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Internal Assessment Test 1 – September 2019

Sub:	Web Technology and its Applications	Sub Code:	15CS71	Branch:	ISE
Date:	13-09-2019	Duration:	90 min's	Max Marks:	50
		Sem / Sec:	7 th / A & B		OBE
<u>Answer any FIVE FULL Questions</u>					MARKS
1 (a)	Write a short note on the following ; i) Internet ii) Web iii) W3C iv) WHATWG v) XML vi) Browser				[06]
(b)	Compare XHTML & HTML5.				[04]
2	What are the aims of HTML5? Explain the following HTML terms, Element, Tag, Attribute, Container element, and Hierarchy of elements, with appropriate example.				[10]
3	Explain HTML5 semantic elements. Elaborate how it simplifies XHTML <div> level structure.				[10]
4 (a)	What are the different types of style sheets? Elaborate on their usage considering the relevant scenario.				[04]
(b)	With an example, explain different levels of style sheets.				[06]
5	What is a selector? List the different selectors available in CSS. Mention the scenario in which these types are used with an example.				[10]
6	Which are the generic Font-Family fonts and when they will be used? Explain relative units: em, rem, and percentage (%) . How do these affect front-size relatively? Explain with an example.				[10]

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Internal Assessment Test 1

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Scheme of Evaluation (SoE)

Q#	Question	Marks Distribution	Max Marks
1 (a)	Write a short note on the following ; i) Internet ii) Web iii) W3C iv) WHATWG v) XML vi) Browser	6 X 1M = 6M	[06]
(b)	Compare XHTML & HTML5.	4 X 1M = 4M	[04]
2	What are the aims of HTML5? Explain the following HTML terms, Element, Tag, Attribute, Container element, and Hierarchy of elements, with appropriate example.	Aim = 5M 5 X 1M = 5M	[10]
3	Explain HTML5 semantic elements. Elaborate how it simplifies XHTML <div> level structure.	Semantic Elements = 6M Justification = 4M	[10]
4 (a)	What are the different types of style sheets? Elaborate on their usage considering the relevant scenario.	3 X 1M = 3M Scenario = 1M	[04]
(b)	With an example, explain different levels of style sheets.	3 X 2M = 6M	[06]
5	What is a selector? List the different selectors available in CSS. Mention the scenario in which these types are used with an example.	Defn. & Structure = 3M Types with example = 7M	[10]
6	Which are the generic Font-Family fonts and when they will be used? Explain relative units: em, rem, and percentage (%) . How do these affect front-size relatively? Explain with an example.	Font Types = 4 M em, rem, % description X 2M = 6M	[10]

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Internal Assessment Test 1

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Solutions

1 (a) Write a short note on the following ; [06M]
 i) Internet ii) Web iii) W3C iv) WHATWG v) XML vi) Browser

Internet: Is the global system of interconnected computer networks that use the Internet protocol suite (TCP/IP) to link devices worldwide.

WWW: Commonly known as the **Web** is an information system where documents and other web resources are identified by **Uniform Resource Locators (URL)**, which may be interlinked by hypertext, and are accessible over the internet.

W3C: World Wide Web Consortium (W3C) is the main international standards organization for the WWW founded and currently lead by Tim Berners Lee.

WHATWG: Web Hypertext Application Technology Working Group (WHATWG) is a community (*individual form Apple, Mozilla Foundation, Opera Software*) of people in W3C interested in evolving HTML and related technologies. Around the year 2008, WHATWG contributions was adopted as HTML5 (*HTML Living Standard*).

Hypertext: Text displayed with a reference (*Hyperlinks*) to other text that the reader can immediately access.

Hypertext Markup Language (HTML): Standard Markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets (CSS) and Scripting Languages such as JavaScript.

Web Browser: Commonly referred as browser is a software application for accessing information on the WWW (Web). Each individual web page, image, and video is identified by a distinct URL enabling browser to retrieve these resources from a web server and display them on a user's device.

