**Theory Assignment:**

**Question 1: Define HTML. What is the purpose of HTML in web development?**

**Ans:**

HTML (HyperText Markup Language) is the standard markup language used to create and structure content on the web. It provides the basic framework for webpages by defining elements like headings, paragraphs, images, links, lists, forms, and other content.

Purpose of HTML in Web Development:

1. Structure Content:  
    HTML organizes and structures content using tags (e.g., <h1>, <p>, <img>, <a>).
2. Display Elements:  
    It tells the browser how to display text, images, links, and other media on a webpage.
3. Link Documents:  
    HTML uses hyperlinks (<a> tags) to connect different pages or resources, enabling website navigation.
4. Embed Media:  
    HTML allows embedding of audio, video, images, and other multimedia.
5. Work with Other Technologies:  
     
   * CSS (Cascading Style Sheets): For styling and layout.
   * JavaScript: For interactivity and dynamic content.

**Question 2: Explain the basic structure of an HTML document. Identify the mandatory tags and their purposes.**

**Ans:**

The basic structure of an HTML document follows a standard format that ensures the browser can correctly interpret and display the webpage.

<!DOCTYPE html>

<html>

  <head>

    <title>Page Title</title>

  </head>

  <body>

    <h1>This is a Heading</h1>

    <p>This is a paragraph.</p>

  </body>

</html>

**Explanation of Mandatory Tags:**

1. **<!DOCTYPE html>**
   * Declares the document type.
   * Tells the browser to use **HTML5** standards.
   * Must be the first line in the HTML document.
2. **<html>**
   * The root element of the HTML document.
   * Wraps all the content of the entire webpage.
3. **<head>**
   * Contains **meta-information** about the page (not displayed directly).
   * Can include <title>, <meta>, <link>, <style>, and <script>.
4. **<title>**
   * Sets the title of the web page (shown in the browser tab).
   * Located inside the <head> section.
5. **<body>**
   * Contains all the **visible content** of the web page (text, images, links, etc.).
   * Everything inside <body> is what users see on the browser.

**Question 3: What is the difference between block-level elements and inline elements inHTML? Provide examples of each.**

**Ans:**

In **HTML**, elements are categorized as **block-level** or **inline** based on how they behave in the document layout.

**Block-Level Elements**

* **Start on a new line** and take up the **full width** available (from left to right).
* Used to **structure** and **group content**.
* Can contain **other block-level** or **inline elements**.

**Examples:**

* <div> – generic container
* <p> – paragraph
* <h1> to <h6> – headings
* <ul>, <ol> – lists
* <li> – list item
* <section>, <article>, <header>, <footer>

**Inline Elements**

* **Do not start on a new line.**
* Only take up as much **width as necessary**.
* Used to **format** parts of text **within block-level elements**.
* Cannot contain block-level elements.

**Examples:**

* <span> – generic inline container
* <a> – hyperlink
* <strong> – bold text
* <em> – italicized text
* <img> – image
* <br> – line break

**Question 4: Discuss the role of semantic HTML. Why is it important for accessibility andSEO? Provide examples of semantic elements.**

**Ans:**

**Semantic HTML** refers to the use of HTML tags that clearly describe the **meaning and purpose** of the content they contain. Instead of using generic tags like <div> or <span>, semantic tags use meaningful names, such as <header>, <article>, or <footer>.

**Why Semantic HTML Matters:**

**1. Improves Accessibility**

* **Screen readers** and assistive technologies rely on semantic elements to understand the structure and meaning of a webpage.
* Helps visually impaired users **navigate content easily** (e.g., identifying navigation menus, main content, headings).

**2. Boosts SEO (Search Engine Optimization)**

* **Search engines** like Google use semantic tags to better understand the **context and hierarchy** of content.
* Increases chances of better **ranking in search results** by clarifying what's important on the page.

**3. Better Code Readability & Maintainability**

* Semantic HTML makes the code more **understandable** for developers.
* Easier to maintain and debug.

**Examples of Semantic HTML Elements:**

|  |  |
| --- | --- |
| **Tag** | **Purpose** |
| <header> | Defines the header of a document or section |
| <nav> | Defines navigation links |
| <main> | Defines the main content area |
| <section> | Defines a section in a document |
| <article> | Represents self-contained content |
| <aside> | Content indirectly related to main content |
| <footer> | Defines the footer of a document or section |
| <figure> | Groups media content (like images) |
| <figcation> | Caption for the <figure> element |