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SYJC

Information Technology

Revision Notes - By Sai Sir

IT XII STD

Chapter 1:

Advanced Web Designing

Q1.What is form tag? Explain different attributes of form tag.

Ans:

- Forms in HTML is used to accept user input. The form in html is created as <form> </form> tag.

- **The HTML <form> tag syntax:**

```
<form action="Script URL“ method="GET|POST">
        form elements like input, text area etc.
</form>
```

- **<Form> tag attributes:**
  - Name: It specifies a name to a form.
  - Action: The action attribute specifies the path where the form is to be submitted.
  - Method: Two types of method attributes used when submitting the form data.

i) GET method :

- The default method.
- The data is visible in the address bar.
- It is better for data which is not sensitive. The number of characters in GET method depends on browser.

ii) POST Method :

- Data sent does not display the form data in the address bar.
- It is a secure method to submit sensitive or personal information.
- It does not have size limitations as in GET method.

Q2. Explain different input type with example.
Ans:

Sr. No.	Input type	Description
1	<input type="color">	Defines a color picker
2	<input type="number">	Defines a field for entering a number
3	<input type="url">	Defines a field for entering a URL
4	<input type="image">	Defines an image as a submit button
5	<input type="date">	Defines a date picker with the year, month and day
6	<input type="email">	Defines a field for an e-mail address
7	<input type="month">	Defines a month and year control in format is "YYYY-MM"
8	<input type="range">	Define a range control. Default range is 0 to 100.
9	<input type="datetime-local">	Defines a date picker that includes the year, month, day and time.
10	<input type="time">	Defines a control for entering a time.
11	<input type="week">	Defines a week and year control.
12	<input type="search">	Defines a text field for entering a search string like a site search or Google search.
13	<input type="file">	Defines a file-select field and a "Browse" button for file uploads.
14	<input type="tel">	Used to define input fields that should contain a telephone number.

Example:

```
<html>
   <head>
            <title>  forms in html 5  </title>
   </head>
<body>
  <form>
     Name:<input type="text" autocomplete><br><br>
     Email Id:<input type="email" name="email"><br><br>
     Date of inception:<input typ="date" name="bday"><br><br>
     Choose your color:<input type="color" name="color"><br><br>
     Month:<input type="month"><br><br>
     Range:<input type="range"><br><br>
     Office time:<input type="time" name="usr_time"><br><br>
     No. of years completed(between 1 to 100):
          <input type="number" min="1" max="100"><br><br>
    Office phone number:  <input type="tel" name="phone" placeholder="12-
                    0123456789" pattern=" [0- 9]{2}-[0-9]{10}" required><br><br>
    Add your home page:  <input type="url" name="homepage"><br><br>
   Search google:<input type="search"><br><br>
   Choose file:<input type="file"><br><br>
    <input type="image" src="C:\go.jpg" height="50" width="50" alt="click here”>
</form>
</body>
</html>
```

Output:

Q.3. Explain <meta> tag with use of its attributes.

- meta tag is a tag in html that describes some aspects of contents of a webpage.
- Html <meta> tag is used by search engines to search information that is provided with the webpage.
- This is empty tag (singular tag) which carries information within its attributes.
- <meta> tag is placed between the <head>and </head> tags.
- metadata will not be displayed on the webpage.

Attributes of meta tag:

Attribute	Values	Description
Name	The value of the name attribute can be related to any of the following- i) Author ii) Description iii) Keywords iv) copyright e.g. <meta name = "author" >	Specifies the Name of the meta-data like the author, keywords or description.
Content	It can have any textual matter related to the name as in eg. i. <meta name = "author" content = "Balbharti">	Here content of author is balbharati.
Charset	UTF-8, Big5 e.g <meta charset="UTF-8"> <meta charset="Big5">	Specifies the character encoding used by the document, This is called a character encoding declaration. UTF-8 For Indian characters Big5 — for Chinese characters
http-equiv	refresh , set-cookie, content-type, expires, e.g. <meta http-equiv="refresh"content="5"> <meta http-equiv="set-cookies"> <meta http-equiv="content-type"content="text/ html"charset="Big5"> <meta http-equiv="expires" content="userid=pqr; expires=Wednesday, 8-feb-2018 23:59:59 GMT;">	Used for http response message headers. Here the page will get refresh after every 5 seconds. The browser sends the cookies back to the server. Specifies the character encoding for the document Here page session will get expire at specified date and time.

Example of <meta> tag:

```
<html>
<head>
 <title>meta tag examples</title>
 <meta name = "authors" content = "Balbhartr>
<meta name = "description" content = "Advance web designing">
<meta name = "keywords" content = "htm15, learn htm15, list in htm15">
<meta name="copyright" content = " copyright Balbharti All right Reserve">
</head>
<body>
<p> Welcome to HTML5 </p>
</body>
 </html>
```

Q.4. Explain different restriction attributes of input tag.

Sr. No.	Attribute	Description
1	Disabled	Specifies that an input field should be disabled.
2	Max	Specifies the maximum value for an input field.
3	min	Specifies the minimum value for an input field.
4	pattern	Specifies a regular expression to check the input values.
5	read only	Specifies that an input field is read only (cannot be changed).
6	placeholder	This acts as a temporary label showing the purpose of a text field without requiring a label tag.
7	required	Specifies that an input field is required (must be filled out).
8	autocomplete	Specifies whether a form or input field should have autocomplete On or Off. It Specifies that the input field

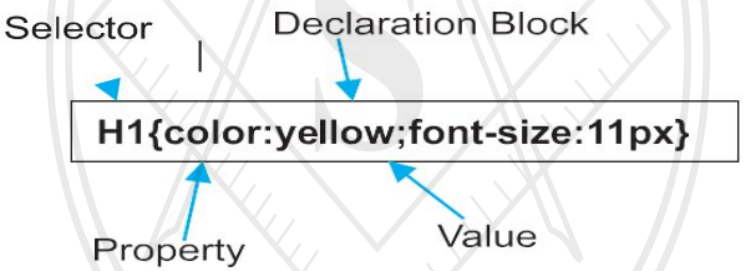
		should automatically get focus when the page loads.
9	height and width	Specifies the height and width of an <input type="image">
10	Multiple	Specifies that the user is allowed to enter more than one value in the <input> element.

Q.5. What is cascading Style Sheets in HTML5

- CSS stands for Cascading Style Sheets.
- CSS describes how HTML elements are to be displayed on screen.
- CSS Saves lot of work.
- It can control the layout of multiple web pages all at once.
- CSS allows you to control the look and feel of Several pages by changing a single Source.

Q.6.Explain syntax and structure of Cascading Style Sheets in HTML5

CSS Syntax:



Selector :

Selector indicates the HTML element you want to style. It could be tag like <h1>,<body> etc.

Declaration Block :

The declaration block Can Contain One or more declarations separated by a semicolon.

For the above example, there are two declarations.

Color: yellow;
font-size:11px;

Declaration contains a property name and value, separated by olon.

Property: A Property is a type of attribute of HTML element. That could be

Color, Border etc.

Value: Valuesare assigned to CSS properties In the example, value yellow s assigned to color property

Selector{ Property1: value l; Properry2:value 2}

Q.6. What are different types of CSS with examples.

- There are three methods of implementing styling information to an HTML document.

1. Inline CSS
2. Embedded style sheet or INTERNAL CSS
3. EXTERNAL CSS

Q.7. Explain Inline style sheet with example.

