SHEKHAWATI INSTITUTE OF TECHNOLOGY, SIKAR (RAJASTAHN)

Master of Computer Application (IV SEM)

I Midterm Exam 2018 (IV SEM MCA)

Subject Code & Name: MCA-402 & .Net Framework and Programming in ASP.Net

M.M:20 Time:1:30 Hour

Instructions for students

1. Question No. 1 is compulsory (5 Marks)
2. Attempt any five question from remaining 6 Question
3. Don't roll or tear answer sheet.
4. Write your ID before starting question paper.

Q.1 (i) what is CLR?

(ii) What is Metadata?

(iii) What is IDE?

(iv) What is Intermediate Language (MSIL)?

(v) What is the difference between VB and VB.Net?

Q.2 What are features of ASP.NET? Explain ASP.NET Application Life Cycle?

Q.3 What is Authentication and Authorization? And types of Authentication?

Q.4 (a). What is the difference between Session cookie and Persistent cookie?

(b). What is the difference between Custom Control and User Control?

Q. 5.What is ASP & ASP. NET? And the difference between ASP and ASP.Net.

Q.6 Explain the following

(i).NET (ii) visual basic (iii) New keyword (iv) CTS

Q.7 Explain basic controls available in ASP.NET.

*** Best of Luck***

Answer Q.1

(i).What is CLR?

CLR is abbreviated as Common Language Runtime and it forms heart of the .NET framework. It is the responsibility of runtime to take care of the code execution of the program. CLR takes care of the following:

- Garbage Collection
- Code Verification
- Code Access Security
- IL (Intermediate Language)

(ii). What is Metadata?

Metadata is termed as "Data about content of the data" and it is found in the catalog of libraries.

(iii). What is IDE?

An Integrated Development Environment (IDE) is software that facilitates application development. In the context of .NET-based applications, Visual Studio is the most commonly used IDE. Some of the key features included are:

- Single IDE for all .NET applications. Therefore no switching required to other IDEs for developing .NET applications
- Single .NET solution for an application which has been built on code written in multiple languages
- Code editor supporting Intellisense and code refactoring
- Compilation from within the environment based on defined configuration options
- Integrated debugger that works at source and machine level
- Plug-in architecture that helps to add tools for domain specific languages
- Customizable environment to help the user to configure the IDE based on the required settings
- Browser that is built-in within the IDE helps to view content from internet such as help, source-code, etc. in online mode.

(iv). What is Intermediate Langauge?

Microsoft Intermediate Language(MSIL or IL) is the CPU -independent instruction set into which .Net framework programs are compiled. It contains instructions for loading, storing initializing, and calling methods on objects.

(v). What is the difference between VB and VB.Net?

Following are the differences between VB and VB.Net:

VB	VB.Net
Platform dependent	Platform Independent
VB is backward compatible	VB.Net is not backward compatible
Interpreted	Compiler Language
Exception Handling by 'On Error…..Goto'	Exception Handling by 'Try….Catch'
Cannot develop multi-threaded applications	Can develop multi thread applications

Q.2 What are features of ASP.NET? and Explain ASP.NET Application Life Cycle?
Following are the features of ASP.NET:
HTML and XML both are based on Standard Generalized Markup Language (SGML), but ASP.NET has better language support.

- ASP.NET contains a large set of new controls that includes HTML controls, object–oriented input controls, grid controls etc.
- ASP.NET allows user accounts and roles making the task of authentication and assigning permissions quite easy.
- ASP.NET caches the compiled code in memory hence increasing performance.
- Configuring ASP.NET is quite easy.

The procedure of deploying applications in ASP.NET is very easy.

ASP.NET Application Life Cycle?

The ASP.NET Application Life Cycle refers to all the stages that occur when an ASP.NET application is run. A brief outline is as given below:
When a request for an application arrives at a web server, it is passed to the ASP.NET to serve the request.
ASP.NET creates the application domain for the application to isolate it from other applications.
All the top-level items in the application are compiled including the App _ Code folder.
ASP.NET core objects along with Request, response, and Context objects are created for the request.
The application is started by creating the Http Application object and Session handling mechanism.
Several events takes place to successfully manage the Request and Response of the application.

Q.3. What is Authentication and Authorization? And types of Authentication?

