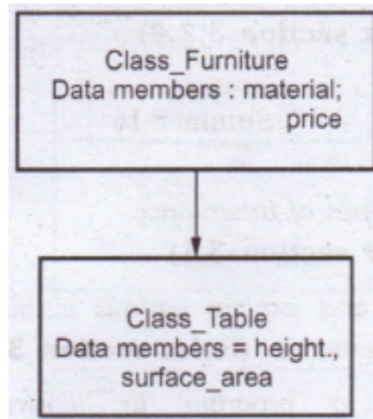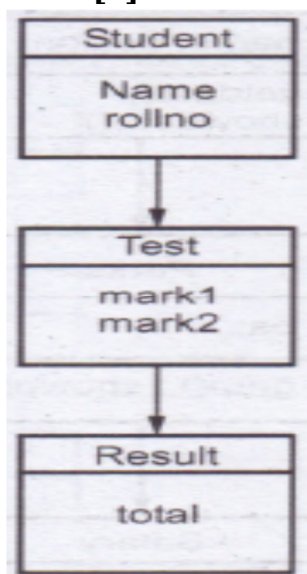# Unit-III
Extending classes using Inheritance

1. *Define inheritance and enlist it's types.* [2]
2. *Describe multiple inheritance with suitable example.* [4]
3. *Write* a *program* to *implement single inheritance from following Figure accept and display the data for one table* .[4]

```
┌──────────────────────────┐
│      Class_Furniture     │
│ Data members : material; │
│                    price │
└──────────────────────────┘
             │
             ▼
┌──────────────────────────┐
│        Class_Table       │
│  Data members = height., │
│       surface_area       │
└──────────────────────────┘
```

4. *Explain different visibility modes used* in *inheritance.* **[4]**
5. *Illustrate the hierarchical inheritance.* **[4]**
6. *Explain the concept of virtual base class with it's general syntax & suitable example.* **[8]**
7. *State 'different visibility modes used* in *inheritance.* **[2]**
8. *What* is an abstract *base class* ? **[2]**
9. *Write* a *program that illustrates multiple inheritance.* **[4]**
10. *Explain virtual base class* in *inheritance with suitable diagram.* **[4]**
11. *Explain single inheritance with program.* **[4]**
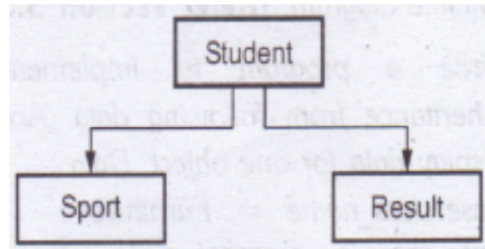12. *Identify the type of inheritance shown* in *following Fig.. Implement* it by *using suitable . member function.* **[8]**

```
┌──────────────┐
│   Student    │
├──────────────┤
│    Name      │
│    rollno    │
└──────────────┘
        │
        ▼
┌──────────────┐
│    Test      │
├──────────────┤
│    mark1     │
│    mark2     │
└──────────────┘
        │
        ▼
┌──────────────┐
│    Result    │
├──────────────┤
│    total     │
└──────────────┘
```

13. *State different types of inheritance with diagram.* **[4]**
14. *Give the types of inheritance for following diagram:* **[2]**
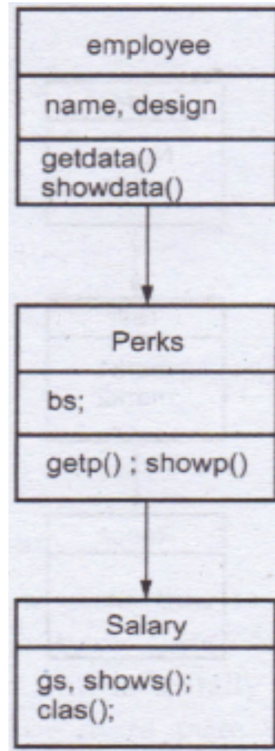
i)   ii)

15. Write a *program* to *show use of multilevel inheritance for following diagram* to *calculate the gross salary.* gs = bs + *0.5* * bs + *0.6* * bs; **[4]**

16. *Write a program* to *show use of Single inheritance.* **[4]**
17. *Explain hybrid inheritance with example.* **[4]**
18. *Differentiate between multiple inheritance and multilevel inheritance.* **[4]**
19. *Explain various types of inheritance with example.* **[8]**
20. *State different types of inheritances and describe anyone.* **[4]**
21. *How protected access specifier is different from private.* **[4]**
22. *What is Virtual Base class? Describe with suitable diagram.* **[2]**
23. *Write a program* to *implement single inheritance from following data.*
    Accept and display data for one object.
    Data : *Base class name = Furniture*
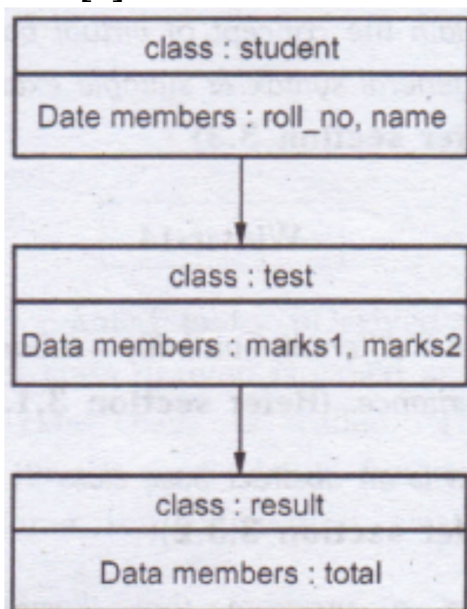   *Data* member = *material, price*
    Derived class name = Table
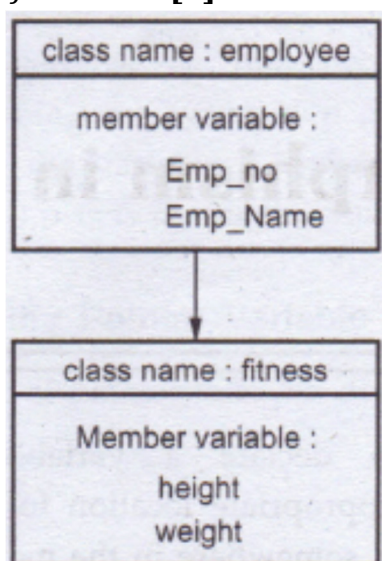   *Data-member = height, surface - area.* **[4]**
24. *How hierarchical inheritance is achieved, explain with example.* **[4]**
25. *List types of inheritance.* **[2]**

