**1) What is ASP.NET ?**

* ASP.NET is a Server-Side technology which uses object-oriented programming approach. Every element in ASP.NET is treated as an object and run on the server.
* ASP.NET allows you to use a fully featured programming language like C-Sharp (C#) or VB.NET to build web applications easily.

**2) What is Common Language Runtime or CLR ?**

CLR handles the compilation and execution of .NET programs. CLR uses JIT and compiles the IL code to machine code and then executes. Below are the list of responsibilities of Common Language Runtime -

* Garbage Collection
* Code Verification
* Code Access Security
* Intermediate language -to-native translators and optimizer’s

**3) What are Assemblies and Namespaces and explain the difference between them ?**

Namespaces are the containers for holding the classes. In Object Oriented world, it is possible that programmers will use the same class name. By using namespace along with class name this collision can be removed.

* An assembly exists as a .DLL or .EXE that contains MSIL code that is executed by CLR.
* An assembly contains interface and classes and it can also contain other resources like files, bitmaps etc.

**4) Describe the Events in the Life Cycle of a Web Application ?**

A web application starts, when a browser requests a page of the application for the first time. The request will be received by the IIS which then starts ASP.NET worker process. The worker process then allocates a process space to the assembly and loads it. An Application\_Start() event will fire on start of the application and it’s followed by Session\_Start(). ASP.NET engine then processes the request and sends back response in the form of HTML to the user and user receives the response in the form of page.

**5) Explain the application event handlers in ASP.NET ?**

Below are the event handlers in sequence of their execution -

* Application\_Start - Fired when the first user visits a page of the application or first resource is requested from the server.
* Application\_End - Fired when there are no more users of the application.
* Application\_BeginRequest - Fired at the beginning of each request to the server.
* Application\_EndRequest - Fired at the end of each request to the server.
* Session\_Start - Fired when any new user visits.
* Session\_End - Fired when the users stop requesting pages and their session times out.

**6) What are the Web Form Events available in ASP.NET ?**

Following are the Web Form Events in the sequence of their execution -

* Page\_Init
* Page\_Load
* Page\_PreRender
* Page\_Unload
* Page\_Disposed
* Page\_Error
* Page\_AbortTransaction
* Page\_CommitTransaction
* Page\_DataBinding

**7) What is Global Assembly Cache ?**

GAC (Global Assembly Cache) is used to share .NET assemblies. GAC will be used in the below scenarios –

* If the multiple application wanted to use the same assembly.
* If the assembly has security requirements. For example, if only administrators have the permission to remove the assembly.

**8) Explain the Server Control Events of ASP.NET ?**

ASP.NET offers many server controls like Textbox, Button Dropdown List etc. Each control will respond to the user’s actions using events and event handler mechanism. Following are the Server Control Events:

* Postback events - These events sends the web page to the server for processing. Once processing is finished, web page will send data back to the same page on the server.
* Cached events - These events are processed when a postback event occurs.

**9) What are Strong Names ?**

Strong names are unique names for assemblies. Strong name is similar as GUID in COM components. When we want to deploy the assembly in GAC, then we need to give the strong name for the assemblies. Strong name helps GAC to differentiate between two versions.

**10) Explain the steps to generate the strong name ?**

Go to Visual Studio Command Prompt

Type – “sn.exe –k “D:\TestingStrongName.snk” in command prompt.

Once SNK file is generated, sign the project with this SNK file. Go to project properties and browse the SNK file generated and build the project.

**11) What are the State Management options in ASP.NET ?**

**Client-side state management** - This maintains information on the client’s machine using either of the following options –

* Cookies - Cookie is a small sized text file on the client machine either in the client’s file system or memory of client browser session.
* View State - Each page and control on the page has View State property. This allows automatic retention of page and control’s state between each trip to server.
* Query string - Query strings can maintain limited state information. Data has been passed from one page to another with the URL, but you can send limited size of data with the URL.

**Server-side state management** - This mechanism retains state in the server. Below are the options to achieve it -

* Application State - The data stored in the application object can be shared by all the sessions of the application.
* Session State - Session State stores session-specific information and the information is visible within the session only.

**12) Explain the garbage collection in .NET ?**

Garbage collection is a CLR feature which automatically manages memory. CLR automatically releases objects when they are no longer used and referenced. Following methods are used for garbage collection –

GC.Collect()  
Dispose()  
Finalize()

**13) What is Reflection in .NET?**

Reflection is a mechanism through which types defined in the metadata of each module can be accessed. The System. Reflection namespace will have the classes required for reflection.

**14) Define Resource Files?**

Resource files contains non-executable data like strings, images etc. that can be used by an application and deployed along with it. You can change these data without recompiling the whole application.

**15) What are different types of caching using cache object of ASP.NET?**

We can use two types of output caching to cache information that is to be transmitted to and displayed in a Web browser –

* Page Output Caching
* Page Fragment Caching

**16) How can you cache different version of same page using cache in ASP.NET?**

Output cache functionality is achieved by using “*OutputCache*” attribute on ASP.NET page header. It uses following parameters –

* VaryByParam - Caches different version depending on input parameters send through HTTP POST/GET.
* VaryByHeader - Caches different version depending on the contents of the page header.
* **17) Explain the concept of Globalization and Localization?**
* Globalization is used to create a multilingual application by defining culture specific features like text, date etc. Localization is used to accommodate the cultural differences in an application.
* **25) Explain Web and Machine configs?**
* “Web.config” files apply settings to each web application, while “Machine.config” file apply settings to all ASP.NET applications. Basically “Machine.Config” at the machine level and “Web.Config” is at the application level.
* **26) Explain Session state management options in ASP.NET?**
* ASP.NET provides In-Process and Out-of-Process state management. In-Process will store the session in memory on the web server. Out-of-Process will store data in an external data source such as SQL Server or a State Server service. Out-of-Process requires that all objects stored in session are serializable.

