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Department of Computer Science and Engineering

OAD1651- WEB TECHNOLOGY (QUESTION BANK)

UNIT I

PART A

1. Define web client,webpage and website.

- A web client, often simply referred to as a client, is a program or software application that accesses services or resources on the internet via the Hypertext Transfer Protocol (HTTP) or other related protocols.
- A webpage, or web page, is a single page within a website. So, any individual part of a website that you access is considered a webpage.
- A collection of web pages which are grouped together and usually connected together in various ways. Often called a "website" or a "site." A computer that hosts a website on the Internet. A web service that helps you find other web pages, such as Google, Bing, Yahoo, or DuckDuckGo.

2. What is web server?

A web server is a software application or program that runs on a computer and serves web pages, content, or resources to clients over the internet or a local network. It handles requests from clients, such as web browsers or mobile apps, and responds by sending the requested data, typically in the form of HTML documents, images, videos, or other types of files..

3. Tabulate the difference between internet and intranet.

Feature	**Internet**	**Intranet**
Accessibility	Publicly accessible worldwide	Limited access within an organization
Scope	Global	Localized
Security	Focus on external security measures	Emphasis on internal security
Purpose	Information sharing globally	Internal communication and collaboration

4.Point out the difference between websites and web server.

Websites are collections of web pages accessible over the internet, while a web server is a computer or software that hosts and delivers these web pages in response to user requests.

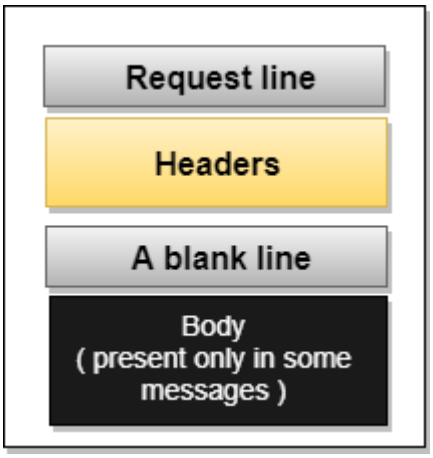
5. Outline the purpose of HTTP (Hypertext Transfer Protocol).

The purpose of HTTP (Hypertext Transfer Protocol) is to facilitate communication and transfer of hypertext (text with hyperlinks) between clients and servers over the internet.

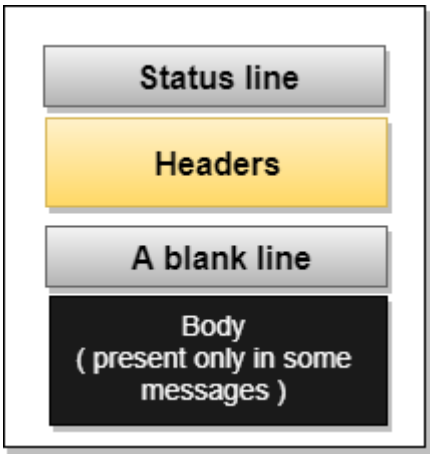
6.List the features of HTTP.

- **Connectionless protocol:** HTTP is a connectionless protocol. HTTP client initiates a request and waits for a response from the server. When the server receives the request, the server processes the request and sends back the response to the HTTP client after which the client disconnects the connection. The connection between client and server exist only during the current request and response time only.
- **Media independent:** HTTP protocol is a media independent as data can be sent as long as both the client and server know how to handle the data content. It is required for both the client and server to specify the content type in MIME-type header.
- **Stateless:** HTTP is a stateless protocol as both the client and server know each other only during the current request. Due to this nature of the protocol, both the client and server do not retain the information between various requests of the web pages.

7. Draw the HTTP request message.



8. Draw the HTTP response message.



9. Discuss about URL.

- **Method:** The method is the protocol used to retrieve the document from a server. For example, HTTP.
- **Host:** The host is the computer where the information is stored, and the computer is given an alias name. Web pages are mainly stored in the computers and the computers are given an alias name that begins with the characters "www". This field is not mandatory.
- **Port:** The URL can also contain the port number of the server, but it's an optional field. If the port number is included, then it must come between the host and path and it should be separated from the host by a colon.
- **Path:** Path is the pathname of the file where the information is stored. The path itself contain slashes that separate the directories from the subdirectories and files.

