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Quran Education Point

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CLASS	9TH	CHAPTER	03
SUBJECT	COMPUTER	BOARD	FEDERAL

CHAPTER 3: PROGRAMMING FUNDAMENTALS

Multiple-Choice Questions (MCQs)

1. **Everything in HTML is identified on the basis of _____:**
   - a) Brackets b) Title c) Tags d) Image
   - **Answer:** c) Tags
2. **The output of HTML code is visible in _____:**
   - a) Notepad b) File c) Browser d) Spreadsheet
   - **Answer:** c) Browser
3. **Name of a web page can be given using _____ tag.**
   - a) Body b) Title c) Head d) Footer
   - **Answer:** b) Title
4. **Main parts of a document are arranged in _____ tag.**
   - a) Head b) Title c) Body d) Line Break
   - **Answer:** c) Body
5. **The heading tag-pair for 5th level heading is _____:**
   - a) <h5 .. h5> b) <h5 .. /h5> c) h5> .. </h5 d) <h5> .. </h5>
   - **Answer:** d) <h5> .. </h5>
6. **Span is used to provide _____ to a line.**
   - a) Font b) Border c) Style d) Color
   - **Answer:** c) Style
7. **First row of table in HTML is called _____:**
   - a) Title row b) Top Row c) Header Row d) Upper Row
   - **Answer:** c) Header Row
8. **p tag-pair is used for _____:**
   - a) Print b) Page align c) Page break d) Paragraph
   - **Answer:** d) Paragraph
9. **A variable cannot start with a _____:**
   - a) Alphabet b) Number c) Character d) String
   - **Answer:** b) Number

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10. **The first value assigned to a variable after declaration is called _____:**
    - a) Beginning value b) Starting value c) Initialization d) Substitution
    - **Answer:** c) Initialization

Short Response Questions (SRQs)

1. **Contrast between website and web application.** A website primarily delivers static content for users to view and read without complex user interactions. A web application is an interactive software program that allows users to perform tasks, manipulate data, and receive dynamic responses. Websites focus on information display, whereas web applications focus on user participation and workflow processing.
2. **What is 'href' refers to and how to use it?** The href (Hypertext Reference) attribute defines the destination URL or file path for a hyperlink. It is used inside the HTML anchor tag <a> to connect web pages together. For example, Visit Website creates a clickable link to that web address.
3. **Enlist the optional parameters to open a webpage.** Optional parameters in link target attributes and JavaScript window.open() include the target attribute (_blank, _self), window dimensions (width, height), and display features (toolbar, location, resizable). These control where and how the target document opens. They customize navigation behavior across windows or browser tabs.
4. **List out the frequent tags used in text of a webpage and what are they used for?** Common text tags include <p> for defining paragraphs and <br> for creating line breaks. Formatting tags like <b> or bold text, while <i> or italicize text for emphasis. Heading tags (<h1> to <h6>) structure document headings by hierarchical importance.
5. **Explain the role of <body> tag-pair in a document.** The <body>...</body> tag pair encloses all the visible contents of an HTML web document. It contains elements like headings, paragraphs, images, tables, hyperlinks, and embedded multimedia. Browsers parse and render everything within this section directly onto the screen.
6. **How the event based code is used in JavaScript?** Event-based code in JavaScript executes functions automatically in response to user actions or system states. It attaches event listeners or inline handlers (like onclick or onmouseover) to HTML elements. When the specified event occurs, the associated script executes to update the page dynamically.
7. **Infer about the External CSS? Where are External CSS generally used?** External CSS stores style declarations in a separate .css file linked to HTML documents via the <link> tag. It is used in multi-page websites to maintain visual consistency and centralize site design. Modifying a single external stylesheet updates the appearance of all connected web pages simultaneously.

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Extended Response Questions (ERQs)

Q1. What is Document Object Model? Explain with the help of an example.

The **Document Object Model (DOM)** is a programming interface for HTML and XML documents. It represents the structure of a web page as a logical tree, where every element, attribute, and text snippet is an object (node) that scripts can modify dynamically.

Key Features:

- Enables languages like JavaScript to read, add, modify, or delete HTML elements and attributes.
- Organizes elements hierarchically starting from the root document node down through elements like <html>, <body>, and individual paragraph tags.

