Name: **Enrolment No:**	BML MUNJAL UNIVERSITY FROM HERE TO THE WORLD

Recourse Examination – July 2022

CSE 1008 – OBJECT ORIENTED PROGRAMMING USING C++

Programme: B.Tech. CSE **Semester: I**

Duration: 2 hrs. **Max. Marks:40**

Instructions:

- All Questions are compulsory.
- There is no overall choice.
- Answer all parts of the same question together

		Marks	CO &BL
1	a) Explain Polymorphism with suitable example. b) Write a program in C++ to add two objects using binary plus (+) operator overloading.	**[3+5]**	
2	a) We want to calculate the total marks of each student of a class in Physics, Chemistry and Mathematics and the average marks of the class. The number of students in the class are entered by the user. Create a class named Marks with data members for roll number, name and marks. Create three other classes inheriting the Marks class, namely Physics, Chemistry and Mathematics, which are used to define marks in individual subject of each student. Roll number of each student will be generated automatically. b) Explain Multiple Inheritance with suitable example.	**[5+3]**	
3	a) Define data abstraction with suitable examples. b) What is the significance of scope resolution operator (::) ? c) Define data members, member function, private and public members with example.	**[3+2+3]**	
4	Create a class called time that has separate int member data for hours, minutes, and seconds. One constructor should initialize this data to 0, and another should initialize it to fixed values. Another member function should display it, in 11:59:59 format. The final member function should add two objects of type time passed as arguments. A main() program should create two initialized time objects (should they be const?) and one that isn't initialized. Then it should add the two initialized values together, leaving the result in the third time variable. Finally it should display the value of this third variable. Make appropriate member functions const.	**[8]**	
5	Create a class that allows you to treat the 10 separate arrays in Exercise 10 as a single one-dimensional array, using array notation with a single index. That is, statements in main() can access their elements using expressions like a[j], even though the class member functions must access the data using the two-step approach. Overload the subscript operator [] (see Chapter 9, "Inheritance") to achieve this result. Fill the arrays with test data and then display it. Although array notation is used in the class interface in main() to access "array" elements, you should use only pointer notation for all the operations in the implementation (within the class member functions).	**[8]**	