Authentication is the process of identifying users. Authentication is identifying/validating the user against the credentials (username and password) and Authorization performs after authentication. Authorization is the process of granting access to those users based on identity. Authorization allowing access of specific resource to user.

Types of Authentication are.
There are 3 types of Authentication. Windows, Forms and Passport Authentication.
Windows authentication uses the security features integrated into the Windows NT and Windows XP operating systems to authenticate and authorize Web application users.
Forms authentication allows you to create your own list/database of users and validate the identity of those users when they visit your Web site.
Passport authentication uses the Microsoft centralized authentication provider to identify users. Passport provides a way to for users to use a single identity across multiple Web applications. To use Passport authentication in your Web application, you must install the Passport SDK.

4(a). What is the difference between Session cookie and Persistent cookie?

Session Cookie :

Resides on the client machine for a single session until the user does not log out.

Persistent Cookie :

Resides on a user's machine for a period specified for its expiry, such as 10 days, one month and never. The user can set this period manually.

(b). What is the difference between Custom Control and User Control?

Custom Controls are compiled code (Dlls), easier to use, difficult to create, and can be placed in toolbox. Drag and Drop controls. Attributes can be set visually at design time. Can be used by Multiple Applications (If Shared Dlls), Even if Private can copy to bin directory of web application add reference and use. Normally designed to provide common functionality independent of consuming Application.

User Controls are similar to those of ASP include files, easy to create, can not be placed in the toolbox and dragged - dropped from it. A User Control is shared among the single application files.

5.What is ASP & ASP . NET? And the difference between ASP and ASP.Net.

ASP

Active Server Pages (ASP), also known as Classic ASP, is a Microsoft's server side technology, which helps in creating dynamic and user friendly Web pages.

It uses different scripting languages to create dynamic Web pages, which can be run on any type of browser.

ASP.NET

ASP.NET is a server side scripting technology that enables scripts (embedded in web pages) to be executed by an Internet server.

ASP.NET is a specification developed by Microsoft to create dynamic Web applications, Web sites and Web services.
It is a part of .NET Framework.
The ASP.NET compiles the Web Pages and provides much better performance than scripting languages, such as VBScript.
The Web Forms support to create powerful forms based Web pages.
ASP.NET Web server controls to create interactive Web applications with the help of Web server controls, you can easily create a Web application.

Difference between Classic ASP and ASP.Net?
ASP is Interpreted language based on scripting languages like Jscript or VBScript.
ASP has Mixed HTML and coding logic.
Limited development and debugging tools available.
Limited OOPS support.
Limited session and application state management.
ASP.Net is supported by compiler and has compiled language support.
Separate code and design logic possible.
Variety of compilers and tools available including the Visual studio.Net.
Completely Object Oriented.
Complete session and application state management.
Full XML Support for easy data exchange.

Q.6 Explain the following

(i) .NET (ii) visual basic (iii) New keyword (iv) CTS

(i) .NET

Answer: .NET is a Microsoft Framework and a software component. .NET has a large library of pre-coded solutions which provided developer significant help in developing applications with solutions already present. It offers reliable security and cross platform compatibility.

(ii) visual basic

Answer: Visual basic is associated with the IDE of Microsoft. It is basically useful to implement RAD of GUI. Creation of Active X scripts are very easy and efficient through VB. Windows API can also be used to create application on windows desktop and its applications. This was primarily designed to create applications for windows platform.

(iii) New keyword

Answer: New is used to initialize a new object. We sets a variable to any dattype with help of New keyword .The New keyword gives a value to the variable.We can also uses new keyword to initialize an object variable.
Example:- dim obj as new SqlDataAdapter.

(iv)CTS

CTS is Common Type System which is used to communicate smoothly between the languages. For example, if VB has Integer data type and C++ has long data type and these data types are not compatible. In order to be compatible, CTS can be used as an interface between two languages.

Q.7 Explain basic controls available in ASP.NET.

Button Controls

ASP.NET provides three types of button control:

- **Button** : It displays text within a rectangular area.
- **Link Button** : It displays text that looks like a hyperlink.
- **Image Button** : It displays an image.