10.When users enter URL address, into a web browser, assess how the specific document retrieved from a web server?

When users enter a URL into a web browser, the browser sends a request to the corresponding web server. The server processes the request, retrieves the specific document associated with the URL, and sends it back to the user's browser for display.

11.Show the structure of HTML5.

The structure of HTML5 typically includes a document type declaration (<!DOCTYPE html>), opening and closing <html> tags, <head> and <body> sections, and various elements like <header>, <nav>, <section>, <article>, <footer>, etc.

12.Tell about difference between HTML and XHTML.

HTML (Hypertext Markup Language) is more lenient and forgiving, allowing for errors, while XHTML (Extensible Hypertext Markup Language) is stricter, adhering to XML rules, requiring well-formed documents, and introducing stricter syntax and rules.

13.Define element and attribute in HTML.

Element:An HTML element is a fundamental building block of web pages. It consists of a starting tag, content, and an ending tag. Elements can enclose other elements, forming a hierarchical structure known as the Document Object Model (DOM). Each element represents a specific type of content or defines a structural or semantic meaning within the document.

Example:

This is a paragraph element.

In this example:

 is the starting tag.

This is a paragraph element. is the content.

 is the ending tag.

Common HTML elements include , , <h1> to <h6> (for headings), <a> (for links), <img> (for images), <table> (for tables), <form> (for forms), and many more.

Attribute:An HTML attribute provides additional information about an element and modifies its behavior or appearance. Attributes are specified within the starting tag of an element and consist of a name and a value, separated by an equals sign (=). Attributes are optional and may vary depending on the element they are applied to.

Example:

<img src="example.jpg" alt="Example Image">

In this example:

src is the attribute name.

"example.jpg" is the attribute value.

alt is another attribute name.

"Example Image" is its value.

Common HTML attributes include id, class, href (for hyperlinks), src (for specifying the URL of media files), alt (for alternative text for images), style (for inline CSS styling), type (for specifying input types in forms), value (for setting default values in form elements), and many others.

14.Classify different table tags.

Various table-related HTML tags include <table>, <tr> (table row), <th> (table header), <td> (table data), <thead>, <tbody>, <tfoot>, and <caption>.

15.Define CSS and list the features.

CSS (Cascading Style Sheets) is a style sheet language used for describing the look and formatting of a document written in HTML or XML. Features include selectors, properties, values, inheritance, and the ability to control layout, colors, and fonts.

16.Name the three ways of inserting a style sheet.

Style sheets can be inserted using the <link> tag in the HTML <head>, the <style> tag within the HTML document, or inline styles applied directly to HTML elements using the style attribute.

17.Classify the need for cascading style sheet.

1. Inline CSS
2. Internal CSS
3. External CSS

18.How to add audio and video in HTML?

Adding Audio:

<audio controls>

<source src="audio.mp3" type="audio/mpeg">

```
  Your browser does not support the audio element.
</audio>
```

Explanation:

The <audio> element is used to embed audio content in the document.

The controls attribute adds playback controls (play, pause, volume, etc.) to the audio player.

The <source> element is nested within the <audio> element to specify the audio file's source and MIME type. You can include multiple <source> elements to provide fallback options for different browsers or audio formats.

Inside the <audio> element, you can provide alternative content (e.g., a message or a link) that will be displayed if the browser does not support the <audio> element.

Adding Video:

```
<video controls width="480" height="270">
  <source src="video.mp4" type="video/mp4">
  Your browser does not support the video element.
</video>
```

Explanation:

The <video> element is used to embed video content in the document.

The controls attribute adds playback controls (play, pause, volume, etc.) to the video player.

The width and height attributes set the dimensions of the video player.

Like the <audio> element, the <source> element is used to specify the video file's source and MIME type. You can include multiple <source> elements for different browsers or video formats.

Alternative content can be provided inside the <video> element for browsers that do not support the <video> element.

19.Create simple code snippets for inline style sheet.

```
<p style="color: blue; font-size: 16px;">This is a paragraph </p>
```

20. List some CSS text property.

Different types of style sheets include inline styles, internal styles (defined in the <style> tag within the HTML document), and external styles (linked to the HTML document using the <link> tag).

