

12th Science
Information
Technology - TPS

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1

Advanced Web Designing

Chapter at a Glance

1.2 Forms in HTML5 <input> elements

<input type="color">, <input type="number">,
<input type="url">, <input type="image">,
<input type="date">, <input type="email">,
<input type="month">, <input type="range">,
<input type="datetime-local">,
<input type="time">, <input type="week">,
<input type="search">,
<input type="file">, <input type="file">,
<input type="tel">

List of common Input restrictions are :-

Disabled, max, min, pattern, read only,
placeholder, required, autocomplete,
autofocus, height and width,
multiple

1.3 Cascading Style sheets in HTML5

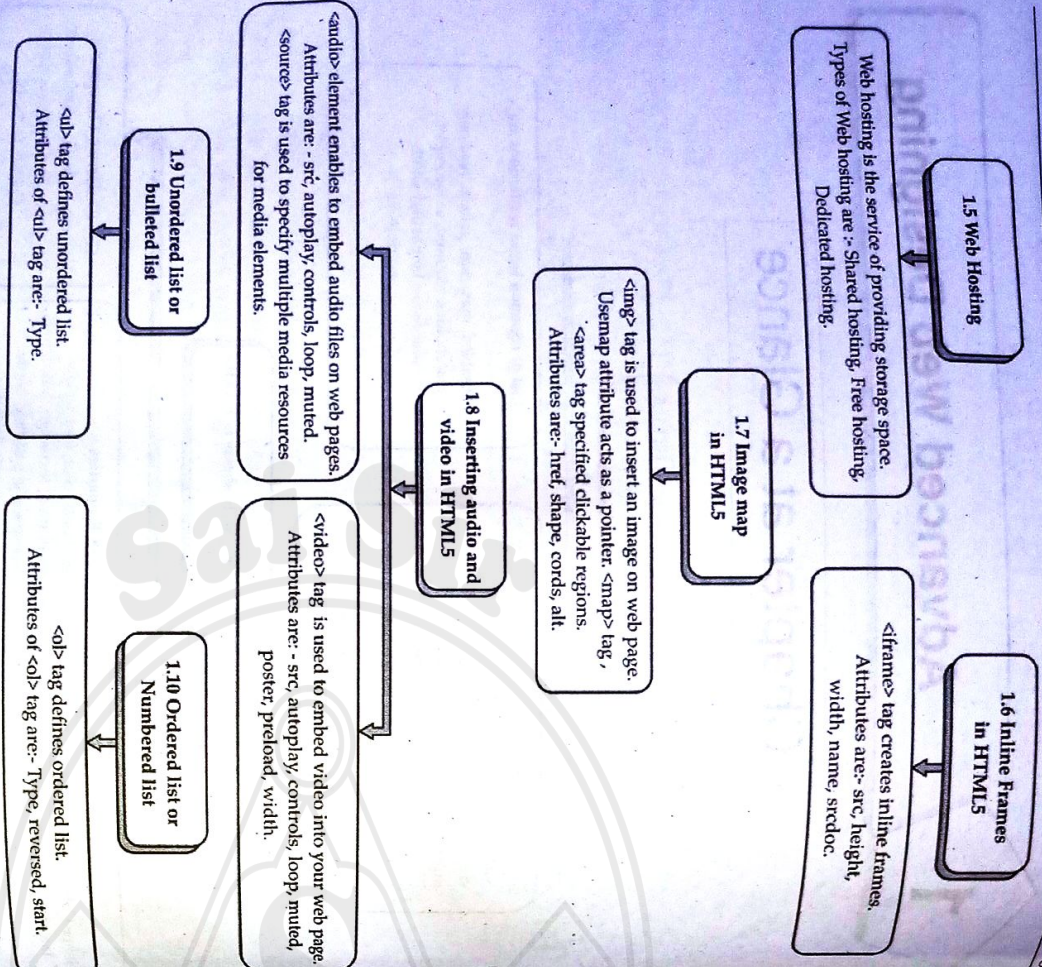
Inline CSS, Embedded CSS or
Internal CSS, External CSS.

CSS Properties :-
Color, background-color, font-weight,
font-style, text-decoration, text-align, font-family,
font-size, letter-spacing, padding, border,
background-image, margin-left etc.

CSS ID selector, Class selector,
Universal selector, Group selector,
Positioning in CSS, Float property,
Display property.

1.4 <meta> tag Meta tag & its attributes

Meta tag used by search engine to search information that is provided with webpage.
Attributes are :- Name, content, charset, http-equiv



Fill in the Blanks

1.1 Advanced Web Designing

1. HTML stands for
- Ans. : Hyper Text Markup Language
2. The is an evolving language with different version supporting different features.
- Ans. : HTML (Hyper Text Markup Language)
3. is currently used because it supports mobile technology.
- Ans. : HTML5

1.2 Forms in HTML5

4. The tag is used to create a form.
- Ans. : <form> </form>
5. <input type="....."> defines a color picker.
- Ans. : color
6. <input type="....."> defines a field for entering a number.
- Ans. : Number
7. <input type="....."> defines a field for entering a URL.
- Ans. : URL (Uniform Resource Locator)
8. <input type="....."> defines an image as a submit button.
- Ans. : Image
9. <input type="....."> defines a date picker with the year, month and day.
- Ans. : Date
10. <input type="....."> defines a field for an email address.
- Ans. : email
11. <input type="....."> defines a month and year control in format as 'YYYY-MM'.
- Ans. : Month
12. <input type="....."> defines the range control.
- Ans. : Range
13. <input type="....."> defines a date picture that includes the year, month day and time.
- Ans. : datetime-local

14. `<input type="time">` defines a control for entering a time.
Ans.: time
15. `<input type="week">` defines a week and year control.
Ans.: week
16. `<input type="search">` defines a text field for entering a search string.
Ans.: search
17. `<input type="file">` defines a field select field and a 'Browse' button for file uploads.
Ans.: file
18. `<input type="tel">` used to define input fields that should contain a telephone number.
Ans.: tel
19. The `disabled` attribute of `<input>` tag specifies that an input field should be disabled.
Ans.: disabled
20. The `maxlength` attribute of `<input>` tag specifies the maximum value for an input field.
Ans.: max
21. The `min` attribute of `<input>` tag specifies the minimum value for an input field.
Ans.: min
22. The `pattern` attribute of `<input>` tag specifies a regular expression to check the input values.
Ans.: Pattern
23. The `readonly` attribute of `<input>` tag specifies that an input field is read only.
Ans.: read only
24. The `temp` attribute of `<input>` tag acts as a temporary label showing the purpose of a text field without requiring a label tag.
Ans.: Placeholder
25. The `required` attribute of `<input>` tag specifies that an input field is required.
Ans.: required
26. The `autocomplete` attribute of `<input>` tag specifies whether a form or input field should have auto completed on or off.
Ans.: autocomplete
27. The `autofocus` attribute of `<input>` tag specifies that the input field should automatically got focus when the page loaded.
Ans.: autofocus