1. Inline style sheet:

- It uses the style ATTRIBUTE in the HHTML start tag.
- Inline CSS is used to apply CSS on A single line or element.

For EXAMPLE :

```
<p style="color : blue">Hello CSS</p>
```

Q.8. Explain Internal style sheet with example.

2. Embedded style sheet or internal CSS :

- This is used to apply CSS on a single document or page.
- It can affect all the elements of the page. It is written inside the STYLE tag within HEAD section of html.

EXAMPLE :

```
<!DOCTYPE html>
 <HTML>
  <HEAD>
    <STYLE>
        h1  {  color: Red;  }
   </STYLE>
```

```
  </HEAD>
 <BODY>
        <h1>The internal style sheet is applied on this heading</h1>
         <p>This paragraph will not be affected </p>
</BODY>
</HTML>
```

Q.9. Explain External style sheet with example.

- The external style sheet is generally used when you want to make changes on multiple pages.
- It facilitates to change the look of the entire web site by changing just one file.
- It uses the <link> tag on every page and the link tag should be put inside the head section.
- An external style sheet can be written on any text editor, and must be saved with .css extension.

Example:

ExterCSS.css file

```
p {
        font-family:arial;    font-size:50px;    letter-spacing:15px;
        padding:30px;         color:white;       text-decoration:overline;
   }

h1{
      text-align:right;       font-size:30px;    letter-spacing:12px;
      padding:20px;           border:red;        color:purple
  }

Body
  {
     background-color:green
  }
```

Ext1.html

```
<!DOCTYPE html>
```

```
<HTML>
<HEAD>
        <title>External CSS</title>
        <link rel="stylesheet" type="text/css" href="ExterCSS.css">
</HEAD>
<BODY>
    <h1>This is H1 heading text</h1>
    <p>This is paragraph tag</p>
</BODY>
</HTML>
```

Ext2.html

```
<!DOCTYPE html>
<HTML>
<HEAD>
        <title>External CSS</title>
        <link rel="stylesheet" type="text/css" href="ExterCSS.css">
</HEAD>
<BODY>
    <h1>The internal style sheet is applied on this heading</h1>
    <p>This paragraph will not be affected </p>
</BODY>
</HTML>
```

Q.10. What is CSS Id Selector? Explain with example.
A: The Id selector selects the id attribute of an HTML element to select a specific element. An id is always unique within the page so it is unique element. It is written with the HASH (#) character.
Example:

```
<!DOCTYPE html>
<html><head>
<style>
#para1{text-align: center; color: magenta}
</style>
</head>
<body>
<p id="para1">HELLO Students</p>
<p id="para1">This paragraph will not be affected</P>
</body> </html>
```

Q.11. What is CSS class selector? Explain with example.
A: The class selector selects HTML elements with a specific class attribute. It is used with a period character '.' (full stop symbol) followed by the class name. The class selector is used when you want to change a group of elements within your html page.
example:

```
<!DOCTYPE html>
<html><head>
<style>
.intro {text-align: center; color: blue}
</style></head>
<body>
<h1 class="intro">this heading is blue and center-aligned.</h1>
<p class="intro">this paragraph is blue and center-aligned.</p>
</body> </html>
```

Q.12. what is universal selector? Explain with example.
A: The universal selector is used as a wildcard character. It selects all the elements on the webpages.

Example:

```
<!DOCTYPE html>
<html><head><style>
* { color: green; font-size: 20px;}
</style></head>
<body>
This css style will be applied on Entire page. It does not check tag or plain text<br>
<h2>This css is applied to heading</h2>
<p id="para1">IT is applied to first paragraph</P>
<p>Also to second paragraph</p>
</body>/html>
```

Q.14. what is Group selector?
A: The grouping selector is used to select all the elements with the same style definitions. It is used to minimize the code. Commas are used to separate each selector in grouping.

Q.14. Explain positioning in CSS? List types of positioning in css.
A: CSS helps to position the HTML elements. The position property is used to set position for an element. The element can be positioned using the top, bottom, left & right properties.
Types of positioning in css.
Static, fixed, Relative & Absolute

Q15. What are float properties?
A: The float property defines the flow of property.

- Float:left: keeps the element right side of the container.
- float:right: keeps the element left side of the container.
- Float:none: shows element as it is.

Q16. Explain display properties with its values.
A: The Display property defines how the components are going to be placed on the web page. It specifies how the element is displayed. Values used in display property are:
Inline : It is used to display an element as an inline element.
Block : It is used to display an element as an block element. It starts on a new line, and takes up the whole width of the browser window.
Block-inline : This value is very similar to inline element but the difference is that you are able to set the width & height.

None : The element is completely removed.

Q.17. What does <ol> tag define for? Explain attributes of <ol> tag.
A: The <ol> tag defines an ordered list. An ordered list can be numerical or alphabetical.
Attributes of <ol> tag:

1. Type: "1“/"a"/"I"/"i" – specifies the kind of marker to use in list.
2. Reversed: This attribute specifies that the items of the list are specified in the everse order.
3. Start: Specifies the starting number of the first item in an ordered list.

Q.18. What is unordered list? Explain its attributes.
A: An unordered list created using the <ul> tag, and each list item starts with the <li> tag. The list items in unordered lists are marked with bullets (small black circles), by default.
Attributes: Disc , circle, square.

Q.19. Explain definition list.
A: A description list is a list of items with a description or definition of each item. To define a definition list <dl> tag is used. To create items in definition list with the <dt> and <dd> tags. The <dt> tag is used to define the term whereas the <dd>tag is used to define the term’s definition.

Q.20. What <audio> tags are used for? Explain with common audio formats.
A: The <audio>element enables you to embed(or add) audio files on webpages.
Common formats:
mp3 : An audio format from MPEG(Moving / Motion Pictures Experts Group).
aac : Advanced Audio Coding, standard format on Iphone, youtube etc.
ogg : An Open container and free audio format.

Q.21. Explain <video> tag and list formats.
A: The Html <video> tag is used to embed video into your web page, it has several video sources.
There are three different formats that are commonly supported– .mp4, .Ogg and .WebM.

Q.22.What is Image Mapping?
A: An image with multiple hyperlinks is called an image map. Image map is used to connect links to different regions on the webpage.

Q.23. what is <iframe> tag used for?
A: The <iframe> element creates an inline frame. Inline frames are often used in online advertising, where the contents of the <iframe> is an advertisement from an external party.

Q.24. What is web hosting?
A: Web hosting is the service of providing storage space. The website is made available on the Internet with the help of web hosting.

Q.25. What is web host? Explain with types of web hosting.
A: The companies that provides web hosting services are called web hosts. Web hosts own and manage web servers. These web servers offer uninterrupted Internet connectivity.
Types of Web hosting:
Shared hosting: It is cost effective. It gives domain name to your website.
Free hosting: There are some hosting websites which provide you free hosting of the website for limited period of time.
Dedicated hosting: These are paid hosting servers for large websites.

PROGRAMS:

Q.1. Write A PROGRAM using html with following CSS SPECIFICATION.
The BACKGROUND colour of the COMPANY NAME should be in green.
The text colour of the COMPANY NAME should be red.
The HEADING should be LARGE with font "comic sans ms"
The description of the COMPANY should be displayed in blue color in a paragraph.

