C++ Assignment-5

Question-1

Imagine a tollbooth with a class called **TollBooth**. The two data items are of type **unsigned int** and **double** to hold the total number of cars and total amount of money collected. A constructor initializes both of these data members to 0. A member function called **payingCar( )** increments the car total and adds 0.5 to the cash total. Another function called **nonPayCar( )** increments the car total but adds nothing to the cash total. Finally a member function called **display( )** shows the two totals. Include a program to test this class. This program should allow the user to push one key to count a paying car , and another to count a non paying car. Pushing the **ESC** key should cause the program to print out the total number of cars and total cash and then exit.

Question-2

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. A member function should display it in 11:59:59 format. A member function named **add()** should add two objects of type time passed as arguments. A **main ( )** program should create two initialized values together, leaving the result in the third time variable. Finally it should display the value of this third variable.

Question-3

Create class **SavingsAccount.** Use a static variable **annualInterestRate** to store the annual interest rate for all account holders. Each object of the class contains a private instance variable **savingsBalance** indicating the amount the saver currently has on deposit. Provide method **calculateMonthlyInterest** to calculate the monthly interest by multiplying the **savingsBalance** by **annualInterestRate** divided by 12.This interest should be added to **savingsBalance**. Provide a static method **modifyInterestRate** that sets the **annualInterestRate** to a new value. Write a program to test class SavingsAccount. Instantiate two savingsAccount objects, saver1 and saver2, with balances of

$2000.00 and $3000.00, respectively. Set annualInterestRate to 4%, then calculate the monthly interest and print the new balances for both savers. Then set the annualInterestRate to 5%, calculate the next month’s interest and print the new balances for both savers.