28. The `height` and `width` attributes of `<input type="image">` tag specifies the height and width of an `<input type="image">` tag.
Ans.: Height and width
29. The `multiple` attribute of `<input type="checkbox">` tag specifies that the user is allowed to enter more than one value in the `<input type="checkbox">` element.
Ans.: multiple
30. The `id` attribute of `<input type="checkbox">` tag is used to identify the html element uniquely through the document object model.
Ans.: ID
31. The `class` attribute of `<input type="checkbox">` tag is used to apply CSS style to the individual input element.
Ans.: Class
32. The `content` attribute of `<meta>` tag describes aspects of contents of a web page.
Ans.: content
33. The `robots` attribute of `<meta>` tag is used by search engines to search information that is provided with the web page.
Ans.: robots
34. The `display` attribute of `<meta>` tag will not be displayed on the web page.
Ans.: display
35. The `name` attribute of `<meta>` tag is a singular tag which carries information within its attributes.
Ans.: Name
36. The `value` attribute of `<meta>` tag specifies the name of the meta data.
Ans.: value
37. The `charset` attribute of `<meta>` tag can have any textual matter related to the name.
Ans.: Charset
38. The `refresh` attribute of `<meta>` tag specifies the character encoding used by the document.
Ans.: refresh
39. The `http-equiv` attribute of `<meta>` tag is used for http response message headers.
Ans.: http-equiv
40. The `refresh` attribute of `<meta>` tag is used for http response message headers.
Ans.: refresh

41. `<meta http-equiv=".....">`, browser sends the cookies back to the server.

Ans.: set-cookies

42. `<meta http-equiv=".....">`, specifies the character encoding for the document.

Ans.: content-type

43. `<meta http-equiv=".....">`, page session will get expire at specified date and time.

Ans.: expires

1.4 Cascading Style Sheets HTML5

44. CSS stands for

Ans.: Cascading Style Sheets.

45. can control the layout of multiple web pages all at once.

Ans.: CSS (Cascading Style Sheets)

46. allows you to control the look and feel of several pages by changing a single source.

Ans.: CSS (Cascading style Sheets)

47. A rule set contains a selector and a declaration blocks.

Ans.: CSS (Cascading Style Sheets)

48. indicates the HTML element you want to style.

Ans.: Selector

49. The block can content or more declarations separated by a semicolon.

Ans.: Declaration

50. Each declaration contains a property name and value, separated by

Ans.: Colon

51. A is a type of attribute of HTML element.

Ans.: Property

52. are assigned to CSS properties.

Ans.: Values

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

Ans.: Three

★54. style sheet uses the style attribute in the HTML start tag.

Ans.: Inline

55. CSS is used to apply CSS as an single line of element.

Ans.: Inline

56. style sheet is used to apply CSS a single document or page.

Ans.: Embedded/Internal

57. Internal CSS is written inside `<style>` tag within head section of html.

Ans.: `<style>`

58. The style sheet is used when you want to make changes on multiple pages.

Ans.: External

59. style sheet facilitates to change the look of the entire web site by changing just one file.

Ans.: External

60. External Style Sheet uses tag on every page.

Ans.: `<link>`

61. In External CSS, tag is placed inside head section.

Ans.: `<link>`

62. External style sheet can be written in text editor and must be saved with extension.

Ans.: .css

63. The CSS file should not contain any HTML tags.

Ans.: External

64. In CSS, property changes the color of the text.

Ans.: color

65. The property is used to set background color in your webpage.

Ans.: Background-color

66. The property is used make the text bold.

Ans.: Font-weight

67. The property is used to make the text italic.

Ans.: Font-style

68. The property is used to add strike through marks, underline, overline etc.

Ans.: Text-decoration

69. The property is used to control the horizontal alignment of any block level text.

Ans.: Text-Align

70. The property is used to control the fonts.

Ans.: font-family

Cascading Style Sheet

71. The property allows you to control the size of the font.
Ans. : font-size
72. The property helps in controlling the horizontal spacing between characters of text.
Ans. : Letter-spacing
73. The property is used when you want to add padding around the contents of an element.
Ans. : Padding
74. The property adds a border to a web page element.
Ans. : Border
75. The property is used to set an image as the background of webpage.
Ans. : Background-image
76. The property sets margin area on the left side of the element.
Ans. : Margin-left
77. The selector selects the id attribute of an HTML element to select a specific element.
Ans. : ID
78. An is always unique within the page so it is unique element.
Ans. : ID
79. ID is written with the character followed by the ID name.
Ans. : Hash
80. The selector selects HTML elements with a specific class attribute.
Ans. : Class
81. The Class selector is used with character followed by the class name.
Ans. : Period
82. The selector is used when you want to change a group of elements within HTML page.
Ans. : Class
83. The selector is used as a wildcard character.
Ans. : Universal
84. The selector is used to select all the elements with the same style definition.
Ans. : Grouping
85. In grouping selector are used to separate each selector.
Ans. : Commas
86. In CSS, property is used to set position for an element.
Ans. : Position

87. There are types of positioning in CSS.
Ans. : Four
88. The positioning is not affected by the top, bottom, left and right properties.
Ans. : Static
89. The positioning is the default position for HTML element.
Ans. : Static
90. The positioning helps to put the text fixed on the browser.
Ans. : Fixed
91. The property forces on element into a fixed positioning relative to the browser window.
Ans. : Fixed
92. The positioning property is used to set the element related to its normal position.
Ans. : Relative
93. The positioning property sets an element in a specific location and it is not affected by the flow of the page.
Ans. : Absolute
94. is a CSS property written in CSS file or directly in the style of an element.
Ans. : Float
95. keeps the element float on left side of the container.
Ans. : float : left
96. keeps the element float on right side of container.
Ans. : float : right
97. is a default property which shows the element as it is.
Ans. : float : none
98. The property in CSS defines how the components are going to be placed on the web page.
Ans. : Display
99. property is used to display an element as an inline element.
Ans. : Display : Inline
100. property is used to display an element as an block element.
Ans. : Display : Block
101. property is used to the width and height.
Ans. : Block-inline
102. Using property the element is completely removed.
Ans. : Display : None

1.5 Ordered list or numbered list

103. The tag defines an Ordered list.

Ans. :

104. The list can be numerical or alphabetical.

Ans. : Ordered

105. The attribute of tag specifies the numbering type for the used items.

Ans. : Value.

106. The attribute of tag specifies that the items of the list are specified in the reverse order.

Ans. : Reversed

107. The attribute of tag specifies the starting number of the first item.

Ans. : start

108. list is also called as numbered list.

Ans. : Ordered

1.6 Unordered list or bulleted list

109. An unordered list is created using tag.

Ans. :

110. list is also called as bulleted list.

Ans. : Unordered

111. Each list item starts with tag.

Ans. :

112. The attribute of tag sets the list item marked to disc, circle or square.

Ans. : type

1.7 Definition list

113. To define a definition list tag is used.

Ans. : <dl>

114. The tag is used to define the term.

Ans. : <dt>

115. The is used to define term's definition.

Ans. : <dd>

116. The list within another list is called list.

Ans. : Nested

dt = derivative

1.8 Inserting audio and video in HTML5

117. MPEG stands for

Ans. : Moving Pictures Experts Group

118. AAC stands for

Ans. : Advanced Audio Coding

★ 119. The element enables to embed or add audio files in webpages.