When a user clicks a button, two events are raised: Click and Command.
Basic syntax of button control:

```
<asp:Button ID="Button1" runat="server" onclick="Button1_Click" Text="Click" / >
```

Common properties of the button control:

Property	Description
Text	The text displayed on the button. This is for button and link button controls only.
ImageUrl	For image button control only. The image to be displayed for the button.
AlternateText	For image button control only. The text to be displayed if the browser cannot display the image.
CausesValidation	Determines whether page validation occurs when a user clicks the button. The default is true.
CommandName	A string value that is passed to the command event when a user clicks the button.
CommandArgument	A string value that is passed to the command event when a user clicks the button.
PostBackUrl	The URL of the page that is requested when the user clicks the button.

Text Boxes and Labels

Text box controls are typically used to accept input from the user. A text box control can accept one or more lines of text depending upon the settings of the TextMode attribute.
Label controls provide an easy way to display text which can be changed from one execution of a page to the next. If you want to display text that does not change, you use the literal text.
Basic syntax of text control:

```
<asp:TextBox ID="txtstate" runat="server" ></asp:TextBox>
```

Common Properties of the Text Box and Labels:

Property	Description
TextMode	Specifies the type of text box. SingleLine creates a standard text box, MultiLIne creates a text box that accepts more than one line of text and the Password causes the characters that are entered to be masked. The default is SingleLine.
Text	The text content of the text box.
MaxLength	The maximum number of characters that can be entered into the text box.
Wrap	It determines whether or not text wraps automatically for multi-line text box; default is true.
ReadOnly	Determines whether the user can change the text in the box; default is false, i.e., the user can not change the text.
Columns	The width of the text box in characters. The actual width is determined based on the font that is used for the text entry.
Rows	The height of a multi-line text box in lines. The default value is 0, means a single line text box.

The mostly used attribute for a label control is 'Text', which implies the text displayed on the label.

Check Boxes and Radio Buttons

A check box displays a single option that the user can either check or uncheck and radio buttons present a group of options from which the user can select just one option.
To create a group of radio buttons, you specify the same name for the GroupName attribute of each radio button in the group. If more than one group is required in a single form, then specify a different group name for each group.
If you want check box or radio button to be selected when the form is initially displayed, set its Checked attribute to true. If the Checked attribute is set to true for multiple radio buttons in a group, then only the last one is considered as true.
Basic syntax of check box:

```
<asp:CheckBox ID= "chkoption" runat= "Server">

</asp:CheckBox>
```

Basic syntax of radio button:

```
<asp:RadioButton ID= "rdboption" runat= "Server">

</asp: RadioButton>
```

Common properties of check boxes and radio buttons:

Property	Description
Text	The text displayed next to the check box or radio button.
Checked	Specifies whether it is selected or not, default is false.
GroupName	Name of the group the control belongs to.

List Controls

ASP.NET provides the following controls

- Drop-down list,
- List box,
- Radio button list,
- Check box list,
- Bulleted list.

These control let a user choose from one or more items from the list. List boxes and drop-down lists contain one or more list items. These lists can be loaded either by code or by the ListItemCollection editor.

Basic syntax of list box control:

```
<asp:ListBox ID="ListBox1" runat="server" AutoPostBack="True" OnSelectedIndexChanged="ListBox1_SelectedIndexChanged">

</asp:ListBox>
```

Basic syntax of drop-down list control:

```
<asp:DropDownList ID="DropDownList1" runat="server" AutoPostBack="True" OnSelectedIndexChanged="DropDownList1_SelectedIndexChanged">

</asp:DropDownList>
```

Common properties of list box and drop-down Lists:

Property	Description
Items	The collection of ListItem objects that represents the items

	in the control. This property returns an object of type ListItemCollection.
Rows	Specifies the number of items displayed in the box. If actual list contains more rows than displayed then a scroll bar is added.
SelectedIndex	The index of the currently selected item. If more than one item is selected, then the index of the first selected item. If no item is selected, the value of this property is -1.
SelectedValue	The value of the currently selected item. If more than one item is selected, then the value of the first selected item. If no item is selected, the value of this property is an empty string ("").
SelectionMode	Indicates whether a list box allows single selections or multiple selections.

Common properties of each list item objects:

Property	**Description**
Text	The text displayed for the item.
Selected	Indicates whether the item is selected.
Value	A string value associated with the item.

