Quiz: 1

Task: 1   **CLO1**   **5 Marks**

Design a class called Time that stores time using three integers: hours, minutes, and seconds. The class should include member functions to:

1. **Set the time** using three integer values for hours, minutes, and seconds.

2. **Validate the time** ensuring:

   ○ Hours are between 0-23.

   ○ Minutes are between 0-59.

   ○ Seconds are between 0-59.

3. **Increment the time** by one second, adjusting minutes and hours if necessary.

4. **Display the time** in:

   ○ 24-hour format (e.g., 14:30:45)

   ○ 12-hour format with AM/PM (e.g., 02:30:45 PM)

5. **Retrieve individual components** (hours, minutes, seconds).

6. **Implement a copy constructor** to create a new Time object from an existing one.

7. **Implement a destructor** if any dynamic memory is used.

Private Members:

int hours, int minutes, int seconds

Task: 2   **CLO1**   **5 Marks**

Design a TestScores class that has member variables to hold three test scores. The class should have a constructor, accessor, and mutator functions for the test score fields, and a member function that returns the average of the test scores. Demonstrate the class by writing a separate program that creates an instance of the class. The program should ask the user to enter three test scores, which are stored in the TestScores object. Then the program should display the average of the scores, as reported by the TestScores object.