Web Server: Server Software, or Hardware dedicated to running said software that can satisfy WWW client requests.

XML: Stands for eXtensible Markup Language. XML was designed to store and transport data. XML was designed to be self-descriptive.

1(b) Compare XHTML & HTML5. [04]

Difference	XHTML	HTML5
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Developed by	Developed by W3C in early 2000.	Developed by a community of people from Mozilla foundation, Opera Software known as WHATWG (<i>Web Hypertext Application Technology Working Group</i>) at W3C founded by Ian Hickson.
Abbreviation	Extensible Hyper Text Markup language	Hyper Text Markup Language
Application	XHTML is an application of XML (<i>Extensible Markup Language</i>)	HTML is an application of SGML (<i>Standard Generalized Markup Language</i>)
Aim	XHTML aimed to replace HTML.	HTML5 aimed to extend initial version of HTML.
Case Sensitive	XHTML is case sensitive.	HTML is not case sensitive
Expressive	XHTML is more expressive as compared to HTML (<i>Attributes to be quoted. All tags should have end tag</i>).	HTML is less expressive.
Parser	It needs to parse with standard XML parser.	HTML requires lenient HTML specific parser.
Internet Media Type	For XHTML, it is application/xhtml+xml.	For HTML, it is text/html
New capabilities	XHTML cannot embed video or audio directly. XHTML makes use of flash player for it.	HTML 5 can contain embedded video and audio without using flash player.

2 What are the aims of HTML5? Explain the following HTML terms, Element, Tag, Attribute, Container element, and Hierarchy of elements, with appropriate example. [10]

There are three main aims to HTML5:

- Specify unambiguously how browsers should deal with invalid markup.
- Provide an open, non-proprietary programming framework (via JavaScript) for creating rich web applications.
- Be backward compatible with the existing web.

Certainly not all browsers and all versions support every feature of HTML5 as such, but every browser will support gradually by increasing subset of HTML5 capabilities.

HTML Element

An **HTML element** is an individual component of a HTML document or web page. HTML is composed of a tree of HTML elements. HTML elements can contain text, other elements, or be empty. An HTML element is defined by starting tag. If the element contains other content, it ends with a closing tag.

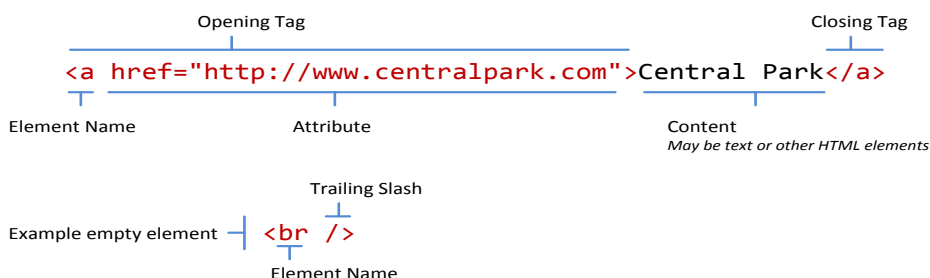
Example:

Element	Start tag	Content	End tag
<p>...</p>	<p>	Paragraph content	</p>
<h1>...</h1>	<h1>	Header content	</h1>

