance with an example. (08 Marks)  
 c. Explain how pointers are used in base and derived class with an example. (04 Marks)

#### PART – B

- 5 a. Differentiate between function overloading and function overriding. (04 Marks)  
 b. What is runtime polymorphism? How virtual functions are used to implement the run time polymorphism? Explain with an example. (10 Marks)  
 c. Write a note on I/O stream classes in C++. (06 Marks)
- 6 a. Explain any five file handling functions in C++. (10 Marks)  
 b. Explain the following manipulators:  
    i) Set w( )        ii) Set fill ( )        iii) Set precision ( ) (06 Marks)  
 c. What is operator overloading? List the operators that cannot be overloaded. (04 Marks)
- 7 a. Explain with syntax the operator ( ) function. (04 Marks)  
 b. Explain with an example, how to overload unary minus and binary + operators. (08 Marks)  
 c. Write a C++ program to compare two strings are equal or not by overloading == operator and display the result by overloading << operator. (08 Marks)
- 8 a. Define function templates. Discuss the need of function template, with a suitable example. (10 Marks)  
 b. Explain new style cast operators in C++. (10 Marks)

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