Ans. : <audio>

120. Using attribute of <audio> tag the audio will start playing as soon as it is ready.

Ans. : Autoplay

121. The attribute of <audio> tag defines the audio controls should be displayed.

Ans. : controls.

122. The attribute of <audio> tag sets the audio will start over again, every time it is finished.

Ans. : loop

123. The attribute of <audio> tag specifies that the audio output should be muted.

Ans. : Muted

124. The attribute of <audio> tag specifies the URL of the audio file.

Ans. : Src.

125. The attribute is used to add audio controls such as play, pause and volume.

Ans. : Controls

126. The tag is used to specify multiple media resources for media elements.

Ans. : <source>

127. The tag is used to embed video into web page.

Ans. : <video>

128. The attribute defines the link to video file.

Ans. : Src.

129. The attribute specifies that the video will start playing as soon as it is ready.

Ans. : Autoplay

130. The attribute specifies that video controls should be displayed.

Ans. : Controls

131. The attributes sets the height of the video player.

Ans. : height

132. The attribute specifies that the video will start over again every time it is finished.

Ans.: loop

133. The attribute specifies that the audio output of the video should be muted.

Ans.: muted

134. The attribute an image to be shown while the video is downloading.

Ans.: poster

135. The attribute specifies if and how the author thinks the video should be loaded when the web page loads.

Ans.: preload

136. The attribute sets the width of the video player.

Ans.: width

1.9 Image map in HTML5

137. An image with multiple hyperlinks is called an

Ans.: Image map

138. is used to connect links to different regions on the web page.

Ans.: Image Map

139. The clickable regions of image map are called as

Ans.: hotspots

140. tag is used to insert an image on a web page.

Ans.:

141. To create a client Side Image Map attribute of tag is used.

Ans.: Usemap

142. Usemap attribute of tag is used with value which is preceded with a symbol.

Ans.: #

143. The attribute acts as a pointer which indicates that the image is a Client Side Image Map.

Ans.: Usemap

144. The tag is used to map the image.

Ans.: <map>

145. The attribute of <map> tag specifies name of the image used for client side image map.

Ans.: Name

146. tag defines the specific clickable regions.

Ans.: <area>

147. The attribute of <area> tag defines the URL to which the clickable region within the image map navigates.

Ans.: Href

148. The attribute defines the shape as rect, circle or poly.

Ans.: Shape

149. The attribute specifies co-ordinates of the clickable regions on the image map.

Ans.: Coords

150. The attribute specifies extra information about clickable area.

Ans.: alt

1.10 Inline Frame in HTML5

151. The element creates an inline frame.

Ans.: <iframe>

152. frames are often used in online advertising.

Ans.: Inline

153. The attribute specifies the address of the document to embed in the <iframe>.

Ans.: Src

154. The attribute specifies the height of an <iframe>.

Ans.: Height

155. The attributes specific the width of an <iframe>.

Ans.: width

156. The attribute specifies name of an <iframe>.

Ans.: Name

157. The attribute specifies the HTML content of the page to show in the <iframe>.

Ans.: Srdoc

1.11 Website Hosting

158. Website is made available on the Internet with the help of

Ans.: Web Hosting

159. is the service of providing storage space.

Ans.: Web Hosting

160. The Companies that provides web hosting services are called

Ans.: Web hosts

161. own and manage web servers.

Ans.: Web hosts

162. hosting gives domain name to you website.

Ans.: Shared

163. are paid hosting servers for large web site
 Ans.: Dedicated hosting
164. provides you free hosting of the website for limited period of time.
 Ans.: Free hosting

True or False

1.1 Advanced Web Designing

- HTML stands for Hyper Text Markup language.
 Ans.: True
- HTML is an evolving language, with different versions supporting different features.
 Ans.: True
- Google chrome does not support the features of HTML5.
 Ans.: False
- Microsoft Edge, Safari browsers support the features of HTML5.
 Ans.: True

1.2 Forms in HTML5

- Text, radio, checkbox etc. are the controls used to collect user inputs.
 Ans.: True
- <input type = "color"> defines a color picker.
 Ans.: True
- <input type = "number"> defines a field for entering URL.
 Ans.: False
- <input type = "URL"> defines a field for entering URL.
 Ans.: True
- <input type = "image"> defines an image as a submit button.
 Ans.: True
- <input type = "date"> defines a date picker with year, month and day.
 Ans.: True
- <input type = "email"> defines a field for entering number.
 Ans.: False
- <input type = "month"> defines a month and year control.
 Ans.: True

- <input type = "range"> defines a range control.
 Ans.: True
- Default range of range control is 100-200.
 Ans.: False
- <input type = "datetime-local"> defines a date picker that includes the year, month, day and time.
 Ans.: True
- <input type = "time"> defines the control for entering a week.
 Ans.: False
- <input type = "week"> defines a week and year control.
 Ans.: True
- <input type = "search"> defines a text field for entering a search string.
 Ans.: True
- <input type = "file"> defines a file-select field and a browse button for file uploads.
 Ans.: True
- <input type = "tel"> used to define input fields should be disabled.
 Ans.: False
- Enabled attribute specifies that an input field should be disabled.
 Ans.: False
- Max attribute specifies the maximum value for an input field.
 Ans.: True
- Min attribute specifies the minimum value for an input field.
 Ans.: True
- Pattern attribute specifies a regular expression to check the input values.
 Ans.: True
- Read only attribute specifies that an input file is Read on.
 Ans.: False
- Placeholder attribute acts as a temporary label showing the purpose of a text field without requiring a label tag.
 Ans.: True
- Required attribute specifies that an input field must be filled out.
 Ans.: True
- Auto-complete attribute specifies that the input field should automatically get focus when the page loads.
 Ans.: False
- Autofocus attribute specifies whether input field should have autocomplete ON or OFF.
 Ans.: False

- 30. Height and width attribute specifies the height and width of an `<input type = "image">`.
Ans. : True
- 31. Multiple attribute works with input type text and image.
Ans. : False
- 32. Multiple attribute specifies that the user is allowed to enter more than one value in the `<input>` element.
Ans. : True
- 33. ID attribute is used to identify the html element uniquely through the Document Object Model.
Ans. : True
- 34. Class attribute is used to apply CSS style to the individual input element.
Ans. : True

1.3 <meta> tag

- 35. `<meta>` tag is used by search engines to search information that is provided with the webpage.
Ans. : True
- 36. `<meta>` tag is a paired tag.
Ans. : False
- 37. `<meta>` tag is placed between `<title>` and `</title>` tag.
Ans. : False
- 38. Metadata will not be displayed on the web page.
Ans. : True
- 39. Name attribute of `<meta>` tag specifies the name of metadata.
Ans. : True
- 40. Content attribute of `<meta>` tag cannot have any textual matter related to the name.
Ans. : False
- 41. Charset attribute of `<meta>` tag specifies the character encoding use by the document.
Ans. : True
- 42. `<meta charset = "UTF-8">` is for Indian characters.
Ans. : True
- 43. `<meta charset = "Big5">` is for Chinese characters.
Ans. : True
- 44. `http-equiv` attribute of `<meta>` tag is used for http response message headers.
Ans. : True
- 45. `<meta http-equiv = "refresh" content = "5">`, here the page will get refresh after every 5 seconds.
Ans. : True