It is important to notes that:

- To work with the items in a drop-down list or list box, you use the Items property of the control. This property returns a ListItemCollection object which contains all the items of the list.
- The SelectedIndexChanged event is raised when the user selects a different item from a drop-down list or list box.

The ListItemCollection

The ListItemCollection object is a collection of ListItem objects. Each ListItem object represents one item in the list. Items in a ListItemCollection are numbered from 0.

When the items into a list box are loaded using strings like: lstcolor.Items.Add("Blue"), then both the Text and Value properties of the list item are set to the string value you specify. To set it differently you must create a list item object and then add that item to the collection.

The ListItemCollection Editor is used to add item to a drop-down list or list box. This is used to create a static list of items. To display the collection editor, select edit item from the smart tag menu, or select the control and then click the ellipsis button from the Item property in the properties window.

Common properties of ListItemCollection:

Property	Description
Item(integer)	A ListItem object that represents the item at the specified index.
Count	The number of items in the collection.

Common methods of ListItemCollection:

Methods	Description
Add(string)	Adds a new item at the end of the collection and assigns the string parameter to the Text property of the item.
Add(ListItem)	Adds a new item at the end of the collection.
Insert(integer, string)	Inserts an item at the specified index location in the collection, and assigns string parameter to the text property of the item.
Insert(integer, ListItem)	Inserts the item at the specified index location in the collection.
Remove(string)	Removes the item with the text value same as the string.
Remove(ListItem)	Removes the specified item.
RemoveAt(integer)	Removes the item at the specified index as the integer.
Clear	Removes all the items of the collection.
FindByValue(string)	Returns the item whose value is same as the string.
FindByValue(Text)	Returns the item whose text is same as the string.

Radio Button list and Check Box list

A radio button list presents a list of mutually exclusive options. A check box list presents a list of independent options. These controls contain a collection of ListItem objects that could be referred to through the Items property of the control.

Basic syntax of radio button list:

```
<asp:RadioButtonList ID="RadioButtonList1" runat="server" AutoPostBack="True"
  OnSelectedIndexChanged="RadioButtonList1_SelectedIndexChanged">
</asp:RadioButtonList>
```

Basic syntax of check box list:

```
<asp:CheckBoxList ID="CheckBoxList1" runat="server" AutoPostBack="True"
  OnSelectedIndexChanged="CheckBoxList1_SelectedIndexChanged">
</asp:CheckBoxList>
```

Common properties of check box and radio button lists:

Property	Description
RepeatLayout	This attribute specifies whether the table tags or the normal html flow to use while formatting the list when it is rendered. The default is Table.
RepeatDirection	It specifies the direction in which the controls to be repeated. The values available are Horizontal and Vertical. Default is Vertical.
RepeatColumns	It specifies the number of columns to use when repeating the controls; default is 0.

Bulleted lists and Numbered lists

The bulleted list control creates bulleted lists or numbered lists. These controls contain a collection of ListItem objects that could be referred to through the Items property of the control.

Basic syntax of a bulleted list:

```
<asp:BulletedList ID="BulletedList1" runat="server">
</asp:BulletedList>
```

Common properties of the bulleted list:

Property	Description
BulletStyle	This property specifies the style and looks of the bullets, or numbers.
RepeatDirection	It specifies the direction in which the controls to be repeated. The values available are Horizontal and Vertical. Default is Vertical.
RepeatColumns	It specifies the number of columns to use when repeating the controls; default is 0.

HyperLink Control

The HyperLink control is like the HTML <a> element.

Basic syntax for a hyperlink control:

```
<asp:HyperLink ID="HyperLink1" runat="server">
  HyperLink
</asp:HyperLink>
```

It has the following important properties:

Property	Description
ImageUrl	Path of the image to be displayed by the control.
NavigateUrl	Target link URL.
Text	The text to be displayed as the link.
Target	The window or frame which loads the linked page.

Image Control

The image control is used for displaying images on the web page, or some alternative text, if the image is not available.

Basic syntax for an image control:

```
<asp:Image ID="Image1" runat="server">
```

It has the following important properties:

Property	Description
AlternateText	Alternate text to be displayed in absence of the image.
ImageAlign	Alignment options for the control.
ImageUrl	Path of the image to be displayed by the control.