Assignment No: 03

Deadline: 4th November, 2019

Total Marks: 50

Note:

- Marks will be awarded on viva based
- Attach your **console output** for each question
- Submit only **hard copy**

Question No: 01 [10]

Write a C# program

Assume that a bank maintains two kinds of accounts for customers, one called as savings account and the other as current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed.

Create a class account that stores customer name, account number and type of account. From this derive the classes cur_acct and sav_acct to make them more specific to their requirements. Include necessary member functions in order to achieve the following tasks:

a) Accept deposit from a customer and update the balance.
b) Display the balance.
c) Compute and deposit interest.
d) Permit withdrawal and update the balance.
e) Check for the minimum balance, impose penalty, necessary and update the balance.
f) Do not use any constructors. Use member functions to initialize the class members.

Question No: 02 [10]

Write a C# program

Create a base class shape. Use this class to store two double type values that could be used to compute area of figures. Derive two specific classes called triangle and rectangle from the base shape. Add to the base a member function getdata() to initialize base class data member and another member function display_area() to compute and display the area of figures. Make display_area() as a virtual function and redefine it the derived class to suit their requirements.

Area of rectangle = x *y

Area of triangle = 1/2 *x*y

Question No: 03

Write a C# program

Create a class Rational Number (fractions) with the following capabilities:

a) Create a constructor that prevents a 0 denominator in a fraction, reduces or simplifies fractions that are not in reduced form and avoids negative denominators.

b) Overload the addition, subtraction, multiplication and division operators for this class.

Question No: 04 [10]

Write a C# program that creates a class called **laptop**. The data members of the class are brand (string), model (string), serial (int), colour (string), price (float), processor speed (float), RAM (int), screen size(float).

- Create a null constructor and initialize the class object
- Create a parameterized constructor that can set the values being passed from the main function
- Create member function that will set the individual values.
- Since the RAM can be upgraded therefore create a function that allows you to upgrade the RAM only.
- In the end, create a function that will display all the data members.

Question No: 05 [10]

Write a C# program that creates a class called number. Your class will have two data members namely num (float) and result (int). To find the factorial of the entered number you will need to design three functions as follows:

- Function to determine if a number is a whole number or not
- Function to determine if the number is positive or not
- Function to find the actual factorial
- Function to display the number and its factorial

Note: Remember that to find the factorial the number must of positive and a whole number. So if any of these conditions are not met then you cannot determine the factorial.