

C++ and Object Oriented

Paradigm

2008 November

Technology BCA

Semester 3

University Exam

Mangalore University

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**Credit Based Third Semester B.C.A. Degree Examination**  
**October/November 2008**

**C++ AND OBJECT ORIENTED PARADIGM**

Max. Marks : 80

Time : 3 Hours

**Note:** Answer any TEN questions from PART A and any ONE full question from each unit in PART B.

**PART A**

1. a) State the significance of using header file in a program. Give one example.
- b) What are the preprocessor directives? Explain.
- c) Explain the use of setw( ) and setfill ( ) manipulators.
- d) What is the purpose of the keywords public and private in the definition of a class?
- e) Differentiate between functions and member functions in C++.
- f) What are destructors? Give its characteristics.
- g) State any two problems encountered with structured programming.
- h) What do you mean by operator overloading? Give any two examples for this concept.
- i) Differentiate between base class and derived class.
- j) Give the significance of 'protected' access specifier.
- k) What is an abstract base class?
- l) Explain the usage of scope resolution operator. (10x2=20)

**PART B**

**UNIT-I**

2. a) List the features of object oriented programming.
- b) Explain with example different types of constants used in C++.
- c) Write a C++ program to check whether a given integer is positive, negative, or zero using ternary operators.
- d) Explain the different types of type conversions used in C++. (5+4+3+3)

**OR**

3. a) Explain the general structure of C++ program with an example.
- b) Write a C++ program to generate first 'N' prime numbers.
- c) Illustrate the usage of endl in C++.
- d) Evaluate the following expressions given that m=1, n=2, a=5, b=3, c=4  
 $k = ++a + b \% c;$   
 $n+ = --m / b * a;$  (5+4+2+4)

Contd... 2

UNIT-II

4. a) What do you mean by enumeration? Give an example program using this concept.  
 b) Explain the usage and syntax of for loop.  
 c) Explain the concept of function overloading using suitable C++ program example.  
 d) What do you mean by passing arguments by reference? Explain with an example. (4+4+4+3)

OR

5. a) Differentiate between while and do while loop with syntax and example.  
 b) What are inline functions? Specify its usage with the help of an example.  
 c) Explain with an example the concept of nesting of structures and how would you access its member?  
 d) Explain the various storage classes used in C++. (4+4+3+4)

UNIT-III

6. a) Write a C++ program to generate 'N' Fibonacci numbers using constructors and destructors.  
 b) Explain static data members and static member functions with an example each.  
 c) Explain the concept of array of objects with a suitable program. How do you access objects in an array? (5+5+5)

OR

7. a) Write a C++ program to perform addition, subtraction, multiplication of two complex numbers using the concept of objects and classes.  
 b) What is an array? Explain with an example how is it initialized and declared in C++.  
 c) List the characteristics of constructor functions. (6+4+5)

UNIT-IV

8. a) What are the drawbacks of operator overloading? Explain how they can be avoided during programming.  
 b) Write a C++ program to compare two strings using operator overloading.  
 c) Explain the concept of multilevel inheritance with a suitable program example. (5+5+5)

OR

9. a) Explain the concept of conversion between objects of different classes with an example.  
 b) What is containership? How does it differ from inheritance?  
 c) Assume that the class employee holds name and basic, class allowance holds hra, da, class deduction holds pf, tax. Using multiple inheritance derive class salary from the above three, with a field gross. Calculate net salary. Hra is 50% of basic if basic > 10000, otherwise 60% of basic, da is 45% of basic, pf is 10% of basic, tax is 3.5% of basic if basic > 12000 otherwise nil. (5+3+7)

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