Tilak Maharashtra Vidyapeeth, Pune

Bachelor of Computer Applications (BCA)

Internal Assignments(June 2009)

Subject: Object Oriented Programming Using C++(Theory)

Assignment No. 1 **Marks 20**

1. How do structures in c & c++ differ?
2. What is an array? How string array declared in C++? Write C++ code to accept / initialize and display the array content?
3. Explain the following terms with sample code: objects, classes, polymorphism and abstraction.
4. Explain access specifiers in details?
5. What is a friend function? What are its merits & demerits?

Assignment 2 **Marks 20**

1. What are the different types of constructor? Write its prototypes
2. Explain 'this' pointer with small program.
3. What does u mean by function overloading? When do we use it?
4. Explain a pure virtual function with proper example.
5. Classification of Inheritances with proper diagram and syntax.

Assignment 3 **Marks 20**

1. What is an exception? Explain with example 'catching all exception
2. What are streams? What are the stream classes? Explain its hierarchy?
3. Explain File pointers with proper syntax
4. Explain 'this' pointer with small program.
5. What are the situations where overloading function can be an ambiguity?

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(PRACTICAL)

Assignment No. 1

1. Write a program to print Pascal triangle
2. Calculate area of circle, square, rectangle, triangle using function Overloading.
3. Create Shape class, derive Triangle, Circle, Rectangle from base class Shape. Add get data (), disp _area () functions as member function of Shape. Make disp_area as virtual function in base class.
4. Perform addition, multiplication, subtraction of 2-D array using Operator Overloading.
5. Write a program to merge two arrays after eliminating duplicate elements.

Assignment No. 2

1. Write a program for row wise sort for a square matrix.
2. Write a program to find the area and perimeter of square and triangle by creating the class ' shape','square','triangle'and required data members and functions like inputvales(),area(),perimeter().
3. Design a Class 'Complex 'with data members for real and imaginary Part. Provide default and parameterized constructors and member Functions to get(), set, display(), add(), subtract(), multiply() and divide() two complex numbers.
4. Overload + operator for string concatenation.
5. Write a C++ program to compare strings (length wise) using '>', '<', '=" operator.

Assignment No. 3

1. Write a C++ program to perform operation on file data. Insert line, display contents, counts lines and words in a file.
2. Write a C++ program to show a main function can be friend function of a class
3. Write a C++ program to transfer the content of one text file to another using command line arguments.
4. Write a program that counts the no of digits in a given number. If an alphabet is entered instead of a number, the program should not terminate. It should display appropriate error message.(Exception Handling.)

5. Write a C++ program to accept and convert time from 24 hour to 12-hour clock. (Write class12 and class24)