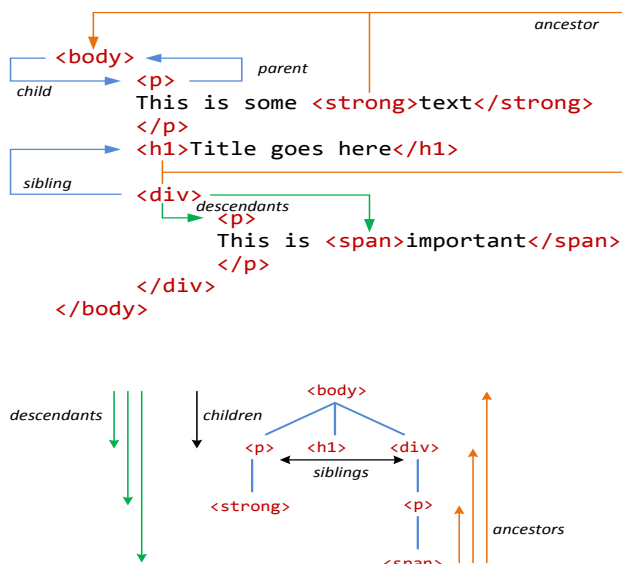
HTML Attributes

- ✓ All HTML elements can have attributes
- ✓ Attributes provide additional information about an element
- ✓ Attributes are always specified in the start tag
- ✓ Attributes usually come in name/value pairs like name="value"

Example:



Hierarchy of elements



- ✓ In order to properly construct a hierarchy of elements, your browser expects each HTML nested element to be properly nested.
- ✓ That is, a child's ending tag must occur before its parent's ending tag.

1. Header and Footer (<header> <footer>)

Most web site pages have a recognizable header and footer section.

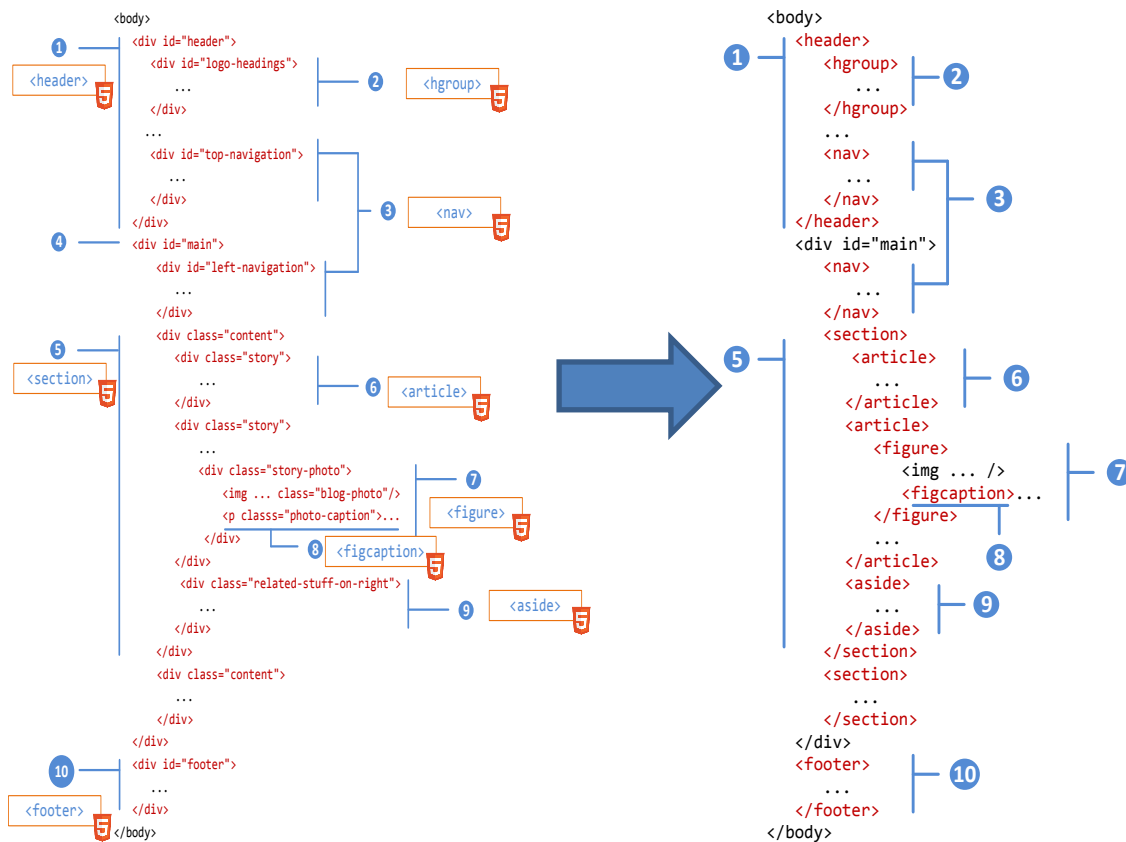
Typically the **header** contains

- The site logo
- Title (and perhaps additional subtitles or taglines)
- Horizontal navigation links, and perhaps one or two horizontal banners.

