PROGRAMMING IN 'C++'

Time : Three Hours   Maximum Marks : 90

Note : Total *five* questions are to be attempted. Selecft **one** question from each section. Question No. 1 is compulsory.

Compulsory Question

1. (a) If x1 and x2 are two objects of class point, then distinguish the following two statements :

    point x2 (x1);   point x2 = x1;

    (b) Destructors never take any value, nor does it return any value.

    Justify it.

    (c) Why 'New' operator is more advantageous than calloc and realloc functions in C++ language ?

    (d) How template functions and classes eliminate code duplication for different types ?

    (e) Is it possible to make a 'catch' statement to catch all types of exceptions using ellipse as its argument?

    (f) What are Input and Output streams ?   6×3

SECTION-I

2. (a) Can constructor be declared in the private section of the class ? Support your answer with an example.

    (i) Default constructor

      (ii)   Overloaded constructor

      (iii) Parameterized constructor

  (b) Why destructors are called in the reverse order of its constructors invocation?   12,6

3. (a) Write a program in C++ language to demonstrate Hierarchical inheritance.

  (b) What is Function overriding ? Explain with an example.   9, 9

SECTION-II

4. (a) Wha tis Virtual base class ? Why do we need it ?

  (b) Write short notes on the following :

      (i)   Pure Virtual functions and its features

      (ii) Virtual destructor.   6,6,6

5. What is the role of 'Operator' function in type converstion? Convert a class X into basic datatype float using (a) type conversion function, and (b) constructor.   6,6,6

SECTION-IIII

6. (a) What is a class template ? Can class template be nested ? Support your answer with an example.

  (b) Write a function template to multiply two data of integer and float types using template.   9,9

7. What happens when an exception handling is carried out in Class object paradigm ? Explain the function of try, throw and catch.   18

SECTION-IV

8. (a) Describe how would you determine numbre of objects in a file. When do you need such informations ?

9 (a) What role does the iomanip file play ?

  (b) Explain the error handling functions and flags during file I/O opreations.   9,9