SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION

INTERNAL ASSESSMENT EXAMINATION – I
Fifth Semester
B.E.,Computer Science and Technology

19CT503 – Internet Programming

Regulations 2019

Answer Key
PART A - (5 X 2 = 10 marks)

1. Define URL

A URL, or Uniform Resource Locator, is a reference or address used to access resources on the internet. It is the fundamental mechanism that allows web browsers to retrieve files, web pages, images, and other online content. A typical URL consists of several parts: the protocol (such as HTTP or HTTPS), the domain name (like www.example.com), and a specific path or file name.

2. Compare GET and POST method.

GET	**POST**
1) In case of Get request, only **limited amount of data** can be sent because data is sent in header.	In case of post request, **large amount of data** can be sent because data is sent in body.
2) Get request is **not secured** because data is exposed in URL bar.	Post request is **secured** because data is not exposed in URL bar.
3) Get request **can be bookmarked.**	Post request **cannot be bookmarked.**
4) Get request is **idempotent** . It means second request will be ignored until response of first request is delivered	Post request is **non-idempotent.**
5) Get request is **more efficient** and used more than Post.	Post request is **less efficient** and used less than get.

3. What is meant by website?

A website (also written as a web site) is one or more web pages and related content that is identified by a common domain name and published on at least one web server. Websites are typically dedicated to a particular topic or purpose, such as news, education, commerce, entertainment, or social media.

4. List the different types of style sheet.

inline Style

Inline Style can be used to apply special effects to particular elements. Internal Style Sheet

Internal Style sheet is usually used if a **single page of HTML** has its unique style.

External Style Sheet

An **external Style Sheet contains the CSS rules** that are to be applied to the HTML document. Every HTML page must have the reference to the style sheet in the **<LINK>** tag.

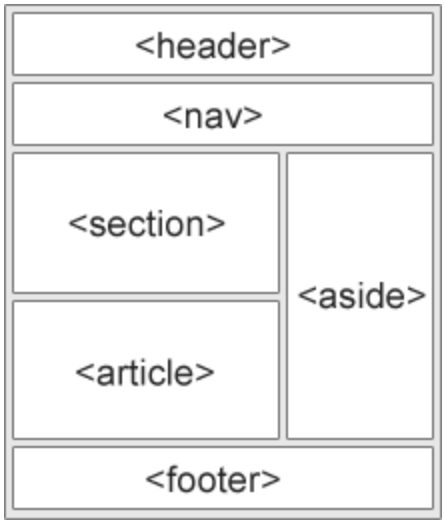
5. Explain embedded stylesheet in CSS

Embedded Stylesheet: It allows you to define styles for a particular HTML document as a whole in one place. This is done by embedding the <style></style> tags containing the CSS properties in the head of your document.

6. (a) Construct the semantic elements in HTML5 with example

Semantic elements that can be used to define different parts of a web page

- <article>
- <aside>
- <details>
- <figcaption>
- <figure>
- <footer>
- <header>
- <main>
- <mark>
- <nav>
- <section>
- <summary>
- <time>



HTML5 provides us with many semantic elements as listed below:

- **<article> tag:** A article tag is used to specify a particular block or space on the web page that is independent and has self-contained content.
- **<header> tag:** The header is the semantic tag that specifies the header or title of the page that will be shown at the top of the page.
- **<nav> tag:** Nav is the element or tag that is used to build the navbar of the page.
  <section> tag: section element is used to define the midsection part of the page, which can contain the information about the upcoming events, text content, or whatever a developer wants it to display.
- **<main> tag:** The main element is also used to define the middle content on the web page. It can contain text or other elements to show the content on the web page.
- **<aside> tag:** The aside element defines the content on the side of the web page.
- **<footer> tag:** Footer is the element mainly used to provide the copyrights or some extra links that are available on the web page.
- **<table> tag:** The table tag is one of the most important elements available in HTML..
- **<form> tag:** The form tag is also a very useful and important tag. It is used to build a web page form that can be a **login** or a **submission** form.
  <figure> and <figcaption> tag: The figure tag contains the self-contained content such that images, graphs, code content, etc. **<details> and <summary> tag:** The details tag contains the information that will be visible on the page when the user demands it to display. **<time> tag:** Time tag the time or the datetime.
- **<mark> tag:** The mark tag contains the content that is marked or highlighted to show the importance of the text

(b) Explain the structure of the HTTP request and response message in detail

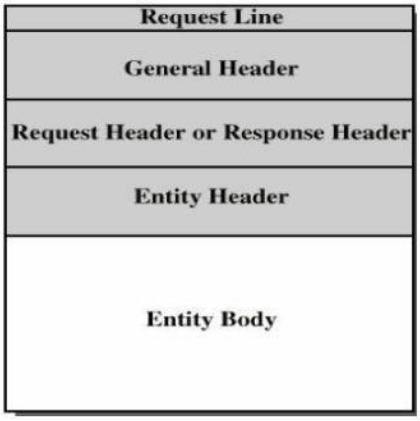
- Hypertext Transfer Protocol (HTTP) is the communication protocol used by the Internet to transfer hypertext documents.
- A protocol to transfer hypertext requests and information between servers and browsers

HTTP message is the information transaction between the client and server.