A: <!DOCTYPE html>
<html>
<HEAD>
<title>Forms in html 5 </TITLE>
<style>
p{font-weight:100;font-style:italic;font-family:Bahnschrift;font-size:50px;color:blue;}
h1{color:red;text-align:center;font-family:Comic Sans MS;background-color:green}
h2{color:red;text-align:center;font-family:Comic Sans MS;}
</style></head>
<body>
<h1>INTERNET OF THINGS (IoT)</h1>
<h2> WELCOME TO OUR COMPANY </h2>
The internet of things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.
</body></html>

Q.2. Write Html5 code with CSS AS follows-
To create form to accept NAME,AGE, EMAIL ADDRESS, from the user.
create a SUBMIT button to send the data.
The heading of the form should have a background colour and a different font style.

A: <!DOCTYPE html>
<html>

```
<HEAD>
<title>Form in html 5 </TITLE>
<style>
h1{color:red;text-align:center;font-family:Comic Sans MS;background-
color:yellow}
</style></head>
<body><form>
<h1> WELCOME TO CSS </h1>
NAME: <input TYPE="TEXT" AUTOCOMPLETE placeholder="enter your
name" autofocus><BR><BR>
AGE:<INPUT TYPE="number" NAME="age" required><BR><BR>
E-MAIL:<INPUT TYPE="EMAIL" NAME="EMAIL" required><BR><BR>
<input type="submit" name="Submit" value="Submit">
</form></body></html>
```

Q.3. Write Html5 code with CSS AS follows-
Create ordered list with NAMES of tourist Cities.
Create unordered list with tourist places of those cities.
Divide the list into two sections left and right by using CSS.

A:
```
<!DOCTYPE html>
<html>
<HEAD><YITLE>ORDERED LIST</TITLE>
<STYLE>
ol{float:left;background-color:gold;}
ul{float:right;background-color:magenta;}
</STYLE></HEAD>
<body>
<ol type="A">
<li>LONDON</li>
<li>PARIS</li>
<li>DUBAI</li>
<li>TOKYO</li>
<li>SINGAPORE</li></ol>
<ul style="list-style-type:square">
<li>TOWER BRIDGE</li>
<li>EIFFEL TOWER</li>
<li>BURJ KHALIFA</li>
<li>TOKYO TOWER</li>
```

```
<li>BUKIT TIMHA</li></ul>
</body></html>
```

CHAPTER—2

INTRODUCTION TO SEO(search Engine Optimisation)

I.SHORT ANSWER TYPE QUESTIONS

1) What are the SEO tools do you use?

Ans:-The SEO tools that I use are Google analytic, Keyword Planner, Alexa, open site explorer, Google Webmaster.

2) What do you mean by Backlink?

Ans:-The incoming links to your website or webpage are referred to as Backlink. It is also called as an inbound link.

3) What are outbound Links?

Ans:-The outbound links are Links, from your website to another webpage or website.

4) What is the main purpose of using keyword in SEO?

Ans:-A keyword is a single word, and while a combination of those keywords makes phrases. These keywords or phrases are used by the search engines to populate the subjects over the internet. Search engine stores keywords in the database, and when a search is done, it will come up with the best possible match.

5) Why is Title Tag on Website valuable?

Ans:-Title tags are essential in SEO, as it tells about the contents on that web page. Through title tags only the search engine will notify the user, what is there in the page.

6) What is considered as more significant, creating content or building backlinks?

Ans:-Both are necessary for creating quality content is equally important to

building backlinks. Although link building is useful in building authority to a site and for ranking as well, quality content is the first element that is considered to be more responsible for ranking.

7) What are the differences between SEO and SEM?

Ans:-SEM (Search Engine Marketing), it is used for the promotion of website through paid advertising by increasing their visibility in Search Engine Result Page (SERP) in the Ads section. While SEO is optimizing the site to increase the organic ranking of a site.

8) What is robots.txt?

Ans:-Robots.txt is a text file. It is through this file. It gives instruction to search engine crawlers about indexing and caching of a webpage, file of a website or directory, domain.

II.SHORT ANSWER TYPE QUESTIONS

1) What is SEO? What are the important types of SEO methods?

Ans:-Search engine optimization or SEO is a process of keep changing the position of a web page or website in a search engine results by using keywords or phrases.

SEO is the art of improving the visibility of your website in SERPs through relevant keywords, and you need a webmaster to effectively implement the best practices of SEO.

Two Types of SEO are:

On Page Optimization

Off Page Optimization

2). Difference between On-page SEO and Off-page SEO?

On-page SEO is the practice of improving the design, code, functionality, and navigation structure of the website to give users an easy to navigate and flawless user experience. A lot of things come under On-page optimization and here are the some very important of them:

i.Keywords

ii. Content

iii. Page Titles

iv. Meta Description

v.Meta Tags

vi. URL Structure

Off-page SEO consists of all the activities of link building to build high-quality backlinks from various websites. There are a lot of activities needs to perform to get the backlinks from the high authority website to pass the link juice towards our website. Here are the activities you can consider in your worklist to generate high quality and authority backlinks pointing towards your website.

• Directory submission

• Social bookmarking

• Business listings

• Blog commenting

• Forum marketing

2) Explain any two page content optimization points.

Ans:-Content optimization is the process of making sure content is written in a way that it can reach the largest possible target audience. The process of optimizing content should include making sure associated keywords are present, adding meta and title tags, and relevant links.

3) Explain in short White Hat technique.

Ans:-The Term “white hat SEO ” refers to SEO tatics that are in line with the terms and conditions of the major search engines, including Google.

White hat SEO is the opposite of Black Hat SEO. Generally, white hat SEO refers to any practice that improves your search rankings on a search engine results page(SERP) while maintaining the integrity of your website and staying within the bounds as defined by Google. Examples of white hat SEO include:

- Offering quality content and services

- Fast site loading times and mobile-friendliness
- Using descriptive, keyword-rich meta-tags
- Making your site easy to navigate

.

4) What is Black Hat SEO?

Ans:- In order to get a high ranking in SEO search engine result page, websites go for various methods and techniques which are characterized by two categories. One method that is acceptable by search engine guidelines is known as White Hat SEO, while the other method which is not acceptable by search engine guidelines is known as Black Hat SEO.

5) How often should you perform a link audit?

Ans:-A link audit may be a tedious and complicated process. If you have just started on building links, you can do an audit quite often. But a complete link audit should be done approximately once a year.

CHAPTER—3

ADVANCE JAVASCRIPT

1. Define switch case statement in JavaScript.

Ans:- The switch statement evaluates an expression, matching the expression's value to a case clause, and executes statements associated with that case, as well as statements in cases that follow the matching case.

A default clause; if provided, this clause is executed if the value of expression doesn't match any of the case clauses.

```
switch (expression)
 {
 case value_1:
statement_1;
 break;
 case value_2:
 statement_2;
 break;
 case value_3:
 statement_3;
break;
default:
default_statement;
}
```


2. What are the uses of loops?

Ans:-- Very often when you write code, you want same block of code to run a number of times. You can use looping statement in your code to do this. Loops are handy, if you want to run the same code over again and again, each time with different values you can use loops.