- font-family: Specifies the font family for text.
- font-size: Sets the size of the font.
- font-style: Defines the style of the font (normal, italic, oblique).
- font-weight: Sets the weight of the font (normal, bold, bolder, lighter, etc.).
- color: Sets the color of the text.
- text-align: Aligns text horizontally (left, right, center, justify).
- text-decoration: Adds decoration to text (underline, overline, line-through, none).
- text-transform: Transforms the text (uppercase, lowercase, capitalize, none).
- line-height: Sets the height of a line of text.
- letter-spacing: Adjusts the space between characters.
- word-spacing: Adjusts the space between words.
- text-indent: Specifies the indentation of the first line of text.
- text-shadow: Adds shadow effects to text.
- white-space: Defines how white space inside an element is handled (normal, nowrap, pre, etc.).
- overflow-wrap: Specifies whether or how to break lines within words to prevent overflow.
- word-break: Determines how words break when reaching the end of a line.
- font-variant: Controls the use of alternate glyphs, such as small caps or ligatures.
- font-size-adjust: Adjusts the font size relative to the x-height of the font.

PART B

1. Explain the functionalities of Webserver and Webclient in detail.
2. Express the information provided by URL.
3. Describe the structure of the HTTP request and response message.
4. Examine the enhanced features in HTML 5.0 with a neat example.
5. Describe how to create a following tags in detail with syntax and examples.

- Image
- Hyperlink
- List tag
- Table
- Favicon

- Audio,video
- Semantic elements

6. Describe the core syntax of CSS with the help of some suitable example.
7. Classify the three ways of applying CSS to HTML documents with appropriate example.
8. List and explain in detail the types of selector strings.
9. Explain the text and background property in CSS.
10. Build a HTML Registration form and Login using form elements.

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UNIT II

PART A

1. **Difference between var and let keyword in javascript.**
   - From the very beginning, the 'var' keyword was used in JavaScript programming whereas the keyword 'let' was just added in 2015.
   - The keyword 'Var' has a function scope. Anywhere in the function, the variable specified using var is accessible but in ‘let’ the scope of a variable declared with the 'let' keyword is limited to the block in which it is declared. Let's start with a Block Scope.
   - In ECMAScript 2015, let and const are hoisted but not initialized. Referencing the variable in the block before the variable declaration results in a ReferenceError because the variable is in a "temporal dead zone" from the start of the block until the declaration is processed.
2. **Define DOM.**

   The DOM, or Document Object Model, is a programming interface for web documents. It represents the structure of HTML or XML documents as a tree-like structure, allowing scripts to dynamically access, manipulate, and update the content and structure of web pages.
3. **Give any four methods of Date objects.**

   1. **getDate()**: Returns the day of the month.
   2. **getMonth()**: Returns the month (0-11).
   3. **getFullYear()**: Returns the year.
   4. **getHours()**: Returns the hour.
4. **What are the types of pop up boxes available in JavaScript?**

I.Alert Box: The alert() method displays a modal dialog box with a message and an OK button.

II.Confirm Box:The confirm() method displays a modal dialog box with a message, OK button, and Cancel button.

III.Prompt Box:The prompt() method displays a modal dialog box with a message, an input field for the user to enter text, and OK and Cancel buttons.

5. **Can you list the different methods defined in document and window object of JavaScript.**

   1. Document Object:

- getElementById()
- getElementsByClassName()
- getElementsByTagName()
- createElement()

2. Window Object:
   - alert()
   - confirm()
   - setTimeout()
   - setInterval()

6. Write javascript code to display your name.

```
<html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<title>Display Name and Department</title>
</head>
<body>

<script>
  // Define variables for your name and department
  var name = "Your Name";

  // Display the name and department on the webpage
  document.write("<h1>Name: " + name + "</h1>");
</script>

</body>
</html>
```

7. Summarize benefits of using JavaScript code in an HTML document.

- Enhances interactivity and user experience.
- Enables dynamic content updates without page reloads.
- Validates form data and provides feedback.
- Supports asynchronous communication with servers (AJAX).
- Facilitates client-side form validation.