- 46. `<meta http-equiv = "set-cookies">`, the browser sends the cookies back to the server.
Ans. : True
- 47. `<meta http-equiv = "Content-type" content = "text/html" charset = "Big5">` specifies the character decoding of the document.
Ans. : False

1.4 Cascading Style Sheets HTML5

- 48. CSS stands for Cascading Style Sheets.
Ans. : True
- 49. CSS describes how HTML elements are to be displayed on screen.
Ans. : True
- 50. CSS cannot control the layout of multiple web pages all at once.
Ans. : False
- 51. CSS allows you to control the look and feel of several pages by changing a single source.
Ans. : True
- 52. A CSS rule set contains a selector and a declaration block.
Ans. : True
- 53. Selector indicates the HTML element you want to style.
Ans. : True
- 54. The declaration block can contain one or more declarations separated by a semicolon.
Ans. : True
- 55. Each declaration contains a property name and value separated by a semicolon.
Ans. : False
- 56. A property is a type of attribute of HTML element.
Ans. : True
- 57. Values are assigned to CSS properties.
Ans. : True
- 58. There are four methods of implementing styling information to an HTML document.
Ans. : False
- 59. Inline style-sheet uses the style attribute in the HTML start tag.
Ans. : True
- 60. Inline CSS is used to apply CSS in multiple lines or elements.
Ans. : False
- 61. `<p style = "color : red">` CSS `</p>` is the example of inline CSS.
Ans. : True

62. Internal style sheet is also known as embedded style sheet.
Ans.: True
63. Internal CSS is used to apply CSS on a single document or page.
Ans.: True
64. Internal CSS cannot affect all the elements of the page.
Ans.: False
65. Internal CSS is written inside <style> tag within head section.
Ans.: True
66. The color property changes the background color of the web page.
Ans.: False
67. Background-color property is used to set the background color in your web page.
Ans.: True
68. Font-weight property is used to make the text bold.
Ans.: True
69. Font-style property is used to italicize text.
Ans.: True
70. Text-decoration property is used to add strike-through marks, underline, overstrike etc.
Ans.: True
71. Text-align property is used to control the vertical alignment of any block-level text.
Ans.: False
72. Font-family property is used to control the fonts.
Ans.: True
73. Font-size property allows you to control the size of the font.
Ans.: True
74. Letter-spacing property helps in controlling the horizontal spacing between characters of text.
Ans.: True
75. Padding property is used when you want to remove blank spaces around the content of an element.
Ans.: False
76. Border property adds a border to a web page element.
Ans.: True
77. Background-image property is used to set an image as the background of your webpage.
Ans.: True
78. Margin-left property sets the margin area on the left side of the element.
Ans.: True
79. External style sheet is used when you want to make changes on multiple pages.
Ans.: True
80. Internal style sheet facilitates to change the look of entire web site by changing just one file.
Ans.: False
81. External CSS uses <link> tag.
Ans.: True
82. <link> tag is placed inside body section.
Ans.: False
83. External CSS file must be saved with .css extension.
Ans.: True
84. External CSS file should contain HTML tags.
Ans.: False
85. The ID selector selects the id attribute of an HTML element to select a specific element.
Ans.: True
86. An ID is unique element.
Ans.: True
87. ID is written with hash (#) character followed by id name.
Ans.: True
88. #abc (color : red) is example of ID selector.
Ans.: True
89. Class selector selects HTML elements with a specific class attribute.
Ans.: True
90. Class selector is used with a period character.
Ans.: True
91. Class name should start with a number.
Ans.: False
92. The class selector is used when you want to change a group of elements within your HTML page.
Ans.: True
93. • abc (color : blue) is example of class selector.
Ans.: True
94. The universal selector is used as wildcard character.
Ans.: True
95. Universal selector selects single element on the web page.
Ans.: False

96. Grouping selector is used to select element with the different style definitions.

Ans.: False

97. Commas are used to separate each selector in grouping.

Ans.: True

98. h1, h2, b | color : pink| is example of class selector.

Ans.: False

99. The position property is used to set position for an element.

Ans.: True

100. The element can be positioned using the top, bottom, left and right properties.

Ans.: True

101. Values in positions are fixed, absolute and relative.

Ans.: True

102. There are four types of positioning in CSS.

Ans.: True

103. Static positioning is the default position for HTML elements.

Ans.: True

104. Static positioning is affected by the top, bottom, left and right properties.

Ans.: False

105. Fixed Positioning property helps to put the text fixed on the browser.

Ans.: True

106. The fixed element will move even when the page is scrolled.

Ans.: False

107. The static property forces an element into a fixed position relative to the browser window.

Ans.: False

108. Relative Positioning property is used to set the element relative to its normal position.

Ans.: True

109. Absolute positioning property sets an element in a specific location and it is not affected by the flow of the page.

Ans.: True

110. Absolute positioning property positions the element at the specified coordinates relative to screen top right corner.

Ans.: False

111. Float property is written in CSS file or directs in the style of an element.

Ans.: True

112. The float property defines the flow of content.

Ans.: True

113. Float : left keeps the element float on right side of the container.

Ans.: False

114. Float : right keeps the element float or right side of the container.

Ans.: True

115. Float : none is the default property.

Ans.: True

116. Float : name does not shows the element as it is.

Ans.: False

117. The Display property in CSS defines how the components are going to be placed on the web page.

Ans.: True

118. Display property specifies how the element is float.

Ans.: False

119. Display property is used to define the display of different parts of a web page.

Ans.: True

120. Inline value is used to display an element as an block element.

Ans.: False

121. Block value is used to display an element as an inline element.

Ans.: False

122. Block value starts on a new line, and takes up the whole width of the browser window.

Ans.: True

123. The difference between Inline and block inline value is that you are able to set the width and height.

Ans.: True

124. The element is completely removed using none value.

Ans.: True

1.5 Ordered list or numbered list

125. tag defines ordered list.

Ans.: True

126. Ordered list cannot be numerical or alphabetical.

Ans.: False

127. Type attribute is used to define number type for the used items.

Ans.: True

128. The default value of type attribute in ordered list is 1.

Ans.: True

129. Reversed attribute specifies that the items of the list are specified in the reverse order.

Ans.: True

132. *src* attribute specifies the ending number of the first item in an ordered list.

Ans.: False

1.6 Unordered list or bulleted list

131. An unordered list is created using tag.

Ans.: True

132. Each list item starts with tag.

Ans.: True

133. The list items in unordered lists are marked with numbers.

Ans.: False

134. By default, the list items in unordered list are marked with bullets.

Ans.: True

135. <ul type = "disc"> sets the list item marker to a bullet.

Ans.: True

136. <ul type = "circle"> sets the list item marker to a square.

Ans.: False

137. <ul type = "square"> sets the list item marker to a square.