3. Define the types of looping statement.

Ans:-- The statements for loops provided in JavaScript are:

- for statement
- do...while statement
- while statement

4. Define the syntax of for..loop.

Ans: he for loop repeats a block of code as long as a certain condition is met. It is typically used to execute a block of code for certain number of times. Its syntax is:

```
for (initialization; condition; increment) {
  // Code to be executed
}
```

5. Define the syntax for while loop.

Ans:-The while loop loops through a block of code as long as the specified condition evaluates to true. As soon as the condition fails, the loop is stopped. The generic syntax of the while loop is:

```
  while(condition) {
  // Code to be executed
}
```

6. Define break statement.

Ans:-- Break statement is used to jump out of loop. It is used to make an early exit from a loop. When keyboard break is encountered inside the loop, control automatically passes to the next statement after the loop.

7. Define continue statements.

Ans:-- The continue statement breaks one iteration (in the loop), if a specified condition occurs, and continues with the next iteration in the loop.

8. What do you mean by objects in JavaScript?

Ans:-- JavaScript is designed on a simple object-based paradigm. An object is a collection of properties, and a property is an association between a name (or key) and a value. A property's value can be a function, in which case the property is known as a method. In addition to objects that are predefined in the browser, you can define your own objects.

Objects in JavaScript, just as in many other programming languages, can be compared to objects in real life. The concept of objects in JavaScript can be understood with real life, tangible objects.

In JavaScript, an object is a standalone entity, with properties and type. Compare it with a cup, for example. A cup is an object, with properties. A cup has a color, a design, weight, a material it is made of, etc. The same way, JavaScript objects can have properties, which define their characteristics.

9. What do you mean by innerHTML?

Ans:-To access an HTML element, js can use the document.getElementById(id) method..The id attribute defines the HTML element. The innerHTML property defines the HTML content.

Ex:-

<script>

document.getElementById("demo").innerHTML="information technology";

<script>

10. What is window object?

Ans:--The window object represents an open window in a browser. If a document contain frames (<iframe> tags), the browser creates one window object for the HTML document, and one additional window object for each frame. There is no public standard that applies to the Window object, but all major browsers support it.

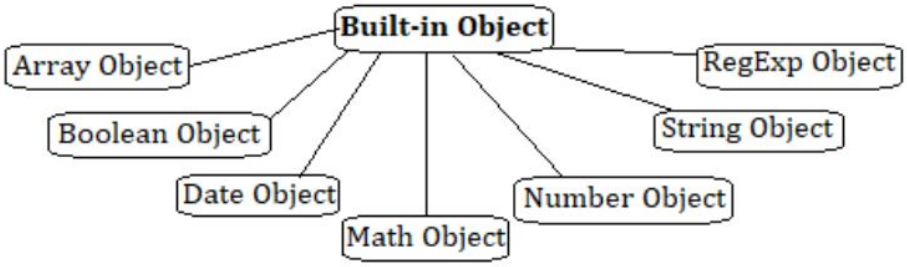
11. Define JavaScript Event?

Ans:- Events are actions done by the user or an application that occurs on the webpage.

Event	Description
Onchange	An HTML element has been changed
Onblur	It occurs when user leaves field or losses focus of an element
Onselect	It occurs when user changes content of an element or selects dropdown value. Eg Textbox, password, select box, textarea etc.
Onsubmit	It occurs when user click on submit button.
Onreset	It occurs when user click on reset button
Onload	It occurs when page/image has been loaded.

12. What is JavaScript Built in Objects?

Ans:-- JavaScript has several built-in or core language objects. These built-in objects are available regardless of window content and operate independently of whatever page your browser has loaded.



13. What do you mean by string object?

Ans:- String is used to store zero or more characters of text within single or double quotes. String object is used to store and manipulate text.

Sr.No.	Method & Description
1	charAt() Returns the character at the specified index.
2	charCodeAt() Returns a number indicating the Unicode value of the character at the given index.
3	indexOf() Returns the index within the calling String object of the first occurrence of the specified value, or -1 if not found.
4	lastIndexOf() Returns the index within the calling String object of the last occurrence of the specified value, or -1 if not found.
5	localeCompare() Returns a number indicating whether a reference string comes before or after or is the same as the given string in sort order.

6	match() Used to match a regular expression against a string.
7	replace() Used to find a match between a regular expression and a string, and to replace the matched substring with a new substring.
8	search() Executes the search for a match between a regular expression and a specified string.
9	split() Splits a String object into an array of strings by separating the string into substrings.
10	substr() Returns the characters in a string beginning at the specified location through the specified number of characters.
11	substring() Returns the characters in a string between two indexes into the string.
12	toLocaleLowerCase() The characters within a string are converted to lower case while respecting the current locale.
13	toLocaleUpperCase() The characters within a string are converted to upper case while respecting the current locale.

14	toLowerCase() Returns the calling string value converted to lower case.
15	toString() Returns a string representing the specified object.
16	toUpperCase() Returns the calling string value converted to uppercase.

14. Explain Math object.

Ans:- the built-in math object includes mathematical constants and functions. You need not to create the math object before using it. Following table contains list of math object methods: eg- var x= 56.899; alert(Math.ceil(x));

Sr.No.	Method & Description
1	abs(x) Returns the absolute value of a number.
2	cbrt(x) Returns the cube root of a number.
3	ceil(x) Returns the smallest integer greater than or equal to a number.
4	floor(x) Returns the largest integer less than or equal to a number.

5	max() Returns the largest of zero or more numbers.
12	min() Returns the smallest of zero or more numbers.
13	pow(x,y) Returns base to the exponent power, that is, base exponent.
14	random(x) Returns a pseudo-random number between 0 and 1.
15	round() Returns the value of a number rounded to the nearest integer.
16	sin() Returns the sine of a number.
17	sqrt(x) Returns the square root of a number.

15. Define date object.

Ans:- the date object is used to create date and time values. It is created using new keyword. There are different ways to create new to create new date object.

Var currentdate= new Date();

Var currentdate= new Date(miliseconds);

Var currentdate= new Date(dateString);

Var currentdate = new Date(year, month, day, hours,minute,seconds,milliseconds);

Method	Description
getFullYear()	Get the year as a four digit number (yyyy)
getMonth()	Get the month as a number (0-11)
getDate()	Get the day as a number (1-31)
getHours()	Get the hour (0-23)
getMinutes()	Get the minute (0-59)
getSeconds()	Get the second (0-59)
getMilliseconds()	Get the millisecond (0-999)
getTime()	Get the time (milliseconds since January 1, 1970)
getDay()	Get the weekday as a number (0-6)

Date.now()	Get the time. ECMAScript 5.

16. Define Array object.

Ans:- An Array is an object that can store a collection of items. Javascript arrays are used to store multiple values in single variable. An array is a special variable which can hold more than one value at a time. Arrays become really useful when you need to store large amounts of data of the same type. You can create an array in javascript as given below.

Var fruits=[“mango,apple,orange,grapes”];

Eg:-- var fruitname=fruits[0];

Document.getElementById(“demo”).innerHTML=fruits[1];

The following table lists the standard methods of the Array object.

