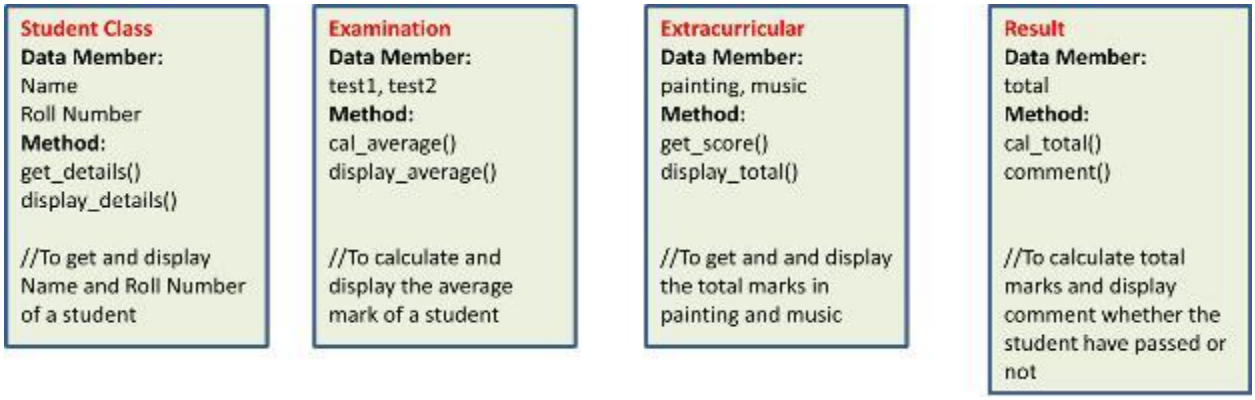
MCA Sem –II, 2020-2021
CSC26: Lab-III (OOP)

Assignment IV (Last Date: 18-6-2021)

1. Class **student** contains roll number, name and course as data members and *Input_student()* and *display_student()* as member functions. A derived class **exam** is created from the class student with **publicly inherited**. The derived class contains *mark1, mark2, mark3* as marks of three subjects and *input_marks()* and display_result() as member functions. Create an array of objects of the exam class and display the result of 5 students.
2. Result of a student is dependent on his/her examination marks and extracurricular marks. Create four classes ***Student, Examination, Extracurricular*** and ***Result***. The data members and methods of different classes are given below.



   Class Examination and Extracurricular are inherited from Student and Result is multiply inherited from Examination and Extracurricular. Write a program to generate the results for N students.
3. Class **polygon** contains data members- width and height and public method *set_value()* to assign values to width and height.

   Classes **Rectangle** and **Triangle** are inherited from **polygon** class. Both the classes contain public method ***calculate_area()*** to calculate the area of Rectangle and Triangle. Use base class pointer to access the derived class object and show the area calculated. Write a suitable program to illustrate virtual functions.
4. Write a program with ***Student*** as *abstract class* and create derive classes- ***Engineering, Medicine*** and ***Science*** from base class ***Student***. Create the objects of the derived classes and process them and access them using array of pointers of type base class Student. Include the relevant data members, constructors/destructors and member functions in each of the above classes.
