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# Quran Education Point

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| Class | 9th | Chapter | 08 |
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| Subject | Computer Science | Board | Punjab |

## CHAPTER 8: WEB DEVELOPMENT WITH HTML, CSS AND JAVASCRIPT (EXERCISE SOLUTION)

**Multiple Choice Questions (MCQs)**

**1. Which of the following tag is not a correct HTML tag?**

(a)  | (b)  | (c) <head> | (d) <footer/> *(or incorrect syntax variant)*

**Answer:** All listed tags ( , , <head>, <footer>) are valid HTML tags. *(Typically, custom or malformed tags are tested here).*

**2. What does CSS stand for?**

(a) Cascading Style Sheets | (b) Computer Style Sheets | (c) Creative Style Sheets | (d) Colorful Style Sheets

**Answer:** (a) Cascading Style Sheets

PNG

**3. Which of the following tag is used to create a hyperlink in HTML?**

(a) <link> | (b) <a> | (c) <href> | (d) <nav>

**Answer:** (b) <a>

**4. Which property is used to change the background color in CSS?**

(a) color | (b) background-color | (c) bgcolor | (d) background

**Answer:** (b) background-color

**5. Which HTML attribute is used to define inline styles?**

(a) class | (b) style | (c) font | (d) styles

**Answer:** (b) style

**6. Which of the following is the correct syntax for a CSS rule?**

(a) selector {property: value;} | (b) selector: {property=value;} | (c) selector {property=value} | (d) selector: {property: value;}

**Answer:** (a) selector {property: value;}

**7. In JavaScript, which markup is used for comments?**

(a) /***/ | (b) // | (c) <!-- --> | (d) /**/

**Answer:** (b) // *(for single-line comments)*

**8. How do you include JavaScript in an HTML document?**
(a) <script src="script.js"></script> | (b) <java src="script.js"></java> | (c) <js src="script.js"></js> | (d) <code src="script.js"></code>
**Answer:** (a) <script src="script.js"></script>
**9. Which HTML tag is used to create an unordered list?**
(a) <ol> | (b) <ul> | (c) <li> | (d) <list>
**Answer:** (b) <ul>
**10. Which tag is used to display a horizontal line in HTML?**
(a) <br> | (b) <hr> | (c) <line> | (d) <hline>
**Answer:** (b) <hr>

**Short Questions**
**1. What is the purpose of the <head> tag in HTML?**
Answer: The <head> tag acts as a container for metadata, page title, links to stylesheets (<link>), scripts (<script>), and character set declarations (<meta>). It is not displayed directly in the main browser viewport.
**2. Explain the difference between an ordered list and an unordered list in HTML.**
Answer:

- **Ordered List (<ol>):** Displays items in a numbered sequence (1, 2, 3 or A, B, C).
- **Unordered List (<ul>):** Displays items using bullet points or markers.

**3. How do you add a comment in CSS?**
Answer: Comments in CSS are enclosed between /* and */.
*Example:* /* This is a CSS comment */
**4. What are the different ways to apply CSS to an HTML document?**
Answer:

1. **Inline CSS:** Applied directly to an HTML element using the style attribute.
2. **Internal CSS:** Placed within a <style> tag inside the HTML document's <head>.
3. **External CSS:** Linked via an external .css stylesheet file using the <link> tag.

**5. How can you include JavaScript in an HTML file?**
Answer: JavaScript can be included inline within event attributes (e.g., onclick), internally inside <script> tags in the HTML document, or externally by linking a .js file via <script src="filename.js"></script>.
**6. Describe the syntax for creating a hyperlink in HTML.**
Answer: Hyperlinks are created using the anchor tag <a> with the href attribute specifying the target URL.
*Syntax:* <a href="[https://www.example.com](https://www.example.com)">Visit Example</a>
**7. What is the function of the  tag in HTML?**
Answer: The  tag is a block-level container used to group other HTML elements together for styling with CSS or manipulation with JavaScript.

**8. How do you link an external CSS file to an HTML document?**
Answer: By placing a <link> tag inside the <head> section of the HTML document.
*Syntax:* <link rel="stylesheet" href="style.css">
**9. What is the use of the <table> tag in HTML?**
Answer: The <table> tag is used to structure and display tabular data in rows (<tr>) and columns (<td> or <th>).
**10. Explain the box model in CSS.**
Answer: The CSS box model describes how every HTML element is rendered as a rectangular box comprising four main layers: **Content** (text/images), **Padding** (space around content inside the border), **Border** (outer edge surrounding padding), and **Margin** (outer space separating the element from others).
**Long Questions**
**1. Discuss the fundamental differences between HTML, CSS, and JavaScript in the context of web development.**
Answer:

- **HTML (HyperText Markup Language):** Provides the foundational structure, content, and semantic layout of a web page (the skeleton).
- **CSS (Cascading Style Sheets):** Controls the visual presentation, styling, colors, fonts, and responsive layout of elements (the skin and clothing).
- **JavaScript:** Adds dynamic behavior, user interaction, logic, data processing, and asynchronous updates (the nervous system/muscles).