Method	Description
concat()	Merge two or more arrays, and returns a new array.
copyWithin()	Copies part of an array to another location in the same array and returns it.
entries()	Returns a key/value pair Array Iteration Object.
every()	Checks if every element in an array pass a test in a testing function.
fill()	Fill the elements in an array with a static value.
filter()	Creates a new array with all elements that pass the test in a testing function.
find()	Returns the value of the first element in an array that pass the test in a testing function.
findIndex()	Returns the index of the first element in an array that pass the test in a testing function.

forEach()	Calls a function once for each array element.
from()	Creates an array from an object.
includes()	Determines whether an array includes a certain element.
indexOf()	Search the array for an element and returns its first index.
isArray()	Determines whether the passed value is an array.
join()	Joins all elements of an array into a string.
keys()	Returns a Array Iteration Object, containing the keys of the original array.
lastIndexOf()	Search the array for an element, starting at the end, and returns its last index.
map()	Creates a new array with the results of calling a function for each array element
pop()	Removes the last element from an array, and returns that element.
push()	Adds one or more elements to the end of an array, and returns the array's new length.
reduce()	Reduce the values of an array to a single value (from left-to-right).
reduceRight()	Reduce the values of an array to a single value (from right-to-left).
reverse()	Reverses the order of the elements in an array.
shift()	Removes the first element from an array, and returns that element.
slice()	Selects a part of an array, and returns the new array.
some()	Checks if any of the elements in an array passes the test in a testing function.
sort()	Sorts the elements of an array.

Chapter 4
Emerging technologies

Q.1. What is IoT?

Ans: The Internet of things (IoT) is the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity.

Q.2. What are the advantages of IoT?

Ans: **Efficient resource utilization :** If we know the functionality and the way that how each device works, we definitely increase the efficient resource utilization as well as monitor natural resources.

Minimize human effort : As the devices of IoT interact and communicate with each other and do lot of task for us, then they minimize the human effort.

Time saving : As it reduces the human effort then it definitely saves out time. Time is the primary factors in automation which can save through IOT platform.

Enhance Data Collection : IoT devices can collect data from environment like weather, sound, pollution etc. This data then can be used to take decisions.

Improve, security : IoT based security systems can make home or office environment secure.

Q.3. What are the disadvantages of IoT?

Ans: **Privacy :** Even without the active participation on the user, the IoT system provides substantial personal data in maximum detail.

Complexity: The designing, developing, maintaining and enabling the large technology to IoT system is quite complicated.

Q.4. Give some applications of IoT.

Ans: **Smart lighting** - Illumination of light is controlled on the basis of day light.

Smart thermostats - Allows users to schedule, monitor and remotely control home temperatures.

Smart locks and garage-door openers - Password based or facial recognition based doors and locks.

Smart security cameras – Security cameras that can identify known and unknown person and raise alarm, in case of security threat.

Smart traffic signals – Signal that can adjust their timing to accommodate commutes and holiday traffic and keep cars moving.

Q.5. Explain in detail about Cloud Computing.

Ans: Cloud computing is a model for enabling, convenient on-demand network access to a shared pool of computing resources like network, servers, storage, applications and services released with service provider interaction.

Q.6. What are the different Models of Cloud Computing?

Ans: There are three primary service models of cloud computing that are Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

Q.7. Explain Models of Cloud Computing?

Ans: **1. Infrastructure as a service [IaaS] -** IaaS gives users access to storage, networking, servers and other computing resources via the cloud. While the user is still responsible for managing their applications, data, middleware, etc. IaaS provides automated and scalable environments that provide a high degree of control and flexibility for the user.

Features:

- Instead of purchasing hardware outright, users pay for IaaS on demand.
- Infrastructure is scalable depending on processing and storage needs.
- Enterprises saves the costs of buying and maintaining their own hardware

Examples : Amazon web services (AWS) ec2, Microsoft Azure VM, Google Compute Engine (GCE)

2. Platform as a service[Paas]: A service provider offers access to a cloud-based environment in which users can develop, manage and deliver applications. In addition to storage and other computing resources, users are able to use a suite of prebuilt tools to develop, customize and test their own applications.

Features:

- PaaS provides a platform with tools to test, develop and host applications in the same environment.
- Enables organizations to focus on development without having a worry about underlying infrastructure.
- Providers manage security, operating systems, server software and backups.
- Facilitates collaborative work even if teams work remotely.

3. Software as a service[SaaS]: A service provider delivers software and applications through the internet. Users do not install applications on their local devices. Instead, the applications reside on a remote cloud network accessed through the web or an API.

Features:

- SaaS vendors provide users with software and applications via a subscription model.
- Users do not have to manage, install or upgrade software; SaaS providers manage this.
- Data is secure in the cloud; equipment failure does not result in loss of data.
- Use of resources can be scaled depending on service needs.
- Applications are accessible from almost any internet-connected device, from virtually anywhere in the world.

Examples : Google's G suite, GitHub, SAP, Slack, Dropbox

Q.8. Explain different types of Cloud Computing.

Ans: **1. Public Cloud :**

- In public cloud, all the services and supporting infrastructure are managed off-site over the internet and shared across multiple users. Public cloud are more efficient and inexpensive than private and hybrid cloud solutions.
- **Examples :** Amazon AWS, Microsoft Azure, Google Cloud Platform.

2. Private cloud :

- As the name suggests private cloud provides I.T services through the internet or a private network to selected users rather than to general public. All the data is protected behind the firewall. Private cloud solutions are preferred for enhanced security and privacy by the users.

3. Hybrid Cloud :

- Hybrid cloud environments combines both Public and Private cloud elements. The clouds in a Hybrid environment communicate over an encrypted connection and allow for the portability of data and applications. Hybrid cloud allows greater flexibility as compared to that of public and private cloud solutions.

Q.9. What are the benefits of cloud computing?

Ans: **Cost saving :** Cloud computing solutions are inexpensive than the actual overall Infrastructure set up for the I.T services.

Reliable : Cloud computing solutions are more reliable than In-house I.T infrastructure.

Mobility : Cloud computing solutions are more portable because user can access data anytime, anywhere as required.

Q.10. Explain the concept of 5G.

Ans: 5G is the fifth generation of cellular network technology. 5G is the next generation of wireless communications. It is expected to provide Internet connections that are multiple times faster than 4G LTE (Long Term Evolution).

The new 5G networks will be able to transmit very large amounts of data—but only a few blocks at a time.

- **Applications :**

1) Online 5G Games.

2) Automated Vehicles.

3) Virtual Classrooms.

Q.11 What are the features of 5G?

