

(Time: $2\frac{1}{2}$ hours)

[Marks: 75]

Please check whether you have got the right question paper.

- N. B.: (1) All questions are compulsory.
 (2) Make suitable assumptions wherever necessary and state the assumptions made.
 (3) Answers to the same question must be written together.
 (4) Numbers to the right indicate marks.
 (5) Draw neat labeled diagrams wherever necessary.
 (6) Use of Non-programmable calculator is allowed.

1. Attempt any three of the following:**15**

- Write down advantages and disadvantages of procedure oriented language.
- Explain object oriented development.
- Write down benefits of using object oriented programming.
- Write a short note on Data abstraction and data encapsulation.
- Explain dynamic binding with example. Give proper example.
- What is inheritance? Explain with example the concept of multiple inheritances.

2. Attempt any three of the following:**15**

- What is friend function? Write a friend function to display mark sheet of the F. Y. B. Sc. IT student.
- What is class? Explain with example how objects are passed as argument to member function and objects are returned from member function.
- Write a C++ program to design a class - ***cours.e*** For reading and displaying the course information, the getInfo() and displayInfo() methods will be used respectively. The getInfo() will be private method. Write down C++ program to implement the class.
- What is inline function? Explain with example.
- What is use of constructor? Explain with example parameterized constructor.
- Write a C++ program to demonstrate the use of constructor and destructor.

3. Attempt any three of the following:**15**

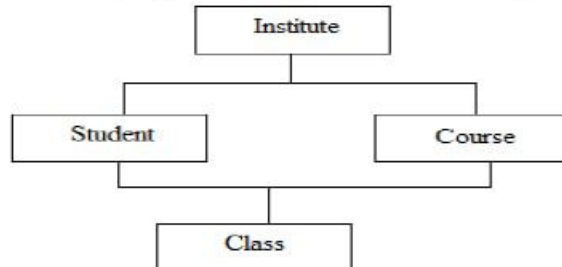
- What is function overloading? Explain with example.
- What is operator overloading? Write down the rules for operator overloading.
- How binary operators are overloaded? Write a C++ program to overload binary operator +.
- What is method overriding? Explain with example.
- Explain with example abstract class.
- Explain virtual destructor. Give suitable example.

[TURN OVER]

4. Attempt any three of the following:

15

- Can private members of a base class are inheritable? Justify.
- Explain with example multilevel inheritance.
- Explain how a base class is derived in public and private mode.
- Write a C++ program to implement following hierarchy.



- What is exception? Explain exceptions handling mechanism?
- What happen when raised exception is not caught by catch block? Explain with suitable example.

5. Attempt any three of the following:

15

- Explain with example how function templates are used.
- Explain how compiler calls to a class and function template.
- Write a C++ program which defines and uses student class template.
- What is file? Write down the steps for manipulating files in C++.
- Explain the hierarchy of file stream class.
- What are different methods of opening a file? Write a program to open file and enter student details into the file using any method.