

**2020**

Full Marks: 70

Time: As in the programme

The questions are of equal value.

**Answer all the questions.**

1. Write short notes on the following: - [4 x 3.5 = 14]
- (a) Common Language Runtime(CLR)
  - (b) Metadata and Assemblies in .NET
  - (c) WPF
  - (d) WCF

**OR**

Answer the following questions: [4 x 3.5 = 14]

- (a) Define properties in C#. Give an example.
  - (b) Describe the different loops in C# with examples.
  - (c) Define abstract class. Give an example.
  - (d) Write a C# program for reversing a string.
2. (a) Distinguish between HyperLink and LinkButton. Give examples for both HyperLink and LinkButton in support of your answer. Draw a neat and labeled diagram of the design of each example. Write the C# code and HTML code of each example. Also specify the properties you have changed. [10]
- (b) Explain with an example the role of display property in Validation Controls. Write the HTML code of your example. [4]

**OR**

Create an ASP.NET Web application that consists of an ImageButton, a TextBox, a ListBox, a Button captioned as 'CLEAR' and a Calendar control. The web application should have the following functionalities:

- (i) When the web page loads, the calendar should not be visible. Only the TextBox, ListBox, ImageButton and the 'CLEAR' Button are visible. Upon clicking the ImageButton, the calendar control is visible to the user.
- (ii) Whenever a date is selected from the calendar, the selected date is shown in TextBox and ListBox. But whenever a collection of dates are chosen from the calendar, the first date of the collection is shown in the TextBox and all dates including the first date of the same collection are shown in the ListBox.

- (iii) The dates that fall on weekends and the dates of other month should be disabled and should not be available to the user. The Backcolor of these dates should be 'Gray' and their forecolor should be 'White'.
- (iv) Whenever a month is changed in the calendar, the change should be displayed in the web page. For example, if the month changes from May to June then the message should be displayed as '**Month has been changed from May to June**'.
- (v) The 'CLEAR' button when clicked empties the TextBox and ListBox.

Write the C# code and draw a neat and labeled diagram of the design of the web application. [14]

3. (a) What do you mean by HttpHandlers and what are the methods and properties used to create HttpHandlers? Give a suitable example for HttpHandlers. [7]
- (b) Distinguish between Session state variables and Application state variables with suitable examples. [7]

**OR**

- (a) What is caching and what are its advantages? [3]
- (b) What is Output Caching? How cache dependency is helpful in improving the performance of Caching? [3]
- (c) Create an ASP.NET Web application that consists of a Web Form User Control. Register the Web Form User Control using Web.Config. The Web Form User Control consists of two Textboxes as TextBox1 and TextBox2, two Labels as Label1 and Label2 and a Button captioned as 'DISPLAY'. The TextBox1 and TextBox2 will take two numbers as input. When the 'DISPLAY' button is clicked, the number taken in TextBox1 and TextBox2 will be displayed in Label1 and Label2 respectively. Create a web form in the web application and use the above created Web Form User Control in the web form. Write the HTML code and C# code of Web Form User Control and the Web form. Draw a neat and labelled diagram of the design of Web Form User Control. [8]
4. (a) Explain the step by step procedure of creating and testing a web service. [7]
- (b) Explain the features and benefits of UDDI. [7]

**OR**

Create a Web Service in ASP.NET that acts as a Calculator consisting of the following operations, addition, subtraction, multiplication, division and modulus. Display different functions for different operations of the calculator in Web Service. Write the step by step procedure of consuming the Calculator Web Service that has been created by you. [14]

5. Write short notes on the following:

[4 x 3.5 = 14]

- (a) OLEDB
- (b) Microsoft SQL Server
- (c) ADO.NET
- (d) Hidden Field

**OR**

Create a database 'Product' and create a table 'ProductInfo' in the database 'Product'. The table 'ProductInfo' consists of 'ProdId', 'ProdName, and 'SaleYear'. Create an ASP.NET Web application that will have the following web form:

The diagram shows a web form with the following components:

- Three input fields: "Enter Product ID:", "Enter Product Name:", and "Enter Year of Sale:".
- Two buttons: "INSERT" and "UPDATE".
- Five navigation buttons: "FIRST", "LAST", "PREVIOUS", "NEXT", and "CLEAR".
- An input field: "Enter the ID of the Product to be deleted:".
- A button: "DELETE".
- A button: "RETRIEVE RECORDS".
- A container: "GRIDVIEW CONTROL".

Arrows indicate the following associations:

- TextBox1 points to the "Enter Product ID:" field.
- TextBox2 points to the "Enter Product Name:" field.
- TextBox3 points to the "Enter Year of Sale:" field.
- TextBox4 points to the "Enter the ID of the Product to be deleted:" field.

The web application should have the following functionalities:

- (a) 'INSERT' button will insert a particular record with the Product ID that is entered in TextBox1.
- (b) 'UPDATE' button will modify a particular record with the Product ID that is entered in TextBox1.
- (c) 'FIRST' button will take the user to the first record.
- (d) 'LAST' button will take the user to the last record.
- (e) 'PREVIOUS' button will take the user to the previous record of the current record.
- (f) 'NEXT' button will take the user to the next record of the current record.
- (g) 'CLEAR' button empties the TextBox1, TextBox2, TextBox3 and TextBox4.
- (h) 'DELETE' button will delete a particular record with the Product ID that is entered in TextBox4.

- (i) 'RETRIEVE RECORDS' will retrieve all the records from the database and will display them in GRIDVIEW CONTROL.

Write the required syntax for the creation of ProductInfo table in Microsoft SQL Server. Write the C# code for the web application to achieve all the above functionalities. Also write the syntax for registering the database connection in Web.Config.

[14]

**\*\*\*\*\*ALL THE BEST\*\*\*\*\***