**29) What is the difference between Authentication and Authorization?**

* Authentication is the process in which we are checking the identity of the user to allow the user into the application. So Login is the process of authentication for the application. Now social media authentication is also allowed in many websites to identify the user.
* Authorization sounds same as authentication but it is different. Authorization handles the permission stuff for the user at web page level. Better example will be if the user is authenticated in the website does not mean that user has full permission on all the pages so that can be controlled by authorization.

**30) What are the various ways of authentication techniques in ASP.NET?**

There are basically three types of authentication modes in ASP.NET –

* Windows Authentication – windows authentication uses our system credentials for the authentication purpose.
* Forms Authentication – This is a form based authentication. Login Control in ASP.NET supports this kind of authentication.
* Passport Authentication - Passport authentication lets you to use Microsoft’s passport service to authenticate users of your application.
* **39) What is Custom Control in ASP.NET?**
* Custom controls are compiled code, which makes them easier to use but difficult to create one. Once you have created the control, we can add it to the Toolbox and display it in a visual designer. We can deploy custom control in GAC and can be shared between the applications. This is either extended from Control/WebControl class.
* **40) What is User Control in ASP.NET?**
* User controls are easy to build, but they are less convenient to use in complicated scenarios. User controls are developed in the same way as we develop Web Forms pages in the visual designer. User controls can handle execution events.
* **41) What’s a bubbled event?**
* When you have a complex control, like GridView, writing an event processing routine for each object like cell, button, row, etc. is tedious. The controls can bubble up their event handlers, allowing the main GridView event handler to take care of its constituents.
* **43) What is the basic difference between ASP and ASP.NET?**
* The basic difference between ASP and ASP.NET is that, ASP.NET is compiled whereas ASP is interpreted whereas. This implies that since ASP mainly uses VBScript, when an ASP page is executed, it is interpreted. On the other hand, ASP.NET uses .NET languages, such as C# and VB.NET, which are compiled to Microsoft Intermediate Language (MSIL).
* **44) In which event, controls will be fully loaded?**
* Page load event guarantees that all controls are fully loaded. Controls are accessed in Page\_Init event, but you will see that view state is not fully loaded during this event.
* **45) What is the difference between a default skin and a named skin?**
* The default skin is applied to all the Web server controls in a Web form and it does not provide a Skin ID attribute. The named skin provides an attribute Skin ID and users have to set the Skin ID property to apply it.

**48) In ASP.NET how many types of cookies are there?**  
  
There are two types of cookies -

* **Session cookie** - A session cookie goes away when the user shuts the browser down.
* **Persistent cookie** - This resides on the hard drive of the user and is retrieved when the user comes back to the Web page.
* **55) Why do you use the App\_Code folder in ASP.NET?**
* App\_Code folder is part of ASP.NET folders. It stores any type of objects like text files, classes or reports. Advantage of App\_Code folder is that if multiple classes or objects been added into this folder it creates a single dll for all.

**60) What are the difference between Web server and Web Service?**

* Web Server is the one which gives the response to all the requests of the clients. Client can use either HTTP, SOAP protocols for request. Web Server is a computer and it turns to be a server once server software is installed. Every Web Server will have its domain possibly.
* Web Services are one of the components of Web Server which is callable from client side. Client will call the Web Service by making HTTP or SOAP requests. ASP.NET allows to create a custom Web Services which is in turn called from client side.

**81) What is the use of Global.asax ? and explain the events in Global.asax ?**

It allows to executing ASP.NET application level events and setting application-level variables.

* Application\_Init
* Application\_Disposed
* Application\_Error
* Application\_Start
* Application\_End
* Application\_BeginRequest
* Application\_EndRequest
* Application\_PreRequestHandlerExecute
* Application\_PostRequestHandlerExecute
* Applcation\_PreSendRequestHeaders
* Application\_PreSendContent
* Application\_AuthenticateRequest
* Application\_AuthorizeRequest
* Session\_Start
* Session\_End

**90) What is the sequence of methods called during page load?**

* **Init()** – This method will be used to Initialize the page.
* **Load()** – This method loads the page in server memory.
* **PreRender()** – This method is before page loaded to the user.
* **Unload()** – This method runs once loading of the page finished.
* **147) How do you decide on when to go for caching?**
* In case in our application, we need to store large amount of data and if it is the master data (which does not change most often) then we can use caching for storing this data.  
    
  **148) What is the role of CSS in web pages in ASP.NET?**
* Cascading Style Sheet (CSS) is used to style the pages or controls which is visible to the user. CSS can be created in .css files and can be included this in our web pages.
* **149) What does mean Stateless?**
* Stateless mean, if the entity does not remember its previous state. HTTP is stateless protocol because it does not remember its old state (request) done. For this stateless feature ASP.NET provides state management options like Session, Cookies, Viewstate etc.
* **153) Is it possible to use javascript from codebehind files in ASP.NET?**
* Yes we can register the javascripts from codebehind files like below –
* Use method - Page.RegisterStartupScript() or use Page.RegisterClientScriptBlock().