Example Code & DOM Manipulation:

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>DOM Example</title>
</head>
<body>
  <h2 id="heading">Original Text</h2>
  <button onclick="changeText()">Click to Change</button>

  <script>
    function changeText() {
      // Using DOM to target and modify the heading element
      document.getElementById("heading").innerText = "Text Updated via DOM!";
    }
  </script>
</body>
</html>
```

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Q2. Write code to differentiate between different types of headings in HTML.

HTML provides six levels of headings, ranging from <h1> (most important / largest size) down to <h6> (least important / smallest size).

HTML Code:

HTML

```
<!DOCTYPE html>
<html>
<head>
   <title>HTML Headings Demo</title>
</head>
<body>
   <h1>Heading Level 1 - Main Title (Largest)</h1>
   <h2>Heading Level 2 - Section Heading</h2>
   <h3>Heading Level 3 - Sub-section Heading</h3>
   <h4>Heading Level 4 - Sub-sub-section Heading</h4>
   <h5>Heading Level 5 - Minor Heading</h5>
   <h6>Heading Level 6 - Smallest Heading</h6>
</body>
</html>
```

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Q3. Elaborate steps and provide code to load a background image in a webpage.

Steps:

1. Save the desired background image in your website project directory (e.g., background.jpg).
2. Use CSS to apply the background image using the background-image property targeting the body tag.
3. Add properties like background-size: cover; and background-repeat: no-repeat; to ensure proper layout fitting across screen resolutions.

HTML & CSS Code:

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Background Image Example</title>
  <style>
    body {
      background-image: url('background.jpg');
      background-repeat: no-repeat;
      background-size: cover;
      background-position: center;
    }
  </style>
</head>
<body>
  <h1 style="color: white;">Webpage with Background Image</h1>
</body>
</html>
```

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Q4. With the help of sample code, highlight different methods to incorporate CSS code in a HTML webpage.

There are three ways to apply CSS rules in HTML:

1. **Inline CSS:** Applied directly using the style attribute inside individual HTML tags.
2. **Internal (Embedded) CSS:** Written inside a <style> block within the <head> section.
3. **External CSS:** Written in a separate file (e.g., styles.css) and linked using <link rel="stylesheet" href="styles.css">.

Sample Code:

HTML

```
<!DOCTYPE html>
<html>
<head>
   <title>CSS Methods Example</title>
   <!-- Method 1: External CSS Link -->
   <link rel="stylesheet" href="styles.css">

   <!-- Method 2: Internal CSS -->
   <style>
      p {
         color: blue;
         font-size: 16px;
      }
   </style>
</head>
<body>
   <!-- Method 3: Inline CSS -->
   <h1 style="color: red; text-align: center;">Inline Styled Heading</h1>
   <p>This paragraph is styled using Internal CSS.</p>
</body>
</html>
```

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Q5. Sketch steps and provide code to apply border and color to a table in a webpage.

Steps:

1. Define the HTML table structure using <table>, <tr>, <th>, and <td> tags.
2. Use the CSS border property on table, th, and td elements to define border size, style, and color.
3. Use border-collapse: collapse; to merge double borders into a single clean border line.
4. Add background-color to header cells (th) or table cells (td) for styled colors.

Code:

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Styled HTML Table</title>
  <style>
    table {
      width: 50%;
      border-collapse: collapse;
      border: 2px solid navy;
    }
    th {
      background-color: navy;
      color: white;
      border: 1px solid navy;
      padding: 8px;
    }
    td {
      border: 1px solid blue;
      background-color: #f2f2f2;
      padding: 8px;
      text-align: center;
    }
  </style>
</head>
<body>
  <table>
    <tr>
      <th>ID</th>
      <th>Name</th>
      <th>Marks</th>
    </tr>
```

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```
        <tr>
            <td>101</td>
            <td>Ali</td>
            <td>95</td>
        </tr>
    </table>
</body>
</html>
```

Q6. Discuss the functionality JavaScript can provide in a webpage with the help of a suitable example code.

Functionality:

JavaScript adds interactivity, logic, dynamic content rendering, form validation, and event handling to static HTML/CSS webpages.