Ans: 1. Reduced web site load time

2. Reduced app load time.

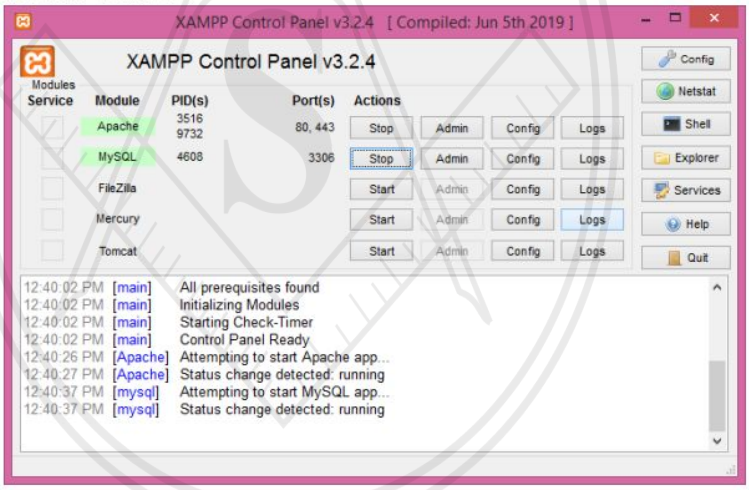
3. Multiple times faster that 4G

5. IoT based applications.

6. High speed data transfer.

XII IT Chapter #05 PHP

I.	**Introduction to PHP**
	○ The term PHP is an acronym for *PHP: **Hypertext Preprocessor**.* ○ PHP is a **server-side scripting language** designed specifically for web development. ○ Websites like www.facebook.com, www.yahoo.com are also built on PHP. ○ One of the main reason behind using PHP is that it can be easily embedded in **HTML files and HTML codes can also be written in a PHP file.** ○ The thing that differentiates PHP with client-side language like HTML is, ***PHP codes are executed on server whereas HTML codes are directly rendered on the browser.*** ○ PHP codes are first executed on the server and then the result is returned to the browser. ○ PHP runs on various platforms(Linux, Unix, Mac, Windows) ○ PHP supports a wide range of databases.
II.	**Server side scripting**
	• Web servers are used to execute server side scripting. • They are basically used to create dynamic pages. It can also access the file system residing at web server. • Scripts can be written in any of a number of server-side scripting language available. It is used to retrieve and generate content for dynamic pages. It is used to require to download plugins. In this load times are generally faster than client-side scripting. When you need to store and retrieve information a database will be used to contain data. It can use huge resources of server. It reduces client-side computation overhead. Server sends pages to request of user/client. **Examples:** • **PHP** • **Java and JSP** • **Python**
III	**What is a PHP File?**
	○ PHP files can contain text, HTML, CSS, JavaScript, and PHP code ○ PHP code is executed on the server, and the result is returned to the browser as plain HTML ○ PHP files have extension ".php"
IV.	**Syntax of writing PHP code.**
	○ A PHP script can be placed anywhere in the document. ○ A PHP script starts with <?php and ends with ?>: ***<?php*** ***// PHP code goes here*** ***?>*** ○ The default file extension for PHP files is ".php".

	○ A PHP file normally contains HTML tags, and some PHP scripting code.
V.	**First PHP program**
	Type the following code in notepad and save it inside C:\XAMPP\htdocs\<Your folder>. Name of the file should be given (E.g: first.php) *<html>* *<body>* * My first PHP page * *<?php* *echo "Hello WOrld";* *?>* *</body>* *</html>* **Execution steps:** **I. Start with XAMPP control panel and start first two services as shown below:**  **II. Open browser(chrome) and type the complete path (Eg: http://localhost/foldername)** **III. Select the file you created and it will be executed.**
VI.	**Php Variables**
	○ Variables are "containers" for storing information. ○ Creating (Declaring) PHP Variables ○ In PHP, a variable starts with the $ sign, followed by the name of the variable: ○ Example: ○ <?php

```
$txt = "Hello world!";
$x = 5;
$y = 10.5;
?>
```

Rules for declaring PHP variables:

- Variable starts with $ followed by the name of variable.
- Variable name must start with a letter or the underscore character. It can't start with a number.
- Variable names are case sensitive ($Age and $age are different)

VII. PHP Functions.

- PHP functions are similar to other programming languages.
- A function is a piece of code which takes one more input in the form of parameter and does some processing and returns a value.
- Functions in php can be either built in(eg:string functions) or user defined.

User defined functions:

There are two parts which should be clear to you –

1. **Creating a PHP Function**
2. **Calling a PHP Function**

Syntax

```
function functionName() {
  code to be executed;
}
```

Example 1:

```
<?php
function writeMsg() {  // creating(defining) the function
  echo "Hello world!";
}

writeMsg(); // calling the function; at this time function will be executed and hello world will be printed
?>
```

Example 2:

```
<html>
  <head>
    <title>Writing PHP Function</title>
```

```
  </head>

  <body>
   <?php
      /* Defining a no - parameter PHP Function */
      function writeMessage()
{
        echo "You are really a nice person, Have a nice time!";
      echo"<br>";
      echo "Welcome to Php";
 }

      /* Calling a PHP Function */
      writeMessage();
    ?>

  </body>
</html>
```

VIII.	**Variable scopes in php**

Scope can be defined as the range of availability a variable has to the program in which it is declared. There are 3 variable scopes in Php:

a. Local
b. Global
c. Static

I. ***Local scope:***

- A variable declared in a function is considered local; that is, it can be referenced solely in that function.
- Any assignment outside of that function will be considered to be an entirely different variable from the one contained in the function −
- **EG:**

```
<html>
<body>
<h1> PHP Local Scope</h1>
```

```
<?php
  $x = 4; //variable declaration and assignment

function assignx()
{
    $x=0;
    print "the value of x inside function is $x<br>";

}
    print "\$x outside of function is $x. <br />";
  assignx();//function call
  print "\$x outside of function is $x. <br />";
?>

</body>
</html>
```

II. Global scope:

In contrast to local variables, a global variable can be accessed in any part of the program. However, in order to be modified, a global variable must be explicitly declared to be global in the function in which it is to be modified. This is accomplished, conveniently enough, by placing the keyword **GLOBAL** in front of the variable that should be recognized as global.

Eg:

```
<html>
<body>
<h1> PHP Variables</h1>
<?php
  $somevar = 15;

  function addit()
{
   GLOBAL  $somevar;
    $somevar++;  //16
     $somevar++; //17
    print "Global variable Somevar is $somevar";
  }
```

```
  addit();
?>
</body>
</html>
```

III. ***Static scope:***

The final type of variable scoping that I discuss is known as static. In contrast to the variables declared as function parameters, which are destroyed on the function's exit, a static variable will not lose its value when the function exits and will still hold that value should the function be called again.

Eg:

```
<html>
<body>
<h1> PHP Static Scope of Variables</h1>
<?php
  function track()
{
     STATIC $count = 0;
     $count++;//count=1 //count=2 //count=3
     print $count;
     print "<br />";
   }
  track(); //count=1
  track();
  track();
?>
</body>
</html>
```

IX. Comments in PHP.

Comments are the statements in PHP code, which is not visible in the output of the program.

```
/* C-style comments
    These can span
multiple lines */
```

X. CONTROL STRUCTURES IN PHP:

1. The If...Else Statement

- If you want to execute some code if a condition is true and another code if a condition is false, use the if....else statement.

Syntax:-

```
if(condition)
 {
  block of statement;
  }
```

2.The ElseIf Statement

- If you want to execute some code if one of the several conditions are true use the elseif statement

Syntax:

```
if(condition)
    {
     block of statement;
     }
else if(condition)
{
   statement;

}
else
{
   statement;

}
```

Example I:

```
<html>
<body>
<h1> PHP IF..Else stmt</h1>

    <?php
      $d = date("D");

      if ($d  == "Sat")
        echo "Have a nice weekend!";

      else
        echo "Have a nice day!";
    ?>
```

```
  </body>
</html>
```

Example II:

```
<html>
  <body>
  <p>Checking System Date and printing the day of weeek!</p>
    <?php
      $d = date("D");

      if ($d == "Mon")
        echo "Have a nice Monday!";

      elseif ($d == "Sun")
        echo "Have a nice Sunday!";

      elseif($d=="Wed")
       echo "Today is Wednesday!!";

else
        echo "Have a nice day!";
    ?>
  </body>
</html>
```

XI. Loops in Php

- Loops in PHP are used to execute the same block of code a specified number of times. PHP supports following four loop types.
- **for − loops** through a block of code a specified number of times.

Syntax:

```
for (initialization; condition; increment)
{
 code to be executed;
}
```

Example:

```
<html>
  <body>
    <?php
```

```
        for( $i = 0; $i<5; $i++ )
    {
      echo "<br>Value of i is: $i";
        }
        ?>

      </body>
    </html>
```

- **while − loops** through a block of code if and as long as a specified condition is true.

