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06CS44

Fourth Semester B.E. Degree Examination, Dec.09/Jan.10
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. What is cin and cout? Explain with examples. **(04 Marks)**

b. What is the function overloading? Write a program in C++ to overload the function add (S1, S2) where S1 and S2 are integers and floating point values. **(10 Marks)**

c. Explain the two different ways of defining member functions with example. **(06 Marks)**

2 a. Explain constant member function and mutable data members with example. **(06 Marks)**

b. What are friend classes? Explain with example. **(04 Marks)**

c. Write a C++ program to define a class called TIME with hour, minute and second as data member and read ( ), display ( ) and add ( ) as member functions. **(10 Marks)**

3 a. Explain how new and delete operators manage memory allocation and deallocation for arrays. **(05 Marks)**

b. Is overloading of constructor possible? Justify your answer with an example. **(10 Marks)**

c. How set-new-handler ( ) function is used to handle out of memory condition. **(05 Marks)**

4 a. What is the function over riding? Explain with a suitable example. **(05 Marks)**

b. What is inheritance? Explain the different kinds of inheritance with examples. **(10 Marks)**

c. In inheritance, explain the order of invocation of constructors and destructors with example. **(05 Marks)**

Part – B

5 a. Explain virtual function and write a C++ program to demonstrate dynamic polymorphism. **(08 Marks)**

b. Differentiate between virtual function and pure virtual function. **(04 Marks)**

c. Explain text and binary Input/Output. **(04 Marks)**

d. With general form, explain the following functions: i) getline ( ) ii) read ( ). **(04 Marks)**

6 a. Explain the following functions:
i) seekp ( ) ii) tellp ( ) iii) setw ( ) iv) setprecision ( ). **(08 Marks)**

b. Write a C++ program to create a class called a STACK using array of integers as data member. Implement the following operations by overloading + and – – operators:
i) S1 = S1+ element; where S1 is an object of the class STACK and element is an integer no to be push.
ii) S1 = – – S1; where S1 is an object of class STACK and – – operator pops the element.
Handle STACK EMPTY and STACK FULL conditions. Also display contents of stack, after each operation. **(12 Marks)**

7 a. What is operator overloading? Write a C++ program to compare two values representing distances in feet and inches, using overloading the operator >. **(10 Marks)**

b. Explain how to overload subscript [ ] and pointer-to-member –> operator. **(10 Marks)**

8 a. What is a class template? Explain with an example. **(08 Marks)**

b. What is exception handling? Explain try, throw and catch constructs in C++. **(08 Marks)**

c. Explain any four template class of Standard Template Library (STL). **(04 Marks)**

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