Ans.: True

138. Using <ul type = "none"> the list items will not be marked.

Ans.: True

139. HTML5 does not support bullets, circle and square value of type attribute.

Ans.: True

140. HTML5 does not support type attribute of tag so you can use CSS style.

Ans.: True

1.7 Definition list

141. To define a definition list <dl> tag is used.

Ans.: True

142. Items can be created in definition list with <dt> and <dd> tags.

Ans.: True

143. The <dd> tag is used to define the term whereas the <dt> tag is used to define the term's definition.

Ans.: False

144. List within list is called nested list.

Ans.: True

145. List can be Single level nested list or multi level list.

Ans.: True

1.8 Inserting audio and video in HTML5

146. HTML features includes native audio and video support without the need for flash.

Ans.: True

147. The <audio> element enables you to embed, audio files on webpages.

Ans.: True

148. The audio will stop playing as soon as it is ready using auto-play attribute.

Ans.: False

149. Controls attribute is used to display audio controls.

Ans.: True

150. Controls attribute display play, pause buttons etc.

Ans.: True

151. Using loop attribute the audio will stop over again, every time it is finished.

Ans.: False

152. Muted attributes specifies that the audio output should be muted.

Ans.: True

153. Src attribute specifies the URL of the audio file.

Ans.: True

154. Autoplay, controls, muted are the attributes without any values.

Ans.: True

155. The source element is used to specify the audio files which the browser may use.

Ans.: True

156. The <source> tag is used to specify multiple media resources for media elements.

Ans.: True

157. Multiple sources of audios are specified so that if the browser is unable to play the first source then it will jump to the second source.

Ans.: True

158. The <video> tag is used to embed video in web page.

Ans.: True

159. Src attribute defines link to video file.

Ans.: True

160. Autoplay attribute specifies that the video will start playing as soon as it is ready.

Ans.: True

161. Controls attribute specifies that video controls should not be displayed.

Ans.: False

162. Height attribute sets the height of the video-player.

Ans.: True

163. Loop attribute specifies that the video will start over again every time it is finished.
Ans.: True
164. Muted attribute specifies that the video output of the video should be muted.
Ans.: False
165. Poster attribute specifies on image to be shown while the video is downloading.
Ans.: True
166. Preload attribute specifies if and how the author thinks the video should be loaded when the webpage loads.
Ans.: True
167. Width attribute sets the width of the video player.
Ans.: True
168. Width attribute sets the value in pixels.
Ans.: True
169. The <source> tag cannot be used to specify multiple media resources for video as well as audio media elements.
Ans.: False

1.9 Image map in HTML5

170. An image with multiple hyperlinks is called as image map.
Ans.: True
171. Image map is used to connect links to different regions on the webpage.
Ans.: True
172. Clickable regions in Image map are called as hotspots.
Ans.: True
173. Image Maps are of four types.
Ans.: False
174. tag is used to insert on image on a web page.
Ans.: True
175. Image map is created by marking certain regions on an image clickable.
Ans.: True
176. To create a server side image map use map attribute of is used.
Ans.: False
177. The usemap attribute acts as a pointer which indicates that the image is a client side image map.
Ans.: True
178. Name attribute specifies name of the image used for client side image map.
Ans.: True

179. <map> tag is used to create client side image map.
Ans.: True
180. Usemap is the attribute used with <map> tag.
Ans.: False
181. <area> tag defines specifies clickable regions.
Ans.: True
182. <area> is paired tag.
Ans.: False
183. <map> tag is paired tag.
Ans.: True
184. A given <map> element can contain multiple <area> element within it.
Ans.: True
185. Src attribute defines URL to which the clickable region within the image map navigates.
Ans.: False
186. Shape attribute can value rect, circle or poly.
Ans.: True
187. Coords attribute specifies co-ordinates of the clickable region on the image map.
Ans.: True
188. Rect value specifies rectangular area within four co-ordinates.
Ans.: True
189. Circle value specifies a circular region.
Ans.: True
190. Circle requires two co-ordinates.
Ans.: False
191. Poly value defines a polygon region with co-ordinates specifying each point on the polygon.
Ans.: True
192. No coordinates are required in default value.
Ans.: True
193. Alt attribute specifies extra information about clickable area.
Ans.: True
194. Href attribute gives alternative text to the clickable region.
Ans.: False

1.10 Inline Frame in HTML5

195. The <iframe> element creates an inline frame.
Ans.: True

196. Inline frames are used in online advertising.

Ans.: True

197. Src attribute specifies the address of the document to embed in the <iframe>.

Ans.: True

198. Height attribute specifies the width of an <iframe>.

Ans.: False.

199. Width attribute specifies the width of an <iframe>.

Ans.: True

200. Height and width is defined in pixels.

Ans.: True

201. Name attribute specifies name of an <iframe>.

Ans.: True

202. Srcdoc specifies the HTML content of the page to show in the <iframe>.

Ans.: True

1.11 Website Hosting

203. Web server is the service of providing storage space.

Ans.: False.

204. The website is made available on the internet with the help of web hosting.

Ans.: True

205. The companies that provides web hosting services are called web host.

Ans.: True

206. Web host own and manage web servers.

Ans.: True

207. Web servers offer interrupted Internal Connectivity.

Ans.: False.

208. Shared hosting is cost effective.

Ans.: True

209. Free hosting gives domain name to your website.

Ans.: False

210. Websites which provide free hosting for limited period of time is called free hosting.

Ans.: True

211. Dedicated hosting are paid hosting servers for large website.

Ans.: True

212. You can buy your own web server space, but it is most expensive way to publish your website.

Ans.: True

MCQ (One Correct Answers)

1.1 Advanced Web Designing

1. HTML stands for

- (a) Hyper Transfer Markup Language
- (b) Hyper Text Markup Language
- (c) Hyper Transform Markup
- (d) Hyper Text Made Language

Ans.: (b)

2. The is an evolving language with different versions supporting different features.

- (a) HTML (Hyper Text Markup Language)
- (b) ASP (Active Server Pages)
- (c) DOM (Document Object Model)
- (d) HTTP (Hyper Text Transfer Protocol)

Ans.: (a)

3. is current used because it supports mobile technology.

- (a) DOM
- (b) HTTP
- (c) HTML5
- (d) FTP

Ans.: (b)

1.2 Forms in HTML5

4. The tag is used to create a form.

- (a) <input>
- (b) <text area>
- (c) <select>
- (d) <form>

Ans.: (d)

5. <input type = " "> defines a color picker.

- (a) Number
- (b) URL
- (c) Color
- (d) Date

Ans.: (c)

6. <input type= " "> defines a field for entering a number.

- (a) color
- (b) Number
- (c) Date
- (d) email

Ans.: (b)

7. <input type=" "> defines a field for entering a URL.

- (a) color
- (b) image
- (c) email
- (d) URL (Uniform Resource Locator)

Ans.: (d)

8. `<input type="...">` defines an image as a submit button.
 (a) Image (b) Button (c) date (d) radio

Ans.: (a)

9. `<input type="...">` defines a date picker with the year, month and day.
 (a) Month (b) Range (c) Date (d) Number

Ans.: (c)

10. `<input type="...">` defines a field for an email address.
 (a) Image (b) email (c) URL (d) Color

Ans.: (b)

11. `<input type="...">` defines a month and year control in format as 'YYYY-MM'.