Two types of HTTP Message:

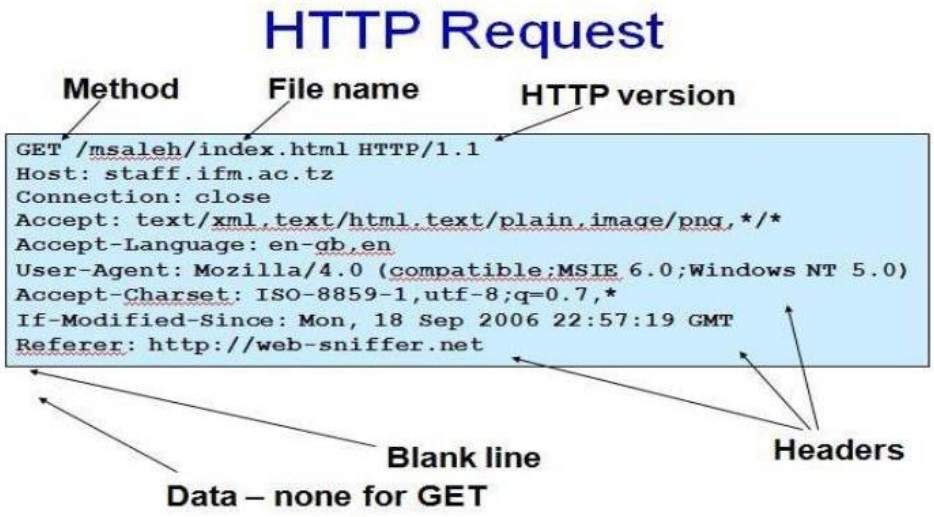
a. Requests Client to server

b. Responses Server to client



HTTP Request Headers

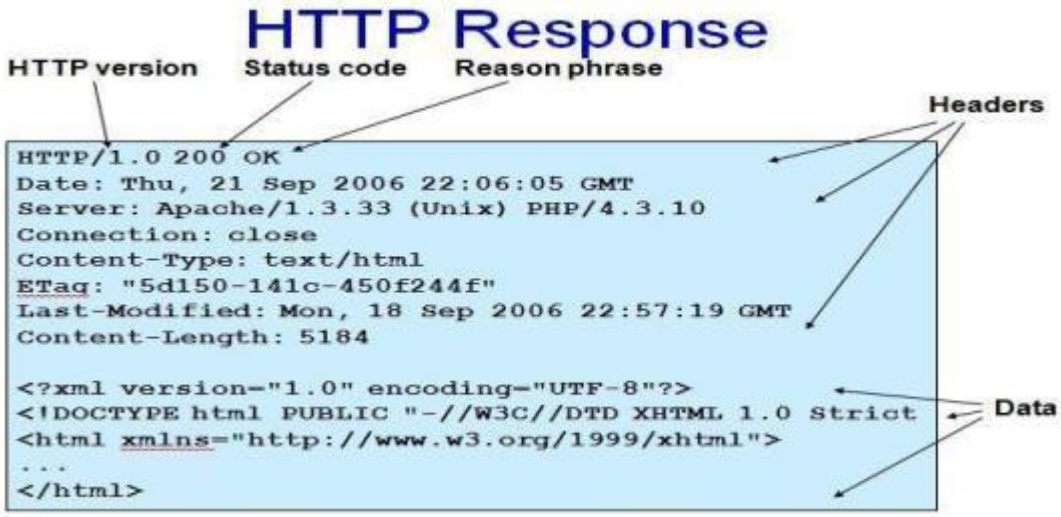
Header	Description
From	Email address of user
User-Agent	Client s/w
Accept File	File types that client will accept
Accept-encoding	Compression methods
Accept-Language	Languages
Referrer	URL of the last document the client displayed
If-Modified-Since	Return document only if modified since specified
Content-length	Length (in bytes) of data to follow



HTTP response header

HTTP Response Headers

Header	Description
Server	Server software
Date	Current Date
Last-Modified	Modification date of document
Expires	Date at which document expires
Location	The location of the document in redirection responses
Pragma	A hint, e.g., no cache
MIME-version	
Link	URL of document's parent
Content-Length	Length in bytes
Allowed	Requests that user can issue, e.g., GET



7. (a) Develop three ways to insert a CSS in a document with example.

