22316

12425

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Illustrate your answers with neat sketches wherever necessary.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Use of Non-programmable Electronic Pocket Calculator is permissible.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any FIVE of the following : **10**

a) Write any four features of OOP.

b) Define constructor. List types of constructor.

c) Describe use of static data member.

d) Define and state the types of inheritance.

e) State any four rules for Virtual functions.

f) Define polymorphism with its types.

g) Define file with it's operations.

P.T.O.

Marks

2. Attempt any THREE of the following : **12**

a) State the use of scope resolution operator and explain it with example.

b) Write a C++ program to declare a class 'rectangle' with data members as length, breadth and area. Declare a function getdata to accept length and breadth and putdata to calculate and display area of rectangle.

c) Write a program to implement multiple inheritance as shown in following figure.

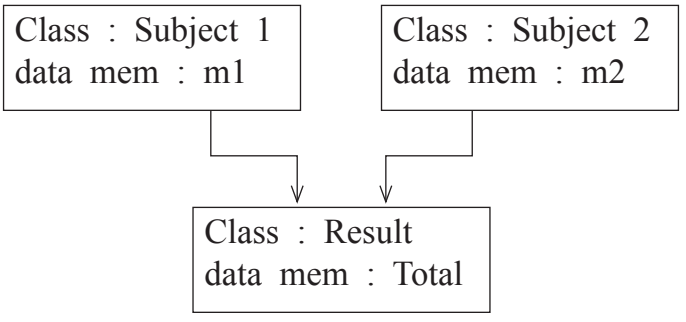

Fig. No. 1

d) Describe 'this' pointer with an example.

3. Attempt any THREE of the following : **12**

a) Explain structure of C++ program with diagram.

b) Write a C++ program to find greatest number among two numbers from two different classes using friend function.

c) Differentiate between compile time polymorphism and Run time polymorphism.

d) Write a C++ program to copy the contents of source file student 1.txt to a destination file student 2.txt using file operations.

Marks

4. Attempt any THREE of the following : **12**

a) Write a program to find whether the entered number is prime or not.

b) Write a C++ program to declare a structure employee with members as empid and empname. Accept and display data for one employee using structure variable.

c) Describe how memory is allocated to objects of class with suitable diagram.

d) Write a C++ program to overload binary operator '+' to concatenate two strings.

e) Explain virtual base class with suitable example.

5. Attempt any TWO of the following : **12**

a) i) State the use of an array.

ii) Write a program to accept array of five element, calculate and display the addition of element.

b) Define constructor with default argument with an example.

c) Write a C++ program to declare a class college with name and code. Derive a new class as student with members as name and enroll_no. Accept and display details of one student along with college data.

6. Attempt any TWO of the following : **12**

a) Write a C++ program to write 'Welcome to OOP' in a file. Then read the data from file and display it on screen.

b) State and explain the visibility modes used in inheritance with suitable diagram.

c) Write a C++ program to declare a class 'Account' with data members as accno. name and bal. Accept data for eight accounts and display details of accounts having balance less than 10,000.