- (a) Date (b) datetime-local
 (c) Week (d) month

Ans.: (d)

12. `<input type="...">` defines the range control.
 (a) time (b) search (c) range (d) file

Ans.: (c)

13. `<input type="...">` defines a date picture that includes the year, month day and time.

- (a) datetime-local (b) date
 (c) week (d) month

Ans.: (a)

14. `<input type="...">` defines a control for entering a time.
 (a) week (b) time (c) time (d) date time-local

Ans.: (b)

15. `<input type="...">` defines a week and year control.
 (a) week (b) date
 (c) datetime-control (d) Month

Ans.: (a)

16. `<input type="...">` defines a text field for entering a search string.
 (a) File (b) Range (c) Search (d) tel

Ans.: (a)

17. `<input type="...">` defines a field select field and a 'Browse' button for file uploads.
 (a) tel (b) Range (c) Search (d) File

Ans.: (d)

18. `<input type="...">` used to define input fields that should contain a telephone number.
 (a) tel (b) search (c) number (d) color

Ans.: (a)

19. The default range of range control is
 (a) 0 to 100 (b) 100 to 150 (c) 90 to 100 (d) 200 to 300

Ans.: (a)

20. The attribute of `<input>` tag specifies that an input field should be disabled.
 (a) max (b) required (c) disabled (d) auto-complete

Ans.: (c)

21. The attribute of `<input>` tag specifies the maximum value for an input field.
 (a) disabled (b) max (c) read only (d) min

Ans.: (b)

22. The attribute of `<input>` tag specifies the minimum value for an input field.
 (a) min (b) max (c) pattern (d) autofocus

Ans.: (a)

23. The attribute of `<input>` tag specifies a regular expression to check the input values.
 (a) Required (b) Multiple (c) Pattern (d) Max

Ans.: (c)

24. The attribute of `<input>` tag specifies that an input field is read only.
 (a) read only (b) placeholder
 (c) disabled (d) required

Ans.: (a)

25. The attribute of `<input>` tag acts as a temporary label showing the purpose of a text field without requiring a label tag.
 (a) Pattern (b) Placeholder
 (c) Multiple (d) Read only

Ans.: (b)

26. The attribute of `<input>` tag specifies that an input field is required.
 (a) required (b) disabled (c) multiple (d) auto focus

Ans.: (a)

27. The attribute of `<input>` tag specifies whether a form or input field should have auto completed on or off.
 (a) Required (b) max (c) autofocus (d) autocomplete

Ans.: (d)

28. The attribute of `<input>` tag specifies that the input field should automatically got focus when the page loaded.
 (a) autocomplete (b) multiple
 (c) autofocus (d) required

Ans.: (c)

29. The attribute of <input> tag specifies the height and width of <input type = "image">
- (a) Multiple
(b) Height and width
(c) disabled
(d) min

- Ans.: (b)
30. The attribute of <input> tag specifies that the user is allowed to enter more than one value in the <input> element.

- (a) Read only
(b) required
(c) multiple
(d) pattern

- Ans.: (c)
31. attribute works with input types like email and file.

- (a) Required
(b) Multiple
(c) Pattern
(d) Read only

- Ans.: (b)
32. The attribute of <input> tag is used to identify the html element uniquely through the document object model.

- (a) ID
(b) Class
(c) Relative
(d) Grouping

Ans.: (a)

33. The attribute of <input> tag is used to apply CSS style to the individual input element.

- (a) Relative
(b) Class
(c) ID
(d) Absolute

Ans.: (b)

1.3 <meta> tag

34. The tag is used by search engines to search information that is provided with the web page.

- (a) <input>
(b) <body>
(c) <form>
(d) <meta>

Ans.: (d)

35. The tag is placed between <head> tag.

- (a) <body>
(b) <meta>
(c) <form>
(d) <audio>

Ans.: (b)

36. will not be displayed on the web page.

- (a) Head data
(b) Form data
(c) Metadata
(d) Table data

Ans.: (c)

37. The attribute specifies the name of the metadata.

- (a) Name
(b) http-equiv
(c) Content
(d) Charset

Ans.: (a)

38. The attributes of <meta> tag specifies the name of the metadata.
- (a) http-equiv
(b) Name
(c) Content
(d) Charset

Ans.: (c)

39. The attribute of <meta> tag specifies the character encoding used by the document.

- (a) Metadata
(b) Name
(c) Content
(d) Charset

Ans.: (d)

40. <meta charset = "UTF - 8"> is for characters.

- (a) Indian
(b) Japan
(c) America
(d) Chinese

Ans.: (a)

41. <meta charset = "Big5"> is for language.

- (a) Indian
(b) USA
(c) Chinese
(d) Italy

Ans.: (c)

42. The attribute of <meta> tag is used for http response message headers.

- (a) Name
(b) http-equiv
(c) content
(d) Charset

Ans.: (b)

43. The page will get refresh using value of http-equiv attribute.

- (a) expires
(b) set-cookie
(c) content-type
(d) Refresh

Ans.: (d)

44. The browser sends the cookies back to the server using value of http-equiv attribute.

- (a) set - cookie
(b) expires
(c) content-type
(d) refresh

Ans.: (a)

45. The value specifies the character encoding for the document.

- (a) expires
(b) content-type
(c) charset
(d) refresh

Ans.: (b)

46. The page session will get expire at specified date and time using value of http-equiv attribute.

- (a) Expires
(b) Refresh
(c) set-cookie
(d) content-type

Ans.: (a)

1.4 Cascading Style Sheets HTML5

47. CSS stands for
 (a) Content Style Sheets (b) Commanding Style Sheets
 (c) Cascading Style Sheets (d) Context Style Sheets
- Ans.: (c)
48. allows you to control the look and feel of several pages by changing single source.
 (a) ASP (b) CSS (c) PHP (d) DOM
- Ans.: (b)
49. indicates the HTML element you want to style.
 (a) Selector (b) Declaration
 (c) Property (d) Value
- Ans.: (a)
50. The block can contain or more declarations separated by a semi colon.
 (a) Declaration (b) Selector (c) Property (d) Value
- Ans.: (a)
51. Each declaration contains a property name and value, separated by
 (a) Colon (b) Comma (c) Semicolon (d) Period
- Ans.: (c)
52. A is a type of attribute of HTML element.
 (a) Property (b) Value (c) Declaration (d) Selector
- Ans.: (a)
53. are assigned to CSS properties.
 (a) Methods (b) Values (c) Selector (d) Property
- Ans.: (b)
54. There are methods of implementing styling information to an HTML document.
 (a) Four (b) Five (c) Three (d) Six
- Ans.: (c)
55. style sheet uses the style attribute in the HTML start tag.
 (a) Internal (b) Inline (c) External (d) Selector
- Ans.: (b)
56. CSS is used to apply CSS as a single line of element.
 (a) Internal (b) External (c) Embedded (d) Inline
- Ans.: (d)

