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13MCA22

Second Semester MCA Degree Examination, Dec.2017/Jan.2018
Object Oriented Programming Using C++

Time: 3 hrs.,

Max. Marks: 100

Note: Answer any FIVE full questions.

- 1 a. Explain the salient features of object-oriented programming languages. (10 Marks)
 b. Write short notes on the following:
 (i) Enumerated data types. (10 Marks)
 (ii) Inline functions. (10 Marks)
- 2 a. What are the various parameter-passing mechanisms for functions? Explain each with an example. (10 Marks)
 b. What is a function template? Write a template based program to swap 2 variables. (06 Marks)
 c. Explain recursive functions with example. (04 Marks)
- 3 a. What is a copy constructor and discuss the difference between constructor and copy constructor? Explain it with an example. (10 Marks)
 b. Demonstrate the use of static member function with an example. (06 Marks)
 c. Explain the use of scope resolution operator. (04 Marks)
- 4 a. Define friend functions in C++ and discuss why are they used? Write a C++ program to create a class called COMPLEX and perform the addition of 2 complex numbers using friend function. (10 Marks)
 b. Write a C++ program to create a class called STRING and implement the following operators. Display the result by overloading the operator:
 (i) STRING S1 = "VTU" (ii) STRING S2 = "BELGAUM"
 (iii) STRING S3 = S1 + S2 (10 Marks)
- 5 a. What do you mean by inheritance? What are the classifications of inheritance? Explain how multiple inheritance is implemented in C++ with example. (12 Marks)
 b. What will be the visibility of private, public and protected data members when inherited by derived class? Explain with examples. (08 Marks)
- 6 a. Discuss the concept of pure virtual function, with an example. (08 Marks)
 b. Short notes on early and late binding. (04 Marks)
 c. Write a C++ program using files to seek a particular person in a file. (08 Marks)
- 7 a. What are I/O streams in C++? Give stream class hierarchy. (10 Marks)
 b. List out various modes of opening a file in C++. (06 Marks)
 c. Short notes on following:
 (i) Abstract classes (ii) Polymorphism (04 Marks)
- 8 a. What do you mean by exceptions and exception class, give its syntax and discuss about handling exceptions with an example program. (08 Marks)
 b. What are the various entities of STL? (04 Marks)
 c. What do you mean by lists? Discuss the member functions that can be used on lists with example program. (08 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.