STAMFORD UNIVERSITY BANGLADESH

Department of Computer Science and Engineering
Midterm Examination, Summer 2022 Semester
MCSE 541: Web Computing and Mining
CT: Prof. Dr. Shamim Akhter
Date and Time: 27/08/22 & 10:00AM-12:00PM

Batch: MCSE   **Campus:** Siddeswari
Duration: 2 hours   **Full Marks: 30**

(Answer the following questions. Figures in the right margin indicate Course Learning Outcomes (CLO), Cognitive Levels(C), and Marks. Writing anything on the question paper is strictly prohibited.)

1.

a) Justify your position on the following statement: "ASP.NET framework supports cross-language interoperability and cross-platform". — CLO1, C2 [4]

b) ASP.NET core includes two hosting models: InProcess and OutOfProcess. OutOfProcess hosting requires two servers (IIS/IIS Express and Kestrel), whereas InProcess hosting executes an application on a single web server (IIS/IIS Express). — CLO2, C2 [4]
   - Specify two justifications for using two different web servers in OutOfProcess hosting.
   - Provide two specific justifications for selecting the Kestrel web server as the service provider.

c) In order to access an instance variable of a class, you have to make an object of that class. Accessing a class variable of the same class, on the other hand, doesn't have to make a new object of that class. Explain the rationale for such a distinction. — CLO1, C2 [4]

d) The Web Server generates HTTP answers in response to HTTP queries. Assume that the Web Server can only generate responses using Web API or Web Form frameworks. Explain the components, techniques, and implementation strategies of the two HTTP request-handling frameworks. — CLO2, C2 [4]

2. Give each component a score of Strongly Coupled, Mildly Coupled, or Weakly Coupled based on how well it is attached to the given frameworks. — CLO2, C4 [4]

	.NET Framework	.NET Core	ASP.NET Core
System.Web			
NuGet Packages			
IIS Express			
OWIN			
Web Form			

3.

a) The following C# program takes an input string into s and calls ReplaceSpaces () method to replace the space to hyphen of the given string. Your task is to modify the following program to apply a delegate based on Lambda Expression (anonymous method) in the place of ReplaceSpaces () method.   CLO1, C3   [5]

```
public class Program
{
    public static string ReplaceSpaces(string s)
    {
        Console.WriteLine("Replacing spaces with hyphens.");
        return s.Replace(' ', '-');
    }
}
public class Test
{
    public static void Main (String [] args)
    {
        string s= "Hello";
        Console.WriteLine(Program.ReplaceSpaces (s));
    }
}
```

b) Assume you have an Employee class that has a private string array called address. The array's size will be supplied as a parameter to the constructor during class instantiation and assigned to the array dynamically. Suppose we wish to retrieve the address of a specific employee based on the employee's "Id". Consequently, the next logical step would be to compose a function that fetches the address from the private array using the "Id" value as the array index. You can see the below codes to define the function.   CLO1, C3   [5]

```
Employee emps = new Employee ();
String ad=emp.getAddress(11);
```

If you use an indexer, you can simplify the above code with something as shown in the below code.

```
Employee Emps = new Employee ();
string o = Emps [11];
```

Your task is to implement the class by defining a public indexer to control the access to the address array from outside classes. Define the appropriate set and get accessors of the indexer to set and retrieve values from the array index represented by the employee's Id.

==== GOOD LUCK ====