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06EC661

Sixth Semester B.E. Degree Examination, May/June 2010
Programming in 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 an object oriented programming? What are the advantages of OOP? **(06 Marks)**

b. What is meant by dynamic binding? How is it useful in OOP? **(04 Marks)**

c. Explain the following terms, with suitable examples:
i) Classes ii) Inheritance iii) Polymorphism
iv) Encapsulation v) Message communication. **(10 Marks)**

2 a. Explain the two ways of type conversion, using a suitable C ++ program. **(08 Marks)**

b. What is a pointer? Explain the difference between a pointer and a reference, with a suitable example. **(05 Marks)**

c. A motorcycle covers a distance of 45 km per liter of petrol consumption. The cost of petrol is Rs.30.00 per liter. Write a program in C++ to calculate the cost of petrol to travel a distance of 120 km. **(07 Marks)**

3 a. Compare and contrast the if-else statement with a conditional operator, using a C++ program. **(07 Marks)**

b. How does using name space standard statement performs? Explain its function and usage, with an example. **(07 Marks)**

c. Write a C++ program to find the sum of digits of a given number (minimum length is 5 digits). **(06 Marks)**

4 a. Write a simple C++ program to accept a string and counts the number of alphabets, digits and special symbols present in a given string. **(06 Marks)**

b. What is an inline function? Write the rules for inline function. Give an example for inline function. **(06 Marks)**

c. Explain the call-by-value and call-by-reference parameter passing methods, with an example of each. **(08 Marks)**

PART – B

5 a. What is an exception handling? What is the need for it? Name the different types of exceptions. **(08 Marks)**

b. Explain the meaning and syntax of a catch block and try block. **(04 Marks)**

c. Write a C++ program to illustrate the process of catching all uncaught exceptions thrown in a try block. **(08 Marks)**

6 a. With a simple C++ program, using a class, explain the terms: object, private, public, class member and friend function. **(10 Marks)**

b. Distinguish between a constructor and a destructor. Develop a program to implement overloaded constructors and show the corresponding output. **(10 Marks)**

7 a. What are new and delete operators? Write a C++ program to allocate memory to three integers. Use new and delete operators for allocating and deallocating memory. Initialize and display values. **(07 Marks)**

b. What is the use of operator overloading? Write a C++ program to add two complex numbers by overloading the operator +. **(08 Marks)**

c. Explain the mechanism of virtual function. **(05 Marks)**

8 a. What is the difference between multiple and multi-level inheritance? **(04 Marks)**

b. Explain what is meant by a class relationship, base class, derived class and protected members, with the help of examples. **(10 Marks)**

c. Combining the concepts of array and class, develop a C++ program to model a stack of computer memory. **(06 Marks)**

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