The typical footer contains less important material, such as

- smaller text versions of the navigation
- copyright notices
- Information about the site's privacy policy, and perhaps twitter feeds or links to other social sites.

2. **Heading Groups:** The <hgroup> element can be used to group related headings together within one container.
3. **Navigation:** The <nav> element represents a section of a page that contains links to other pages or to other parts within the same page.
4. The <article> element represents a section of content that forms an independent part of a document or site; for example, a magazine or newspaper article, or a blog entry.
5. The <section> element represents a section of a document, typically with a title or heading.
6. <figure> and <figcaption> specifies self-contained diagrams, photos, and others with appropriate caption.
7. The <aside> element is similar to the <figure> element in that it is used for marking up content that is separated from the main content on the page.



4 (a) What are the different types of style sheets? Elaborate on their usage considering the relevant scenario. [04]

1. **Author-created style sheets** (*CSS developer*).
2. **User style sheets** (*Client specific*) allow the individual user to tell the browser to display pages using that individual's own custom style sheet. This option is available in a browser usually in its **accessibility options area**.
3. The **browser style sheet** defines the **default styles** the browser uses for each HTML element.

4 (b) With an example, explain different levels of style sheets. [06]

CSS style rules can be located in three different locations.

- Inline
- Embedded
- External

You can combine all 3!

Inline

- ✓ An inline style only affects the element it is defined within and will override any other style definitions for the properties used in the inline style.
- ✓ Using inline styles is generally discouraged since they increase bandwidth and decrease maintainability.
- ✓ Inline styles can however be handy for quickly testing out a style change.

```
<h1>Share Your Travels</h1>
<h2 style="font-size: 24pt">Description</h2>
...
<h2 style="font-size: 24pt; font-weight: bold;">Reviews</h2>
```

LISTING 3.1 Internal styles example

Embedded

- ✓ Style rules placed within the `<style>` element inside the `<head>` element
- ✓ Used when more than one element in the same document need to be styled.

```
<head lang="en">
  <meta charset="utf-8">
  <title>Share Your Travels -- New York - Central Park</title>
  <style>
    h1 { font-size: 24pt; }
    h2 {
      font-size: 18pt;
      font-weight: bold;
    }
  </style>
</head>
<body>
  <h1>Share Your Travels</h1>
  <h2>New York - Central Park</h2>
  ...
```

LISTING 3.2 Embedded styles example

External

- ✓ Style rules placed within an external text file with the `.css` extension.
- ✓ Referenced in the html head area with `<link>` tag.
- ✓ Used when more than one html document need similar style.

```
<head lang="en">
  <meta charset="utf-8">
  <title>Share Your Travels -- New York - Central Park</title>
  <link rel="stylesheet" href="styles.css" />
</head>
```

LISTING 3.3 Referencing an external style sheet

5 What is a selector? List the different selectors available in CSS. Mention the scenario in which these types are used with an example. [10]

Selector

- ✓ Every CSS rule begins with a selector.
- ✓ The selector identifies which element or elements in the HTML document will be affected by the declarations in the rule.

Or

- ✓ Another way of thinking of selectors is that they are a pattern which is used by the browser to select the HTML elements that will receive the style.

CSS selectors allow you to select

- individual elements
- multiple HTML elements,
- elements that belong together in some way, or
- elements that are positioned in specific ways in the document hierarchy.

There are a number of different selector types.