**2. Explain the process of setting up a development environment for web development by discussing the necessary softwares and tools.**
Answer:

- **Code Editor:** Install a robust modern code editor like **Visual Studio Code (VS Code)**, Sublime Text, or WebStorm to write HTML, CSS, and JavaScript.
- **Web Browser:** Install modern browsers (Google Chrome, Mozilla Firefox, Microsoft Edge) equipped with built-in Developer Tools (F12) for debugging and testing layouts.
- **Extensions:** Use helpful VS Code extensions like *Live Server* to auto-refresh web pages during local development.

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**3. Create a basic HTML page that includes a header, a paragraph, an image, and a hyperlink.**

Answer:

HTML

```
<!DOCTYPE html>
<html>
<head>
   <title>Basic Page Example</title>
</head>
<body>
   <h1>Welcome to My Website</h1>
   <p>This is a paragraph introducing web development concepts.</p>
   <img src="logo.jpg" alt="Sample Image" width="200">
   <br>
   <a href="https://www.example.com">Click here to visit our partner site</a>
</body>
</html>
```

**4. How do you style a table using CSS? Create a sample table and apply styles to it.**

Answer: Tables can be styled using CSS properties for borders, background colors, padding, and text alignment.

*Sample Code:*

HTML

```
<style>
  table { width: 100%; border-collapse: collapse; }
  th, td { border: 1px solid #ddd; padding: 8px; text-align: left; }
  th { background-color: #4CAF50; color: white; }
  tr:nth-child(even) { background-color: #f2f2f2; }
</style>
<table>
  <tr><th>ID</th><th>Name</th><th>Subject</th></tr>
  <tr><td>1</td><td>Ali</td><td>Computer Science</td></tr>
  <tr><td>2</td><td>Sara</td><td>Mathematics</td></tr>
</table>
```

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**5. Describe the different CSS selectors and provide examples of each.**

Answer:

- **Element / Tag Selector:** Targets elements by tag name.

*Example:* p { color: blue; }

- **Class Selector:** Targets elements sharing a specific class attribute (prefixed with .).

*Example:* .highlight { background-color: yellow; }

- **ID Selector:** Targets a single unique element with a specific ID attribute (prefixed with #).

*Example:* #main-header { font-size: 24px; }

- **Descendant Selector:** Targets elements nested inside another element.

*Example:* div p { color: green; }

**6. Explain the process of creating a responsive web page using CSS with the help of examples and explanations.**

Answer: Responsive web design ensures web pages render well across various screen sizes (mobile, tablet, desktop) using fluid grid layouts, flexible images, and CSS **Media Queries**.

*Example:*

CSS

```
/* Default desktop style */
body { font-size: 16px; background-color: white; }

/* Media query for screens smaller than 600px wide */
@media screen and (max-width: 600px) {
  body { font-size: 14px; background-color: #f0f0f0; }
}
```

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**7. Write a JavaScript function that changes the background color of a web page when a button is clicked. Provide the complete code and explain how it works.**

Answer:

HTML

```
<!DOCTYPE html>
<html>
<head>
  <title>Change Color Example</title>
</head>
<body>
  <button onclick="changeColor()">Change Background Color</button>

  <script>
    function changeColor() {
      document.body.style.backgroundColor = "lightblue";
    }
  </script>
</body>
</html>
```

*Explanation:* When the button is clicked, its onclick event triggers the JavaScript function changeColor(). The function accesses the document's body object and modifies its style.backgroundColor property to "lightblue".

**8. How do you add animations and transitions using CSS? Provide examples and explain the properties involved.**

Answer:

- **Transitions:** Allow property changes to occur smoothly over a specified duration rather than instantly.

*Properties:* transition-property, transition-duration, transition-timing-function.

*Example:* transition: background-color 0.3s ease;

- **Animations:** Enable complex multi-step changes using keyframes (@keyframes).

*Properties:* animation-name, animation-duration, animation-iteration-count.

*Example:*

CSS

```
@keyframes slideIn {
  from { transform: translateX(-100px); }
  to { transform: translateX(0); }
}
div { animation: slideIn 2s infinite; }
```