10CS36

Third Semester B.E. Degree Examination, June/July 2018
Object Oriented Programming with C++

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
atleast TWO questions from each part.

PART – A

1   a.   Consider i is an integer and write the value of i for following expressions :
        i)   i = 3 + 1/2*5
        ii) j = 5; i = j++;
        iii) i = (float) 1/2*5;   **(06 Marks)**
    b.   With an example, explain inline function and write its advantages and disadvantages.
                                                                                            (08 Marks)
    c.   What is function overloading? Write overloading function for swap operation to swap two integers and two floating point variables.   **(06 Marks)**

2   a.   Explain different ways of defining member function in a class.   **(06 Marks)**
    b.   What you mean by static data member? Write a program to count number of objects created to the class using class variable.   **(08 Marks)**
    c.   With example, explain overloading of constructor.   **(06 Marks)**

3   a.   With an example, explain dynamic object and their use.   **(06 Marks)**
    b.   What you mean by friend function. Define a class 'distance' having feet and inches as variables and 'show' is a member function that displays feet and inches. Write a friend function which overload '+' operator to add two distance objects.   **(08 Marks)**
    c.   Write a generic function for 'swap' operation and write a program to use this function.
                                                                                            (06 Marks)

4   a.   What is inheritance? Explain multilevel and multiple inheritance.   **(08 Marks)**
    b.   With example, explain ambiguity in multiple inheritance.   **(06 Marks)**
    c.   Consider a class is derived by 'private' access specifier. Discuss the visibility of base class variable and techniques to access base class variable by derived object.   **(06 Marks)**

PART – B

5   a.   Describe the order of constructor invocation in multilevel and multiple inheritance.
                                                                                            (08 Marks)
    b.   Explain the concept of 'Granting Access' in inheritance.   **(06 Marks)**
    c.   With a diagram, explain the need of 'virtual' base class.   **(06 Marks)**

6   a.   Explain pure virtual function and abstract class and also write the need of abstract class.
                                                                                            (08 Marks)
    b.   With example, show how derived object member function can be called through base class reference.   **(06 Marks)**
    c.   Explain early and late binding.   **(06 Marks)**

7 a. Write the output for following program.
```
#include < iomanip·h>
#include < iostream·h>
 int main( ){
     cout << hex << 110 << endl;
     cout << setfill('*') <<setw(10) <<123·0 << endl;
     bool b = true;
     cout << b << " " <<boolalpha <<b;
     return 0;
     }
```
(06 Marks)

b. Consider a student record consists of Roll_No, Name and Marks. Write a program to enter the given number of student records and place in a new file called 'test·txt' (Use C++ file handling classes). **(08 Marks)**

c. Explain following steam handling function :
    i) read( ) ii) seekg( ). **(06 Marks)**

8 a. Explain the general form of exception handling technique. **(08 Marks)**

b. Write a suitable program to 'catch' all type of exceptions thrown by a try block. **(06 Marks)**

c. Write a short note on 'List' class from STL. **(06 Marks)**

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