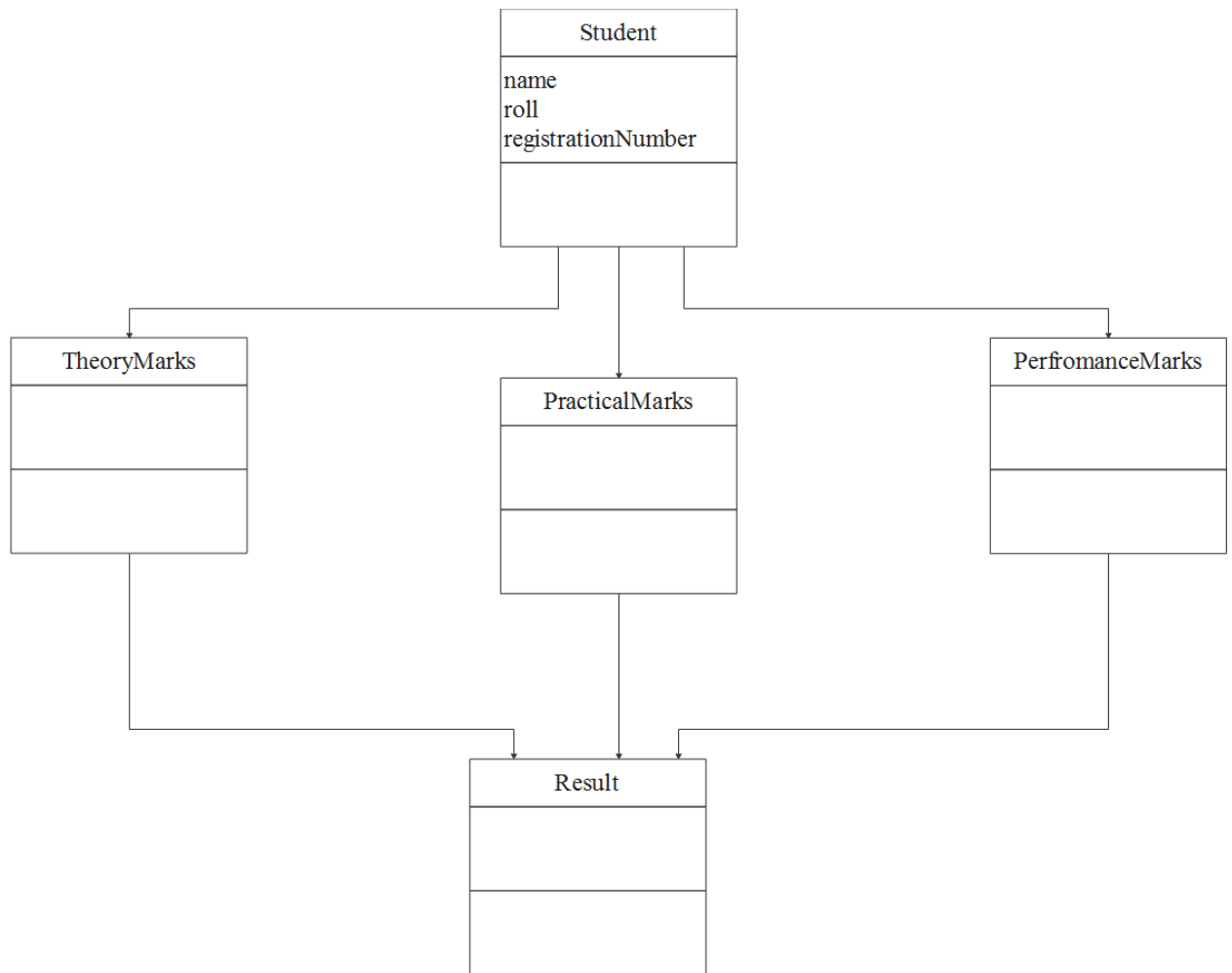# Nepal College of Information Technology
Object Oriented Programming in C++

1. In C++ programming programmer can use function in form of function overriding and function overloading. Normally, the above mentioned function should be enough to code most of the programs. Do you agree with previous statement? If not, what other kinds of functions can you remember will be useful for coders? And what kinds of problems will it solve.

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2. What are different concepts that will be used by you as a programmer in order to reuse codes and save your time in C++?

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3. What are different types of constructors? What are different scenarios in which different types of constructors are called? Explain with example program.

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4. You are asked to write a program for a banking system that keeps details of new customers and counts the numbers of customers. What concept will you use to count the number of customers? Explain with an example.

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5. Let us consider a situation where classes B and C are publicly derived from class A and class B is publicly derived from classes B and C. in this situation, the class D inherits properties form A twice. How is this situation soled? Explain with example.

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6. The following figure shows minimum information required for each class. Write a program by realizing the necessary member functions to read and display information of individual objects. Every class should contain at least one parameterized constructor.

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Student

name
roll
registrationNumber

TheoryMarks

PracticalMarks

PerfromanceMarks

Result

7. Both child class and its parent class have same function signature. Which version of function will be called by the object pointer of parent class that is pointing to the child class's object? Explain the reason. When do we need to use virtual function? Explain with example program.   10

8. Suppose you are a programmer, you are assigned a task to develop a software with all the requirements but the requirements doesn't include the data types of data structures to be used in classes and functions. As a programmer, you are not sure about the data types, how do you solve this issue and create a generalized classes and functions. Write an example program to support your answer.   10

9. Suppose you are the developer in a software company. You are assigned a task to develop a software for NCIT college that keeps the records of teacher   20

information, salary of teacher, student information and fee records of students.
Now answer the following
a. Identify the possible components
b. Draw CRC card for each component
c. Identify possible classes
d. Draw an interaction diagram to show the process-"salary payment of the teacher"

10. Explain "non-linear behavior of complexity". 5