Example Code (Interactive Counter):

HTML

```
<!DOCTYPE html>
<html>
<head>
    <title>JavaScript Functionality Demo</title>
</head>
<body>
    <h2>Counter Application</h2>
    <p>Current Count: <span id="count">0</span></p>
    <button onclick="increment()">Increase</button>

    <script>
        let counter = 0;
        function increment() {
            counter++;
            document.getElementById("count").innerText = counter;
        }
    </script>
</body>
</html>
```

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Q7. Articulate steps and write code to create a scrolling text on a webpage.
Steps:

1. Use the <marquee> tag (classic HTML approach) or modern CSS animations (@keyframes).
2. Set movement properties like direction, scroll speed, or animation timing.

Code (Using standard modern CSS animations):

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Scrolling Text</title>
  <style>
    .scroll-container {
      width: 100%;
      overflow: hidden;
      white-space: nowrap;
      background-color: #333;
      color: yellow;
      padding: 10px 0;
    }
    .scrolling-text {
      display: inline-block;
      animation: scroll 10s linear infinite;
    }
    @keyframes scroll {
      from { transform: translateX(100%); }
      to { transform: translateX(-100%); }
    }
  </style>
</head>
<body>
  <div class="scroll-container">
    <div class="scrolling-text">Welcome to Computer Science Class 9 - Unit 3!</div>
  </div>
</body>
</html>
```

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Q8. Enlist steps to add a video clip in a website which starts playing as the web page loads.

Steps:

1. Store your video file (e.g., video.mp4) in your website folder.
2. Insert the HTML5 <video> tag into the webpage.
3. Add the autoplay attribute to start playback automatically upon page load.
4. Add the muted attribute (browsers require video to be muted for autoplay to work seamlessly).

Code:

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Autoplay Video</title>
</head>
<body>
  <video width="640" height="360" autoplay muted controls>
    <source src="video.mp4" type="video/mp4">
    Your browser does not support the video tag.
  </video>
</body>
</html>
```

Q9. Cite steps on compiling the result of your last examination in a tabular form and display it in a webpage.

Steps:

1. Organize your subject marks data (Subject Name, Total Marks, Obtained Marks).
2. Construct an HTML table structure using <table>, <tr>, <th>, and <td>.
3. Add header row elements for titles and data rows for each subject's scores.
4. Calculate and add a summary row displaying total combined marks and percentage.

Code:

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Examination Results</title>
  <style>
    table { border-collapse: collapse; width: 60%; margin: 20px auto; }
    th, td { border: 1px solid black; padding: 10px; text-align: center; }
    th { background-color: #4CAF50; color: white; }
  </style>
</head>
```

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```
<body>
  <h2 style="text-align: center;">Final Examination Results</h2>
  <table>
    <tr>
      <th>Subject</th>
      <th>Total Marks</th>
      <th>Obtained Marks</th>
    </tr>
    <tr>
      <td>Computer Science</td>
      <td>75</td>
      <td>70</td>
    </tr>
    <tr>
      <td>Mathematics</td>
      <td>75</td>
      <td>68</td>
    </tr>
    <tr>
      <td>Physics</td>
      <td>75</td>
      <td>65</td>
    </tr>
    <tr style="font-weight: bold;">
      <td>Total</td>
      <td>225</td>
      <td>203</td>
    </tr>
  </table>
</body>
</html>
```

Q10. In context of Fig. 40(d), add another button namely 'Revert' which when is pressed, it will reverse both the color and index values.

Logic & Code Solution:

Assuming an index/color toggling state machine, the **Revert** button triggers a JavaScript function that reverts background color styles and decrements/resets the current index tracker value.

HTML

```
<!DOCTYPE html>
<html>
```

```
<head>
   <title>Toggle and Revert State</title>
   <style>
      .box { width: 200px; height: 100px; background-color: lightblue; text-align: center; line-
height: 100px; font-weight: bold; }
   </style>
</head>
<body>

   <div id="displayBox" class="box">Index: 0</div><br>
   <button onclick="applyChange()">Apply Change</button>
   <button onclick="revertChange()">Revert</button>

   <script>
      let index = 0;
      const box = document.getElementById("displayBox");

      function applyChange() {
         index++;
         box.style.backgroundColor = "lightgreen";
         box.innerText = "Index: " + index;
      }

      function revertChange() {
         index--;
         box.style.backgroundColor = "lightblue";
         box.innerText = "Index: " + index;
      }
   </script>

</body>
</html>
```

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