**12425**

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

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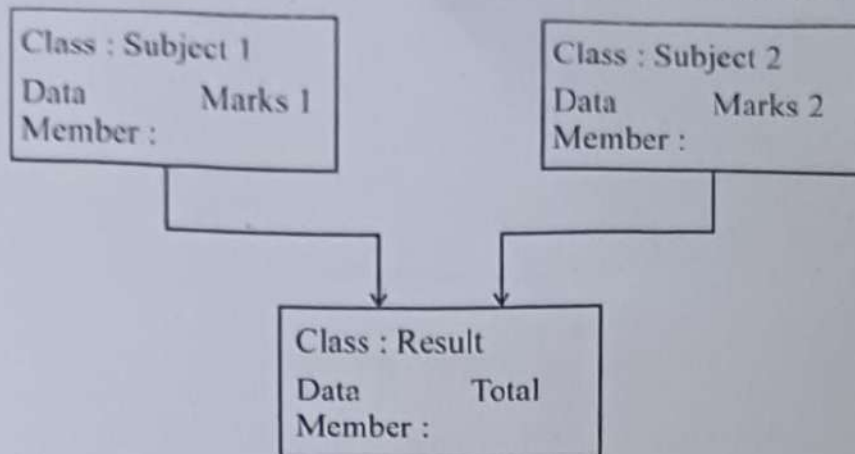
Marks

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

(a)   Define the following :

Object, Class

(b)   State any two characteristics of constructor.

(c)   State any two types of polymorphism.

(d)   State any two rules to define friends function.

(e)   Explain in brief abstract base class with example.

(f)   State any two rules for operator overloading.

(g)   State any two visibility modes.

2. Attempt any THREE of the following : 12

    (a) State scope resolution operator and memory management operator in C++. Give its use with suitable example.

    (b) With suitable example, explain how object can be used function argument.

    (c) Explain virtual base class with suitable example.

    (d) Explain pointer to derived class with suitable example.

3. Attempt any THREE of the following : 12

    (a) Explain different file opening modes with suitable example.

    (b) With suitable example, explain the difference between structure & class. Give four points.

    (c) Explain virtual function with suitable example.

    (d) List types of Inheritance. With suitable example, explain single inheritance.

4. Attempt any THREE of the following : 12

    (a) Explain constructor overloading. Give suitable program code in C++.

    (b) Explain insertion & extraction operator with suitable example.

    (c) With suitable example explain how file can be opened using constructor.

    (d) Give four points of distinction between OOP & POP.

    (e) Explain parameterized constructor with suitable code example.

5. Attempt any TWO of the following : 12

    (a) Write a program to define class 'staff' with datamembers, name, designation & experience in years. Accept data for five objects from the user. Display the name of staff who are manager.

(b) Write a C++ program to implement the following inheritance :



Accept & display data for two objects of class result.

(c) Write a program to create a class 'product' with datamembers price & product ID. Accept & display data for one object using pointer to object.

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

(a) Explain operator overloading. Write a program to overload binary ++ operator.

(b) Write a C++ program to show the use of multiple constructors in base class & single constructor in derived class. Create one object.

(c) Write a program to copy contents of ABC.txt to PQR.txt.

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