Syntax:

```
while (condition)
{
 code to be executed;
}
```

Example:

```
<html>
  <body>

    <?php
      $i = 0;
      $num = 50;

      while( $i < 10) {
        $num--;//49//48
        $i++;
      }

      echo ("Loop stopped at i = $i and num = $num" );
    ?>

  </body>
</html>
```

- **do...while − loops** through a block of code once, and then repeats

the loop as long as a special condition is true.

Syntax:

```
do
{
code to be executed;
} while (condition);
```

Example:

```
<html>
  <body>

    <?php
      $i = 0;

      do
{
        $i++;
      echo (" i = $i<br>" );
      }while( $i < 10 );
      echo ("Loop stopped at i = $i" );
    ?>

  </body>
      </html>
```

- foreach − loops through a block of code for each element in an array.

Syntax:

```
foreach( $array as $vauel ) {
 code to be executed;
}
```

Example:

```
<html>
  <body>
```

```
<?php
  $arr = array( 20,120,100,50,80,54,20,12,23,45,120);

  foreach( $arr as $val ) {
    echo "Value is $val <br />";
  }
?>

</body>
</html>
```

XII. PHP String Functions

- PHP provides various string functions to access and manipulate strings.

Function	Description
strlen()	Returns the length of a string (i.e. total no. of characters)
str_word_count()	Counts the number of words in a string
strrev()	Reverses a string
strpos()	Searches for a specific text within a string and returns the character position of the first match and if no match is found, then it will return false
str_replace()	Replaces some characters with some other characters in a string
substr()	Returns a part of a string
strtolower()	Converts a string to lowercase
substr_count()	Counts the number of times a substring occurs in a string
ucwords()	Converts the first character of each word in a string to uppercase
trim()	Removes whitespace and other predefined characters from both sides of a string

Example of using String functions:

```
<html>
  <body>
    <?php
$str="   Good morning... how are you all?@";
$str=strtolower($str);

echo "<br>String in Lower case is: $str" ;
$str=strtoupper($str);
```

```
echo "<br>String in Upper case is: $str";
$len=strlen($str);

echo "<br> Length of string is $len" ;

echo"<br>Reverse of the string is:" . strrev($str);

echo"<br>Return position of string search " .strpos($str,"ARE");

echo"<br> Removing spaces:" .trim($str);
$str=strtolower($str);

echo"<br> Capitalizing words:" .ucwords($str);

echo"<br> Using trim function" . trim("   ABC");
?>
  </body>
</html>
```

XIII **String concatenation in php**

- Use a period to join strings into one.

Example:

```
<html>
<body>
<h1> PHP String Concatenation</h1>
<?php
$str1="Hello";
$str2="World";
$str3=$str1." AND ".$str2;
$str4=$str1.$str2." How are you today ";

  print "String1  is $str1. <br />";
  print "String2 is $str2 <br />";
  print "Concatenated string is $str3 <br />";
  print "Concatenated string is $str4 <br />";
```

	?> *</body>* *</html>*
XIV.	**Arrays in PHP**
	○ An array is a data structure that stores one or more similar type of values in a single value. ○ For example if you want to store 100 numbers then instead of defining 100 variables its easy to define an array of 100 length. ○ There are three different kind of arrays and each array value is accessed using an ID c which is called array index. ○ **Indexed/ Numeric array** − An array with a numeric index. Values are stored and accessed in linear fashion. ○ **Associative array** − An array with strings as index. This stores element values in association with key values rather than in a strict linear index order. ○ **Multidimensional array** − An array containing one or more arrays and values are accessed using multiple indices
XV	**Numeric Array**
	These arrays can store numbers, strings and any object but their index will be represented by numbers. By default array index starts from zero. **Example:** *<html>* *<body>* *<?php* */* First method to create array using function. */* *$numbers = array(100, 20, 3, 4, 5, 6, 7, 8,9,10);* *foreach($numbers as $value) {* *echo "Value is $value ";* *}* *echo "++++++++++ second way ++++++++++ ";* */* Second method to create array. */* *$a[0] = "one";*

```
        $a[1] = "two";
        $a[2] = "three";
        $a[3] = "apple";
        $a[4] = "five";
$a[5]="six";
$a[6]="seven";
$a[7]="eight";
$a[8]="hi";
$i=0;
                foreach( $a as $val ) {
           echo "Element $i is $val <br />";
$i++;
        }
     ?>


   </body>
</html>
```

XVI. **Form in Php**

- A Document that containing black fields, that the user can fill the data or user can select the data.
- Casually the data will store in the data base

XVII **Form methods.**

There are two ways the from data can be sent to the web server.

- The GET Method
- The POST Method

The GET Method

The GET method sends the encoded user information appended to the page request. The page and the encoded information are separated by the **?** character.

http://www.test.com/index.htm?name1=value1&name2=value2

- The GET method produces a long string that appears in your server logs, in the browser's Location: box.
- The GET method is restricted to send upto 1024 characters only.
- Never use GET method if you have password or other sensitive information to

be sent to the server.

- GET can't be used to send binary data, like images or word documents, to the server.
- The PHP provides **$_GET** associative array to access all the sent information using GET method.

The POST Method

The POST method transfers information via HTTP headers. The information is encoded as described in case of GET method and put into a header called QUERY_STRING.

- The POST method does not have any restriction on data size to be sent.
- The POST method can be used to send ASCII as well as binary data.
- The data sent by POST method goes through HTTP header so security depends on HTTP protocol. By using Secure HTTP you can make sure that your information is secure.
- The PHP provides **$_POST** associative array to access all the sent information using POST method.

Example of GET method:

FileName: BMI.htm

```
<head>
<title>BMI-calculator example</title>
</head>
<body>
<h2>BMI-calculator example</h2>
<form action="bmioutput.php" method="GET">
<br>
Height in meters:<input type="text" name="height" maxlength="4"><br><br>
<br>Weight in kilograms:<input type="text" name="weight"
```

```
maxlength="3"><br>
<br>
<input type="submit" value="Calculate">
<input type="reset" value="Reset">
</form>
</body>
</html>
```

FileName:BMIoutput.php

```
<head>
<title>BMI-calculator example</title>
</head>
<body>
<?php
$ht=$_GET["height"];
$wt=$_GET["weight"];
$htInMs=$ht/100;
$bmi=$wt/($htInMs*$htInMs);
if($bmi<18.5)
{
        $msg="You are underweight";
}
else if($bmi>=18.5 && $bmi<=24.9)
{

        $msg="YOu have a normal weight";
```

	}
	else if($bmi>=24.9 && $bmi<=29.9)
	{
	
	$msg="YOu are over weight";
	}
	else
	{
	$msg="You are obese";
	}
	echo $msg;
	echo "
	 BMI: ". $bmi;
	
	?>
	</body>
	</html>

	*********

E - COMMERCE & E – GOVERNANCE

Q.1. What is E – commerce?

Ans: E-Commerce can be broadly defined as the process of buying and selling of goods or services using an electronic medium such as Internet. It is also referred as paperless exchange of business information using EDI, E-mail, Electronic fund transfer etc.

Q.2. What are the advantages of E – Commerce?

Ans: **Global scope:** E-commerce provides the sellers with a global reach. Now sellers and buyers can meet in the virtual world, without barrier of place (geography).