An **external stylesheet** is a standalone .css file that is linked from a web page. The advantage of external stylesheets is that it can be created once and the rules applied to multiple web pages.

An **internal stylesheet** holds CSS rules for the page in the **head** section of the HTML file. The rules only apply to that page, but you can configure CSS classes and IDs that can be used to style multiple elements in the page code.

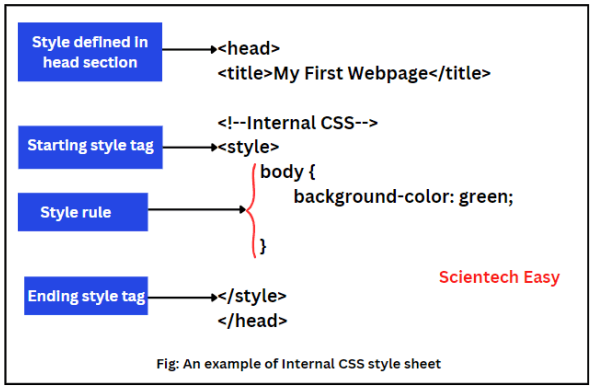


Fig: An example of Internal CSS style sheet

```
<!DOCTYPE html>
<html>
<head>
<style>
   body {
     background-color: lightgrey;
   }
   h1 {
     color: green;
     text-align: center;
   }
</style>
</head>
<body>
    <h1>This is a heading.</h1>
</body>
</html>
```

Inline styles relate to a specific HTML tag, using a **style** attribute with a CSS rule to style a specific page element.

```
<!DOCTYPE html>
<html>
<head>
    <title>Inline CSS Example</title>
</head>
<body>
    <h1 style="color: red; text-align: center;">This is a Heading</h1>
    <p style="font-size: 18px; color: green;">This is an inline-styled paragraph.</p>
</body>
</html>
```

Using external CSS stylesheets

An HTML page styled by an external CSS stylesheet must reference the .css file in the document head. Once created, the CSS file must be uploaded to your server and linked in the HTML file with code such as:

<link href="style.css" rel="stylesheet" type="text/css">

```
/* styles.css */
body {
   background-color: lightgrey;
}
h1 {
  color: darkblue;
  text-align: center;
}
p {
  font-size: 18px;
  color: black;
}
```

HTML Document (index.html):

```
<!DOCTYPE html>
<html>
<head>
   <title>External CSS Style Sheet Example</title>

   <!--Linking external style sheet-->
   <link rel="stylesheet" type="text/css" href="styles.css" media="screen">
</head>
<body>
   <h1>This is a heading styled with an external style sheet.</h1>
   <p>This is a paragraph styled with an external style sheet.</p>
</body>
</html>
```

(b) Apply the different font attributes in CSS with suitable example

CSS Font property is used to control the look of texts. By the use of CSS font property you can change the text size, color, style and more. You have already studied how to make text bold or underlined. Here, you will also know how to resize your font using percentage.

These are some important font attributes:

1. **CSS Font color**: This property is used to change the color of the text. (standalone attribute)
2. **CSS Font family**: This property is used to change the face of the font.
3. **CSS Font size**: This property is used to increase or decrease the size of the font.
4. **CSS Font style**: This property is used to make the font bold, italic or oblique.
5. **CSS Font variant**: This property creates a small-caps effect.
6. **CSS Font weight**: This property is used to increase or decrease the boldness and lightness of the font.

Font color

- By a color name
- By hexadecimal value
- By RGB

CSS Font Family

CSS font family can be divided in two types:

- Generic family: It includes Serif, Sans-serif, and Monospace.
- Font family: It specifies the font family name like Arial, New Times Roman etc.

3) CSS Font Size

CSS font size property is used to change the size of the font.

These are the possible values that can be used to set the font size:

Font Size Value	Description
xx-small	used to display the extremely small text size.
x-small	used to display the extra small text size.
small	used to display small text size.
medium	used to display medium text size.
large	used to display large text size.
x-large	used to display extra large text size.
xx-large	used to display extremely large text size.
smaller	used to display comparatively smaller text size.
larger	used to display comparatively larger text size.
size in pixels or %	used to set value in percentage or in pixels.

