Q1) Write a program in C# to create a base class named '**Rectangle'** and a derived class named '**Tabletop'**. The base class have constructor to initialize private variables **length** and **width**, a method to calculate **area**, and a method to display **area**, **length**, and **width**. A derived class have constructor to initialize base class values**,** a method to calculate **cost,** and a method to display all values on base and derived class. A main class create object from derived class and display results.

……………..……………………………………………………………...…………….(**20** marks)

Q2) Answer a or b

a) Write a program in C# to create string indexer that store three elements. The elements' values are languages programming names ('C', 'C++', 'C#').

b) Write a program in C# to create a dictionary with string keys and integer values, adds 3 key-value pairs ('student' , 'scores'), checks if a specific key exists, updates the value of an existing key, prints all key-value pairs for students' scores passed.

……………..……………………………………………………………...…………….(**20** marks)

Q3) Write instruction or instruction**s** for **only five** of the following:

1- Defined a method named 'Calculation' to input two integer variable and output result that cannot accessed from other class.

2- Create a float array named 'Degree' has three elements with initialize values (2.5, 3, 8.5).

3- Sort integer array named 'Nums' in descending order by one instruction.

4- Defined a method named 'AnimalSound' in Derived class which is virtual in base class.

5- Initialize a generic class named 'DataStore' that has one generic type with one property named 'Data'.

6- Create a dictionary named 'Cities' (key is string and value is string) with one initialize element.

7- In ArryList collection named 'arList', remove two elements of start from the first item.

……………..……………………………………………………………...…………….(**20** marks)

Q4) Answer a or b

a) Write a program in C# to do the following:

1. Create new class with two private variables (first is float array with three elements, and second is integer number).

2. Add constructor to initialize variables values of class from keyboard.

3. Add two methods (first method for multiply integer number by float array elements and store result in same array, and second method for display array values).

4. Use main class for create object and implement methods.

b) Write a program in C# to do the following:

1- Create new class with two **private** variables (first is array of string for three names, and second is array of integer for three numbers).

2- Add constructor to initialize variables values of class from keyboard.

3- Add two methods (first method to calculate number of letter '**a**' on first string and store in first integer array element, and **so on for others**, and method second for display array values).

4- Use main class for create object and implement methods.

………………...……………………………………………………………………...…………….(**20** marks)

Q5) Write instruction or instructions for **only five** of the following:

1- Input integer variable named 'Prime' from keyboard.

2- Defined a method named 'Multiply' that receiving any number of float type as input to method and double type as output result.

3- Display elements of array named 'Thing' that has any type, any size, and any value.

4- Create a string property named 'Stage' that is write only type.

5- Define an enumeration class named 'Size' with three elements (Small ,Med, Large)their integer values (0, 5, 6).

6- Create a Generic Collections variable named 'Country' which has one type of variables at created.

7- Check if the input float data from keyboard is correct.

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