26. *State and explain various visibility modifiers in inheritance.* **[4]**
27. *Write a program* to *illustrate multiple inheritance. Write suitable data members and member functions.* **[4]**
28. *What is hybrid inheritance ? Give one example.* **[4]**
29. *Implement inheritance using following figure with member functions for reading and printing data.* **[8]**

```
┌────────────────────────────────────┐
│          class : student           │
├────────────────────────────────────┤
│  Date members : roll_no, name       │
└────────────────────────────────────┘
                 │
                 ▼
┌────────────────────────────────────┐
│           class : test             │
├────────────────────────────────────┤
│  Data members : marks1, marks2      │
└────────────────────────────────────┘
                 │
                 ▼
┌────────────────────────────────────┐
│          class : result            │
├────────────────────────────────────┤
│      Data members : total           │
└────────────────────────────────────┘
```

30. *What is an abstract base class.* **[2]**
31. *What is inheritance? Why inheritance used in* C++? **[2]**
32. *State different visibility modes used in inheritance.* **[2]**
33. *Explain multiple inheritance with suitable example.* **[4]**
34. *What is virtual base class? Explain with suitable example.* **[4]**
35. *Write* a *program* to *implement inheritance as shown* in *Figure given below* assume *suitable member functions.* **[4]**

```
┌────────────────────────────────────┐
│      class name : employee         │
├────────────────────────────────────┤
│        member variable :           │
│            Emp_no                  │
│           Emp_Name                 │
└────────────────────────────────────┘
                 │
                 ▼
┌────────────────────────────────────┐
│       class name : fitness         │
├────────────────────────────────────┤
│        Member variable :           │
│             height                 │
│             weight                 │
└────────────────────────────────────┘
```

36. Write a *program showing* use *of single inheritance.* **[4]**
37. *Explain* various types *of inheritance with example.* **[8]**
38. *Draw and explain multiple inheritance with suitable example.* **[2]**

39. *Write* a *program that illustrates multilevel inheritance.* **[4]**
40. *Explain abstract class with suitable example.* **[4]**
41. *Write* a *program* to *implement inheritance as shown* in *Fig. Assume suitable member function.*" **[4]**
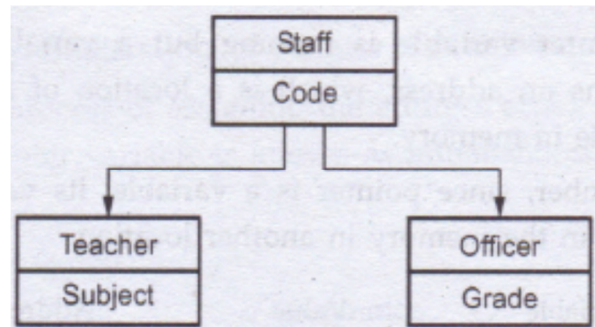
42. *Write* a *program* to *implement inheritance* as *shown* in *Fig. Assume suitable member function.* **[8]**
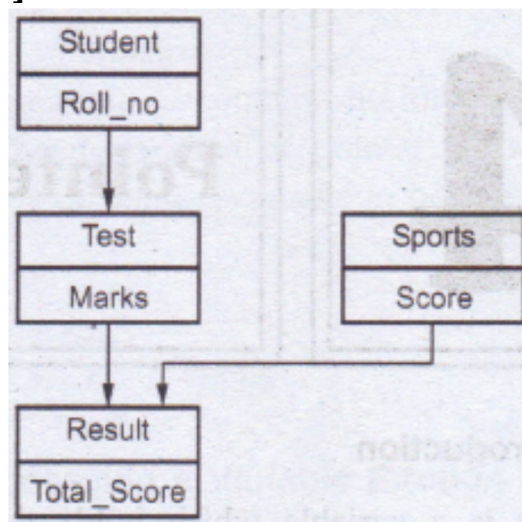
43. *State different types of visibility modes* in *inheritance.* **[2]**
44. *What* is *multiple inheritance? What* is *multilevel inheritance? What* is *difference between them?* **[2]**
45. *What* is" *base class? What* is *derived class? Give example.* **[4]**
46. *What* is *virtual base class? Explain with example.* **[4]**
47. *Explain hybrid inheritance with example.* **[4]**
48. *What* is *inheritance? What* is *use of inheritance? Explain.* **[4]**