Grouped element selector

- ✓ You can select a group of elements by separating the different element names with commas.
- ✓ This is a sensible way to reduce the size and complexity of your CSS files, by combining multiple identical rules into a single rule.

```

/* commas allow you to group selectors */
p, div, aside {
  margin: 0;
  padding: 0;
}
/* the above single grouped selector is equivalent to the
following: */
p {
  margin: 0;
  padding: 0;
}
div {
  margin: 0;
  padding: 0;
}
aside {
  margin: 0;
  padding: 0;
}

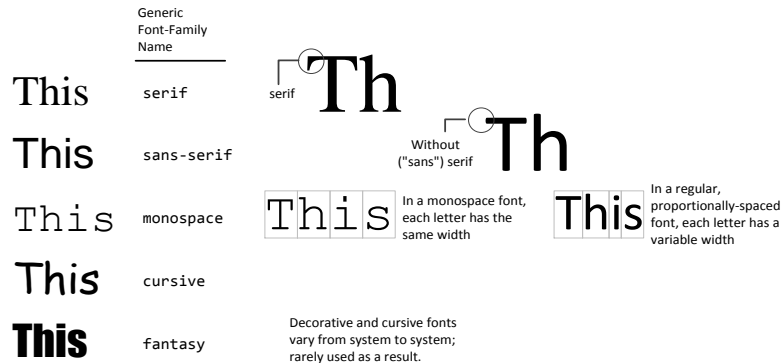
```

LISTING 3.4 Sample grouped selector

Selector	Matches	Example
Element	Matches a specific element	<code>div {}</code> /* Applies to all div elements */
Class	Matches elements which have class attribute with same value.	<code>.para {}</code> /* Applies to all elements which have an attribute <code>class="para"</code> .
ID	Matches element which have id attribute with same value.	<code>#loc {}</code> /* Applies to an element which have an attribute <code>id="loc"</code> .
Attribute	Matches elements which has a specific attribute	<code>[alt] {}</code> /* Applies to elements which have <code>alt</code> attribute.
Contextual	Matches an element with certain order hierarchy in the html structure	<code>div > h2 {}</code> /* Selects an <code><h2></code> element that is a child of a <code><div></code> element. */
pseudo-class / element	Identifies elements which are recognizable selectable object	pseudo-class ex: <code>a:visited {}</code> /*Applies if the anchor tag is visited. */ pseudo-element ex: <code>p:first-line {}</code> /*Applies to first line of the paragraph */

6 Which are the generic Font-Family fonts and when they will be used? Explain relative units: **em, rem, and percentage (%)**. How do these affect front-size relatively? Explain with an example. [10]

- ✓ The font-family property supports five different generic families.
- ✓ The browser supports a typeface from each family.



em, rem, %

- If we wish to create web layouts that work well on different devices, we should learn to use relative units such as **em** units or **percentages** for our font sizes (and indeed for other sizes in CSS as well).
- One of the principles of the web is that the user should be able to change the size of the text if he or she so wishes to do so.
- Using percentages or em units ensures that this user action will work.

How to use ems and percent's (%)

<code><body></code>	Browser's default text size is usually 16 pixels
<code><p></code>	100% or 1em is 16 pixels
<code><h3></code>	125% or 1.125em is 18 pixels
<code><h2></code>	150% or 1.5em is 24 pixels
<code><h1></code>	200% or 2em is 32 pixels

<code>/* using 16px scale */</code>	<code><body></code>
<code>body { font-size: 100%; }</code>	<code><p>this will be about 16 pixels</p></code>
<code>h3 { font-size: 1.125em; } /* 1.25 x 16 = 18 */</code>	<code><h1>this will be about 32 pixels</h1></code>
<code>h2 { font-size: 1.5em; } /* 1.5 x 16 = 24 */</code>	<code><h2>this will be about 24 pixels</h2></code>
<code>h1 { font-size: 2em; } /* 2 x 16 = 32 */</code>	<code><h3>this will be about 18 pixels</h3></code>
	<code><p>this will be about 16 pixels</p></code>
	<code></body></code>

rem unit

- CSS3 now supports a new relative measure, the rem (for root em unit).
- This unit is always relative to the size of the root element (i.e., the `<html>` element).