Electronic transaction: E-commerce reduces the paper work and significantly lower the transaction cost. E-Commerce enables the use of credit cards, debit cards, smart cards, electronic fund transfer via bank's website and other modes of electronic payment.

Cost Saving: E-commerce application provides users with more options to compare and select the cheaper and better option. It helps in reducing the cost of searching a product. E-commerce has enabled rural areas to access services and products, which are otherwise not available to them.

Anytime shopping: One other great advantage is the convenience. A customer can shop 24×7. The website is functional at all times, it does not have working hours like a shop.

No intermediaries: Electronic commerce also allows the customer and the business to be in touch directly, without any intermediaries. This allows for quick communication and transactions.

Public services: E-commerce helps the government to deliver public services such as healthcare, education social services at a reduced cost and in an improved manner.

Q.3. Explain Disadvantages of E – Commerce.

Ans: **Setup Cost :** The setup of the hardware and the software, the training cost of employees, the constant maintenance and upkeep are all quite expensive.

Physical presence : This lack of a personal touch can be a disadvantage for many types of services and products like interior designing or the jewellery business.

Security : Security is another area of concern. Credit card theft, identity theft etc. remain big concerns with the customers.

Goods Delivery : There may arrive some problem with fulfilment of order. Even after the order is placed there can be problems with shipping, delivery, mix-ups etc. This leaves the customers unhappy and dissatisfied.

Q.4 List different types of E-Commerce.

Ans: The primary types of E-Commerce are:

1. Business to Consumer (B2C)
2. Business to Business (B2B)
3. Consumer to Consumer (C2C)
4. Consumer to business (C2B)

Q.5. Explain Business to Consumer model.

Ans: In B2C model, business sells its products directly to a customer. A customer can view the products shown on the website. The customer can choose a product and order the same. These B2C businesses are online retailers. Example: Amazon, Flipkart etc.

Q.6. Describe Business to Business model.

Ans: In B2B model, business sells its products to an intermediate buyer who then sells the product to the final customer. a wholesaler places an order from a company's website and after receiving the consignment,

sells the product to the final customer who comes to buy the product at one of its retail outlets.

Q.7. Explain Consumer to Consumer (C2C).

Ans: In C2C model, consumer helps consumer to sell their assets like residential property, cars, motorcycles etc., or rent a room by publishing their information on the website. Website may or may not charge the consumer for its service. Example OLX, Quikr, online auction.

Q.8. What is Consumer to business (C2B).

Ans: In this model, consumers have products or services of value that can be consumed by businesses. For example, A blog can be written by an author for a business to improve sale of products.

Q.9. What are different phase of E-commerce Trade cycle?

Ans: **Pre-Sales**: It consist of two steps like Search and Negotiate. Customer search for required website for product to be purchased.

Execution: This phase consist of Order and Delivery. Customer sends an order for the selected product and after processing the order, customer receives delivery of the product.

Settlement: This phase consist of Invoice (if any) and Payment. Invoice means customer will receive a bill for purchased product.

After-Sales: This phase consists of warranty and After Sale Services. In warranty period, customer will get all maintenance services for free or at minimum cost.

Q.10. What are different Modes of payment used in E-Commerce?

Ans: **Credit Cards** : Credit cards are the most common way for customers to pay online.

Mobile Payments : Mobile payments offer a quick solution for customers to purchase on e-commerce websites. customer can pay by scanning a barcode on

an app on mobile. Examples are apps like BHIM, UPI, Paytm, Google Pay, Paypal,..etc.

Bank transfer: Transferring money from bank account is usually fast and safer than withdrawing and paying in cash because every transaction will be authenticated by checking customer's banking credentials. Example: NEFT, IMPS.

E-wallets: E-wallet is a type of electronic card which is used for transactions made online through a computer or a smartphone. E-wallet is a type of pre-paid account in which a user can store money for any future online transaction.

Q.11. Forms of E – Commerce

Ans: **M-commerce (Mobile commerce)**: M-Commerce is the buying and selling of goods and services through wireless handheld devices such as smartphones and tablets. Some of application of M-Commerce are mobile banking, ticket booking, E-bill payment, online auctions, stock market trading.

Social Commerce: Social commerce is a form of electronic commerce that involves social media, online media that supports social interaction. It enable shoppers to get advice from trusted individuals, find goods and services and then purchase them. Social commerce is the use of networking websites such as Facebook, Instagram and Twitter as vehicles to promote and sell products and services. The success of a social commerce campaign is measured by the degree to which consumers interact with the company's marketing through retweets, likes and shares.

Q.12. What is E – Commerce technology? Explain EDI.

Ans: Electronic commerce draws on technologies such as mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems and automated data collection systems.

EDI (Electronic data interchanged): EDI is the electronic interchange of business information using a standardized format; a process which allows one company to send information to another company electronically rather than on paper. Many business documents can be exchanged using EDI, two most common documents are purchase orders and invoices.

Q.13. What is E – Governance? List out advantages of E – Governance.

Ans: E – Governance: The implementation of information technology in the government processes and functions so as to cause simple, moral, accountable and transparent governance (SMART).

Advantages of E-governance :

Reduced corruption

High transparency

Increased convenience

Direct participation of constituents

Reduction in overall cost.

Expanded reach of government

Q.14. State different types of E – Governance in detail.

Ans: **Government-to-Citizen (G2C):** The Government-to-citizen refers to the government services which enable citizens to get access to wide variety of public services. It helps the ordinary people to reduce the time and cost to conduct a transaction. A citizen can have access to the services anytime from anywhere.

Government-to-Business (G2B): The Government to is the exchange of business services between Government and Business organizations. G2B provides access to relevant forms needed to comply. It aims at eliminating paper work, saving time, cost and establish transparency in the business environment, while interacting with government.

Government-to-Government (G2G): The Government-to-Government refers to the interaction between different government departments, organizations and agencies. In G2G, government agencies can share the same database using online communication. The government departments can work together.

Government-to-Employee (G2E): The Government-to-Employee is the internal part of G2G sector. G2E provides online facilities to the

employees like applying for leave, reviewing salary payment record and checking the balance of holiday.

Q.15. Explain security measures in E – Commerce.

Ans: E-Commerce security refers to the principles which guide safe electronic transactions, allowing the buying and selling of goods and services through the Internet.

Encryption: Encryption is widely used on the internet to protect user information being sent between a browser and server.

Encryption converts Plain text (readable form of data) into Cipher Text (coded form of data) means non-readable form of data. Decryption is exactly opposite process of encryption. It converts Cipher text into Plain text.

Encryption is of two types: Symmetric (Shared Secret Encryption), Asymmetric (Public-Key Encryption)

Q.16. Explain Digital Signature.

Ans: **Digital Signature**: A digital signature is also known as an electronic signature. A digital signature guarantees the authenticity of an electronic document or message in digital communication and uses encryption technique (asymmetric cryptography) to provide proof of original and unmodified documentation. Digital signatures are in e-commerce, software distribution, and financial transactions. This is the direct transfer of information between two partners

Q.17. Describe Digital Certificate.

Ans: **Digital Certificate :** A Digital Certificate is an electronic "password" that allows a person, organization to exchange data securely over the Internet using the public key infrastructure (PKI). Digital certificate is also known as public key certificate or identity certificate. In this

information is transferred between two authorized partners who have digital certificates issued by some supreme authority.