CSS Font Style

CSS Font style property defines what type of font you want to display. It may be italic, oblique, or normal.

```
p { font-variant: small-caps; }
h3 { font-variant: normal; }
```

font weight

```
<p style="font-weight:bold;">This font is bold.</p>
<p style="font-weight:bolder;">This font is bolder.</p>
<p style="font-weight:lighter;">This font is lighter.</p>
<p style="font-weight:100;">This font is 100 weight.</p>
<p style="font-weight:200;">This font is 200 weight.</p>
<p style="font-weight:300;">This font is 300 weight.</p>
<p style="font-weight:400;">This font is 400 weight.</p>
<p style="font-weight:500;">This font is 500 weight.</p>
<p style="font-weight:600;">This font is 600 weight.</p>
. <p style="font-weight:700;">This font is 700 weight.</p>
. <p style="font-weight:800;">This font is 800 weight.</p>
. <p style="font-weight:900;">This font is 900 weight.</p>
```

8. (a) Examine the enhanced features in HTML 5.0 with neat example.

HTML5 introduces a number of new elements and attributes that can help you in building modern websites. Here is a set of some of the most prominent features introduced in HTML5.

- **New Semantic Elements** – These are like <header>, <footer>, and <section>.
- **Forms 2.0** – Improvements to HTML web forms where new attributes have been introduced for <input> tag.
- **Persistent Local Storage** – To achieve without resorting to third-party plugins.
- **WebSocket** – A next-generation bidirectional communication technology for web applications.
- **Server-Sent Events** – HTML5 introduces events which flow from web server to the web browsers and they are called Server-Sent Events (SSE).
- **Canvas** – This supports a two-dimensional drawing surface that you can program with JavaScript.
- **Audio & Video** – You can embed audio or video on your webpages without resorting to third-party plugins.
- **Geolocation** – Now visitors can choose to share their physical location with your web application.
- **Microdata** – This lets you create your own vocabularies beyond HTML5 and extend your web pages with custom semantics.
- **Drag and drop** – Drag and drop the items from one location to

another location on the same webpage.

HTML5 <section> Element : The <section> element defines a section in a document.

```
<section>
    <h1>WWF</h1>
    <p>The World Wide Fund for Nature (WWF) is ... </p>
</section>
```

HTML5 <article> Element: The <article> element specifies independent, self-contained content.

```
<article>
    <h1>What Does WWF Do?</h1>
    <p>WWF's mission is to stop the degradation of our
    planet's natural environment,and build a future in
    which humans live in harmony with nature.</p>
</article>
```

(b) Analyze the working principle of web server with neat sketch.

Web Server:

• Server for Web is called Web server:

o Apache (public domain)

o MS Internet Information Server

Protocol:

Protocols are agreed formats for transmitting data between devices.

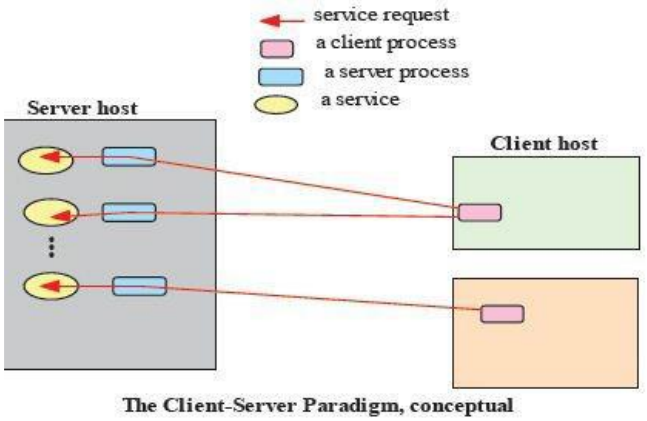
The protocol determines:

i. The error checking required

ii. Data compression method used

iii. The way the end of a message is signalled

iv. The way the device indicates that it has received the message



The Client-Server Paradigm, conceptual

- Provide responses to browser requests, either existing documents or dynamically Built documents.

- Browser-server connection is now maintained through more than one request- Response cycle

- All communications between browsers and servers use Hypertext Transfer Protocol

- Web servers run as background processes in the operating system.
- Monitor a communications port on the host, accepting HTTP messages when they appear

All current Web servers came from either
1. The original from CERN
2. The second one, from NCSA

- Web servers have two main directories:
1. Document root (servable documents)
2. Server root (server system software)

- Document root is accessed indirectly by clients
- Its actual location is set by the server Configuration file
- Requests are mapped to the actual location
- Virtual document trees
- Virtual hosts
- Proxy servers
- Web servers now support other Internet protocols

Functions of web server

Various functions of web server are -

1. The web servers **accepts the requests** from the web browsers.

2. The user **request is processed** by the web server.

3. The web servers respond to the users by **providing the services** which they demand for over

the web browsers.

4. The web servers **serve the web based applications.**

5. The DNS translate the **domain names into the IP addresses.**

6. The servers **verify** given address exists, **find necessary files** ,run appropriate scripts exchange

cookies if necessary and returns back to the browser.

7. Some servers actively participate in **session handling techniques**.

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