57. Examples of Inline CSS is
 (a) <body background - color : red >
 (b) <body style = "background - color : red" >
 (c) <body class = "background - color : red" >
 (d) <body id = "background" - color : red" >
- Ans.: (b)
58. Internal CSS is also called a CSS.
 (a) Embedded (b) Inline (c) Inbuilt (d) External
- Ans.: (a)
59. style sheet is used to apply CSS a single document or page.
 (a) Internal (b) Inline (c) External (d) Inbuilt
- Ans.: (a)
60. Internal CSS is written inside tag within head section of html.
 (a) <body> (b) <style> (c) <link> (d) <title>
- Ans.: (b)
61. The style sheet is used when you want to make changes on multiple pages.
 (a) Internal (b) External (c) Inline (d) Embedded
- Ans.: (b)
62. style sheet facilitates to change the look of the entire web site by changing just one file.
 (a) External (b) Inline (c) Internal (d) Embedded
- Ans.: (a)
63. In external CSS tag should be put inside head section.
 (a) <style> (b) <link> (c) <title> (d) <body>
- Ans.: (b)
64. An external style sheet must be saved with extension.
 (a) .txt (b) .html (c) .JS (d) .CSS
- Ans.: (d)
65. The CSS file should not contain any HTML tags.
 (a) Internal (b) Inline (c) External (d) Embedded
- Ans.: (c)
66. The property changes the color of text.
 (a) color (b) background-color
 (c) font - color (d) text-color
- Ans.: (a)

67. The property sets background color in your webpage.
 (a) background - color (b) background-bg color
 (c) back color (d) color
Ans. : (a)
68. The property is used to make the text bold.
 (a) font-color (b) font-size (c) font-weight (d) font-style
Ans. : (c)
69. The property is used to make the text italics.
 (a) font-weight (b) font-size (c) font-height (d) font-style
Ans. : (d)
70. The property is used to decorate the text.
 (a) Text-align (b) Text-color (c) Text-decoration (d) Decoration
Ans. : (c)
71. The value of text-decoration property is used to add strike through marks.
 (a) line-through (b) underline (c) None (d) overline
Ans. : (a)
72. The value of text-decoration property is used to underline the text.
 (a) Overline (b) line-through (c) underline (d) none
Ans. : (c)
73. The value of text-decoration property is used to overstrike the text.
 (a) Overline (b) underline (c) none (d) line-through
Ans. : (a)
74. The value of text-decoration property is used to remove underlines in lines.
 (a) Overline (b) Underline (c) none (d) line through
Ans. : (c)
75. The property is used to control the horizontal alignment of any HTML level text.
 (a) Text-align (b) text-decoration (c) font size (d) text size
Ans. : (a)

76. The property is used to control the fonts.
 (a) font-size (b) font-family (c) font-style (d) font-weight
Ans. : (b)
77. The property allows you to control the size of the font.
 (a) font-style (b) font-weight (c) font-size (d) font family
Ans. : (c)
78. The property helps in controlling the horizontal spacing between characters of text.
 (a) letter-spacing (b) spacing (c) padding (d) border
Ans. : (a)
79. The property is used when you want to add blank spaces around the content of an element.
 (a) Border (b) letter-spacing (c) Padding (d) Margin-left
Ans. : (c)
80. The property adds a border to a web page element.
 (a) padding (b) border (c) font-size (d) marginal
Ans. : (b)
81. The property is used to set an image as the background of webpage.
 (a) Background-color (b) Background-image (c) Background-imag (d) Image
Ans. : (b)
82. The property sets margin area on the left side of the element.
 (a) Margin-left (b) Padding (c) Border (d) font-style
Ans. : (a)
83. The selector selects the id attribute of an HTML element to select a specific element.
 (a) ID (b) Class (c) Grouping (d) Universal
Ans. : (a)
84. The ID selector is written with the character followed by the id name.
 (a) Period (.) (b) asterisks (*) (c) hash (#) (d) Copyright ©
Ans. : (c)
85. The selector selects HTML elements with a specific class attribute.
 (a) ID (b) Class (c) Grouping (d) Universal
Ans. : (b)
86. A Class selector is used with character followed by the class name.
 (a) Period (.) (b) asterisks (*) (c) hash (#) (d) Copyright ©
Ans. : (a)

87. The class name should not start with a
 (a) Text (b) Character (c) Number (d) Special symbol
Ans. : (c)
88. The Selector is used as a wildcard character.
 (a) Grouping (b) Class (c) ID (d) Universal
Ans. : (d)
89. The selector is used to select all the elements with the same definitions.
 (a) Class (b) Grouping (c) ID (d) Universal
Ans. : (b)
90. are used to separate each selector in grouping.
 (a) Period (b) color (c) commas (d) semicolon
Ans. : (c)
91. The property is used to select position for an element.
 (a) Absolute (b) Position (c) Relative (d) Fixed
Ans. : (b)
92. There are types of positioning in CSS.
 (a) One (b) Four (c) Six (d) Three
Ans. : (b)
93. The is the default position for HTML element.
 (a) Static (b) Fixed (c) Relative (d) Absolute
Ans. : (a)
94. The property helps to put the text fixed on the browser.
 (a) Relative (b) Static (c) Fixed (d) Absolute
Ans. : (c)
95. The property forces an element into a fixed position relative to browser
 (a) Fixed (b) Static (c) Absolute (d) Relative
Ans. : (a)
96. The element will not move even when the page is scrolled.
 (a) Absolute (b) Relative (c) Static (d) Fixed
Ans. : (d)
97. The positioning property is used to set the element relative to normal position.
 (a) Absolute (b) Relative (c) Fixed (d) Static
Ans. : (b)

98. The property gets an element in a specific location and it is not affected by the flow of the page.
 (a) Absolute (b) Fixed (c) Relative (d) Static
Ans. : (a)
99. Absolute positioning property positions the element at the specified coordinates relative to screen corner.
 (a) Top-left (b) Top-right (c) Top-bottom (d) Top-bottom.
Ans. : (a)
100. is a CSS property written in CSS file or directly in the style of an element.
 (a) Absolute (b) Fixed (c) Float (d) Static
Ans. : (c)
101. keeps the element float on left side of container.
 (a) Float : left (b) Float : right
 (c) Float : none (d) Float : top
Ans. : (a)
102. keeps the element float on right side of container.
 (a) Float : left (b) Float : right
 (c) Float : none (d) Float : top
Ans. : (b)
103. is default property which shows the element as it is.
 (a) Float : left (b) Float : right
 (c) Float : none (d) Float : top
Ans. : (c)
104. The Property is CSS defines how the components are going to be placed on the web page.
 (a) Static (b) Fixed (c) Display (d) Relative
Ans. : (c)
105. The Property is used to define the display of different parts of a web-page.
 (a) display (b) static (c) Fixed (d) absolute
Ans. : (a)
106. Value is used to display an element as an inline element.
 (a) Inline (b) Block (c) None (d) Block-inline
Ans. : (a)
107. is used to display an element as an block element.
 (a) Inline (b) Block (c) None (d) Block-inline
Ans. : (b)

108. Value is used to set width and height.
 (a) Inline (b) Block (c) None (d) Block-inline

Ans.: (d) Value element is completely removed.