8. Predict the need for client and server-side scripting.

Client-side scripting is needed for enhancing user interfaces, validating user input, and providing dynamic content without server interaction. Server-side scripting is necessary for processing and handling data on the server, interacting with databases, and performing server-level tasks.

9. Name some of the built-in objects in JavaScript.

- Object: The base object from which all other objects inherit properties and methods.
- Array: Used to store multiple values in a single variable.
- String: Used for manipulating strings of text.
- Number: Used for numerical operations and represents numeric data.
- Boolean: Represents a logical value of true or false.
- Date: Used for working with dates and times.
- Math: Provides mathematical constants and functions for mathematical operations.
- RegExp (Regular Expression): Used for matching patterns within strings.

10. Define JavaScript statement with an example.

A JavaScript statement is a set of instructions to be executed.
Example:

```
let x = 5; // Declaration and assignment statement
console.log(x); // Output statement
```

11. Point out any two techniques of event programming.

Inline Event Handling: Assigning event handlers directly in HTML tags.

```
<button onclick="myFunction()">Click me</button>
```

Event Listener: Attaching event handlers using JavaScript.

```
document.getElementById("myButton").addEventListener("click", myFunction);
```

12. What is DHTML?

DHTML (Dynamic HTML) refers to a combination of HTML, CSS, and JavaScript that allows for dynamic and interactive web pages. It enables the manipulation of HTML elements and styles dynamically in response to user actions or events.

13. Differentiate HTML and DHTML.

HTML (HyperText Markup Language):
Static markup language for creating the structure of web pages.
Does not provide dynamic or interactive features.
DHTML (Dynamic HTML):
Incorporates HTML, CSS, and JavaScript to create interactive and dynamic web pages.
Enables manipulation of HTML elements and styles based on user interactions.

14. Point out the key features of DHTML.

- Dynamic Content: Allows the modification of content on-the-fly.
- Interactive User Interface: Supports responsive and interactive user interfaces.
- Dynamic Styling: Enables changing styles dynamically.
- Event Handling: Responds to user events and actions.
- Cross-Browser Compatibility: Works across various web browsers.

15. What is AngularJS?

AngularJS is an open-source JavaScript framework used to build rich and extensible web applications. It is developed by Google and follows the MVC (Model View Controller) pattern. It supports HTML as the template language and enables the developers to create extended HTML tags which will help to represent the application's content more clearly. It is easy to update and receive information from an HTML document. It also helps in writing a proper maintainable architecture which can be tested at a client-side.

16. What are the main advantages of AngularJS?

Some of the main advantages of AngularJS are given below:

- Allows us to create a single page application.
- Follows MVC design pattern.
- Predefined form validations.
- Supports animations.
- Open-source.
- Cross-browser compliant.
- Supports two-way data binding.
- Its code is unit testable.

17. What is $scope?

A $scope is an object that represents the application model for an Angular application.Each AngularJS application can have only one root scope but can have multiple child scopes.

18. What are the directives in AngularJS?

Directives are the markers on DOM element which are used to specify behavior on that DOM element. All AngularJS directives start with the word "*ng*". There are many in-built directives in AngularJS such as "ng-app", "ng-init", "ng-model", "ng-bind", "ng-repeat" etc.

19. What are the controllers in AngularJS?

Controllers are JavaScript functions which are used to provide data and logic to HTML UI. It acts as an interface between Server and HTML UI. Each controller accepts $scope as a parameter which refers to the application/module that controller is going to control.

20. What are the uses of controllers in AngularJS?

AngularJS controllers are used for:

Setting the initial state of the $scope object

Adding behavior to the $scope object

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PART B

1. Examine variables and data types in JavaScript.
2. Give various Operators in JavaScript.
3. Summarize about DOM Model.
4. Describe the control statements in Javascript.
5. Illustrate the concept of the DOM (Document Object Model) in detail with an example.
6. Demonstrate the concept of built-in objects in JavaScript with an example.
7. Create a registration form using HTML and perform validation.
8. Discuss any two validation functions in java script.
9. Explain the concept of directives in AngularJS and provide examples.
10. Explain about filters,modules,scope,controller in AngularJS.