Exam. Code : 206602
Subject Code : 5210

M.Sc. (Bioinformatics) 2nd Semester

ADVANCE PROGRAMMING IN C++ & VISUAL BASIC

Paper—BI-522

Time Allowed—Three Hours] [Maximum Marks—75

Note :— Section-A is compulsory. Each part is of **1.5** marks. Attempt **ONE** question from each unit of Section-B. Each question is of **12** marks.

SECTION—A

1. What are different ways to declare and initialize object in VB 6.0 ?
2. What is parameterized constructor ? Give example.
3. How information/data hiding is related to encapsulation ?
4. Differentiate between static binding and dynamic binding.
5. What is polymorphism ? How it can be implemented ?
6. How are disadvantages of using inline functions ?
7. How many declarations and definitions a global variable can have ?

8. What is Msflexgrid ?
9. Which operators can't be overloaded and why ?
10. Why getline() is preferred over get() for inputting multiline strings ?

SECTION—B

UNIT—I

1. Differentiate between :—
   (a) Load and Show Function.
   (b) Methods and Event
   (c) Array and Dynamic array. 12
2. (a) Name four different cursor types in ADO. 2
   (b) Name four different locking types in ADO. 2
   (c) What are ADO objects ? Explain them. Provide a scenario using three of them to return data from database. 8

UNIT—II

3. (a) Does a class hold some memory space ? Give reasons. 2
   (b) What is new operator ? Explain how it is used with help of suitable example. 4
   (c) What is friend function ? Write a C++ program to implement friend function. 6
4. (a) How pass by reference is different from pass by value and pass by address (pass by pointer). Give suitable examples to support your answer. 6

(b) Differentiate between constructor and destructor. What are different types of constructors used in C++ ? 6

UNIT—III

5. (a) What is operator overloading ? Using the example explain the concept of overloading a unary operator. 6

(b) What is virtual base class ? Why are they needed ? 6

6. (a) What do you mean by inheritance ? Explain different types of inheritance. 6

(b) Differentiate between multi level and multiple inheritance. Does multiple inheritance leads to ambiguity ? Explain how ambiguity arises and how it can be removed ? 6

UNIT—IV

7. (a) What are virtual functions ? Can we declare a static function as virtual ? Give reasons. 4

(b) How pure virtual functions are different from normal virtual functions ? 4

(c) What are abstract classes ? How are they different from concrete classes ? 4

8. (a) What is file handling ? 4

(b) Write a program in C++ to read from a file. 4

(c) Write a program in C++ to write to a file. 4

UNIT—V

9. Explain :—

   (a) String manipulation using C/C++. 4

   (b) Bioinformatics using C/C++. 4

   (c) Database design using C/C++. 4

10. (a) What are data structure ? What are common operations that can be performed on these data structures ? 6

    (b) What is a queue ? What are its types ? Write a program that implements queue using linked list. 6