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Third Semester B.E. Degree Examination, June/July 2017

Object Oriented Programming with C++

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer FIVE full questions, selecting at least TWO questions from each part.
2. Programs must be neatly documented.

PART – A

- 1
 - a. What is reference variable? Explain with an example and write a program to swap values of two variables using reference variable. (05 Marks)
 - b. Describe function overloading and write a program using overloaded function area to find area of circle, triangle and rectangle. (05 Marks)
 - c. What is an inline function? What is the advantage of having a function inline? Write a C++ program to find maximum of three integers using inline function maximum (). (05 Marks)
 - d. Illustrate with an examples, different data types supported by C++ language. (05 Marks)
- 2
 - a. What is data hiding? Write a C++ program to create a class complex, to add given two complex numbers and use following member functions, readData(), dispData() and computeData(). (05 Marks)
 - b. What are constructor and destructor? Can you overload constructor and destructor? Justify. (08 Marks)
 - c. What are static members of a class? Illustrate with an example and write a program to count the number of object created. (07 Marks)
- 3
 - a. What is friend function? Explain. Write a C++ program using Bridge friend function small() to find smallest of two numbers. (06 Marks)
 - b. What is generic function and template instantiation? Write a C++ program using generic function swap() to exchange values of two integers, doubles and characters, and prints the values before and after swapping. (07 Marks)
 - c. What is operator overloading? Why it is required? Write a C++ program to overload the operators '+' to add two complex numbers, '<<' to display complex numbers and '>>' to read complex numbers, using friend functions. (07 Marks)
- 4
 - a. What is inheritance? Explain the differences between the access specifier flags / visibility modes. (06 Marks)
 - b. Explain single inheritance and multiple inheritance with the suitable diagram and syntaxes. (08 Marks)
 - c. Write a C++ program to create a class called CSE (Name and USN) and using inheritance crate derived classes, UG (fee, stipend) and PG (fee, stipend) from it. (06 Marks)

PART – B

- 5
 - a. Explain constructor and destructor functions and how to pass arguments to constructors along with multilevel inheritance. (10 Marks)
 - b. What is virtual base class? Explain with the suitable diagram and program. (10 Marks)
- 6
 - a. What is runtime polymorphism? How to achieve it? With the suitable example program explain the same. (10 Marks)
 - b. Explain pure virtual function and abstract class with the suitable program. (10 Marks)
- 7
 - a. Explain input output manipulator with the suitable example. (10 Marks)
 - b. Explain file operations with examples. (10 Marks)
- 8
 - a. What is an exception? Explain exception handling options with an example. (10 Marks)
 - b. What is STL? What STL consists of? Explain in detail vector class. (10 Marks)

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