Bahria University, Islamabad Campus

Department of Computer Science

Mid Term Examination

Class: **BSCS-II Section A and B**

(FALL 2020 Semester)

Course:	**Object Oriented Programming**	Date: 08-12-2020
Course Code:	CSC-210	Max Marks: 30
Instructors:	Imran Siddiqi/Saima Jawad	Time Allowed: 1½ Hours (1200 – 1330)

Instructions:

- Submit a **single PDF file** with complete solution of all problems.
- The exam is an individual effort and is assumed to be completed with academic honesty.
- **Plagiarism** (copying) is not tolerable and will be considered equivalent to cheating in a regular mid-term exam.
- Submission must be made on **LMS before the specified time.** Submission cannot be accepted through any other medium.
- Submitted solutions will be scored based on meeting the task requirements, usage of object-oriented concepts and adherence to good design.
- Write your full name and enrolment number on your submission.

Name: _____ Enroll No: _____

(USE CAPITAL LETTERS)

Question # 1 (20 Marks)

You need to design an object-oriented solution to display flight information in the departure lounge of an airport. For each flight, the information displayed on the board is the flight number, destination and, time and date of departure. In some cases, flights can be delayed. Use operator overloading to change the departure time of flights which are delayed. For simplicity assume that a flight is delayed by "m" minutes (where "m" is variable) and delaying the flight does not change the date of departure. Also include functionality in your solution that allows checking if a flight was delayed or not. (Hint: flight.isDelayed()?)

Draw a UML class diagram of your solution and implement the classes in C++. Test your solution by creating a flight, delaying the flight by 15 minutes, and displaying the flight data. The solution will be scored on usage of object-oriented concepts (composition, operator overloading etc.) and adherence to principles of good design (rather than simply providing an output).

Question # 2 (10 Marks)

Design a class to model a Rectangle using width and height. Provide functionality in the class to enlarge the rectangle by doubling its width and height. Overload an appropriate relational operator to compare the areas of two rectangles. Test the Rectangle class's functionality by creating, enlarging and comparing rectangle objects.

End of Question Paper