CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐   15EC562

Fifth Semester B.E. Degree Examination, Dec.2018/Jan.2019
Object Oriented Programming using C++

Time: 3 hrs.   Max. Marks: 80

Note: Answer any FIVE full questions, choosing
ONE full question from each module.

Module-1

1   a. What is C++? List the applications of C++.   (04 Marks)
    b. Describe the structure of a C++ program with an example.   (08 Marks)
    c. When do we use cascading of input/output operators? Give example.   (04 Marks)

OR

2   a. Write a C++ program to find the sum of digits of a given number.
       e.g If input number = 16738
       output is 25 i.e. 1 + 6 + 7 + 3 + 8.   (04 Marks)
    b. Explain the different types of expressions in C++. Give examples for each type. (any four)   (08 Marks)
    c. With an example, describe the purpose of new and delete operators in C++.   (04 Marks)

Module-2

3   a. Mention the restrictions posed by the complier on inline functions.   (04 Marks)
    b. Design a class 'triangle' containing data items 'base' 'height' and four member functions setdata( ), getdata( ), displaydata( ) and findarea( ), to set values to 'base' and 'height', to get the user input, to display and find area of triangle (i.e. ½ * base*height) respectively. Write the main function which creates the object and uses the members of the class.   (08 Marks)
    c. Discuss the different types of function overloading in C++.   (04 Marks)

OR

4   a. When do we use default arguments? State the rules that need to be followed while using default arguments.   (04 Marks)
    b. Draw a neat diagram and explain the process of memory allocation to objects in C++.   (06 Marks)
    c. Develop a C++ program to define two classes namely husband and wife that hold a private member 'salary' respectively. Calculate and display the total income of the family using friend function.   (06 Marks)

Module-3

5   a. How are constructors differ from member functions of a class?   (04 Marks)
    b. What is operator overloading? Give syntax and example. List the operators that cannot be overloaded.   (06 Marks)
    c. Explain the significance of friend functions to overload operators.   (06 Marks)

OR

6   a. Discuss the importance of dynamic constructors and destructor in a C++ class.   (08 Marks)
    b. Write a C++ program to add two complex numbers by overloading the + operator. Also overload << and >> operators for reading and displaying the complex numbers.   (08 Marks)

Module-4

7 a. What is inheritance? List its advantages. (04 Marks)
  b. Explain the visibility inheritance modes. Give an example. (08 Marks)
  c. Compare multiple inheritances with multilevel inheritance. (04 Marks)

OR

8 a. What is abstract class? Give an example. (04 Marks)
  b. Demonstrate the working of pointers as objects with a relevant example. (08 Marks)
  c. State the differences between virtual and pure virtual functions. (04 Marks)

Module-5

9 a. What is a data stream? Describe the hierarchy of file stream classes in C++. (08 Marks)
  b. Explain the following unformatted I/O functions : i) getline( ) ii) write( ). (04 Marks)
  c. Compare and contrast width( ) and setw( ). (04 Marks)

OR

10 a. How file opening and closing is done? What are the functions required for reading and writing data in a file. Explain with an example. (08 Marks)
  b. Create a C++ program to read a text file and find number of characters, words and lines in a file. (08 Marks)

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