109. Using Value element is completely removed.
 (a) Inline (b) Block (c) None (d) Block-inline

Ans.: (c)

1.5 Ordered list or numbered list

110. The tag defines an Ordered list.

- (a) (b) (c) <dt> (d)

Ans.: (b)

111. A list can be numerical or alphabetical.

- (a) Ordered (b) Unordered
 (c) Definition (d) None

Ans.: (a)

112. The attribute is used to specify the numbering type for the used list.

- (a) Reversed (b) start (c) Type (d) Name

Ans.: (c)

113. The default value of type attribute of ordered list is

- (a) 1 (b) a (c) 1 (d) 10

Ans.: (c)

114. The Attribute specifies that the items of the lists are specified in reverse order.

- (a) type (b) reverse (c) Start (d) Name

Ans.: (b)

115. The specifies the starting number of the first item in an ordered list.

- (a) Type (b) Reversed (c) start (d) Name

Ans.: (c)

116. An Unordered list is created using tag.

- (a) (b) (c) <dd> (d) <dt>

Ans.: (b)

117. list is also called as bulleted list.

- (a) Unordered (b) Ordered (c) Dataset (d) lists

Ans.: (a)

118. Each list item starts with tag.
 (a) <dd> (b) <dt> (c) (d)

Ans.: (d)

119. The attribute of tag sets the list item marked to disc, circle or square.

- (a) type (b) start (c) name (d) reversal

Ans.: (a)

120. The is the default value of type attribute of tag.

- (a) Disc (b) square (c) circle (d) bullet

Ans.: (a)

1.7 Definition list

121. To define a definition list tag is used.

- (a) <dd> (b) <dl> (c) <dt> (d)

Ans.: (b)

122. The tag is used to define the term.

- (a) (b) <dd> (c) <dt> (d) <dl>

Ans.: (c)

123. The is used to define term's definition.

- (a) <dd> (b) <dt> (c) <dl> (d)

Ans.: (a)

124. The list within another list is called list.

- (a) listed (b) tested (c) none (d) nested.

Ans.: (d)

1.8 Inserting audio and video in HTML5

125. MPEG stands for

- (a) Making Pictures Expert Groups (b) Moving pictures Experts Group
 (c) Managing Pictures Expert Groups (d) Merging Pictures Expert Groups

Ans.: (b)

126. AAC stands for

- (a) Auto Audio coding (b) Arrange Audio Coding
 (c) Advanced Audio Coding (d) Advanced Arrange Coding

Ans.: (c)

127. The element enables to embed or add audio files an webpages.
 (a) <audio> (b) <video> (c) <style> (d)
128. Using attribute of <audio> tag the audio will start playing as soon as it is ready.
 (a) Controls (b) Src (c) loop (d) Autoplay
129. The attribute of <audio> tag defines the audio controls should be displayed.
 (a) loop (b) muted (c) controls (d) Src
130. The attribute of <audio> tag sets the audio will start over again, every time it is finished.
 (a) loop (b) controls (c) Src (d) muted
131. The attribute of <audio> tag specifies that the audio output should be muted.
 (a) Src (b) Controls (c) Autoplay (d) muted
132. The attribute of <audio> tag specifies the URL of the audio file.
 (a) muted (b) loop (c) Src (d) controls
133. The attribute is used to add audio controls such as play, pause and volume.
 (a) loop (b) controls (c) autoplay (d) Src
134. The tag is used to specify multiple media resources for media elements.
 (a) (b) (c) <style> (d) <source>
135. The tag is used to embed video into web page.
 (a) <video> (b) <audio> (c) <style> (d)
136. The attribute defines the link to video file.
 (a) Autoplay (b) Height (c) Src (d) loop

137. The attribute specifies that the video will start playing as soon as it is ready.
 (a) Controls (b) Autoplay (c) loop (d) Muted
138. The attribute specifies that video controls should be displayed.
 (a) controls (b) loop (c) autoplay (d) muted
139. The attributes sets the height of the video player.
 (a) Width (b) loop (c) Muted (d) height
140. The attribute specifies that the video will start over again every time it is finished.
 (a) Muted (b) loop (c) Controls (d) Autoplay
141. The attribute specifies that the audio output of the video should be muted.
 (a) controls (b) loop (c) Muted (d) Height
142. The attribute an image to be shown while the video is downloading.
 (a) Poster (b) URL (c) Autoplay (d) Muted
143. The attribute specifies if and how the author thinks the video should be loaded when the web page loads.
 (a) Poster (b) width (c) controls (d) preload
144. The attribute sets the width of the video player.
 (a) Muted (b) width (c) loop (d) controls

1.9 Image map in HTML5

145. An image with multiple hyperlinks is called an
 (a) links (b) Navigation
 (c) Hyperlinks (d) Image map
146. is used to connect links to different regions on the web page.
 (a) links (b) hotspots (c) Image map (d) Hyper links

147. The clickable regions of image map are called as
- (a) hotspots (b) Image map
(c) Hyperlinks (d) links

Ans.: (a)

148. tag is used to insert an image on a web page.
- (a) <image> (b) (c) <body> (d) <head>

Ans.: (b)

149. To create a Client Side Image Map attribute of tag is used.
- (a) Ismap (b) Nomap (c) usemap (d) Myrmap

Ans.: (c)

150. Usemap attribute of tag is used with valve which is preceded with a symbol.
- (a) # (b) @ (c) \$ (d) •

Ans.: (a)

151. The attribute acts as a pointer which indicates that the image is a Client Side Image Map.
- (a) Ismap (b) Nomap (c) Myrmap (d) usemap

Ans.: (d)

152. The tag is used to map the image.
- (a) (b) <map> (c) <area> (d) <body>

Ans.: (b)

153. The attribute of <map> tag specifies name of the image used for client side image map.
- (a) src (b) href (c) Name (d) alt

Ans.: (c)

154. tag defines the specific clickable regions.
- (a) <map> (b) (c) <body> (d) <area>

Ans.: (d)

155. The attribute of <area> tag defines the URL to which the clickable region within the image map navigates.
- (a) Href (b) Src (c) URL (d) Link

Ans.: (a)

156. The attribute defines the shape as rect, circle or poly.
- (a) Coords (b) shape (c) alt (d) Href

Ans.: (b)

157. The attribute specifies co-ordinates of the clickable regions on the image map.
- (a) (b) (c) coords (d)

Ans.: (c)

158. The attribute specifies extra information about clickable area.
- (a) Coords (b) shape (c) href (d) alt

Ans.: (d)

1.10 Inline Frame in HTML5

159. The element creates an inline frame.
- (a) <body> (b) <frame> (c) <link> (d) <iframe>

Ans.: (d)

160. frames are often used in online advertising.
- (a) Inline (b) Internal (c) External (d) Embedded

Ans.: (a)

161. The attribute specifies the address of the document to embed in the <iframe>.
- (a) Height (b) Width (c) Src (d) Name

Ans.: (c)

162. The attribute specifies the height of an <iframe>
- (a) Name (b) Height (c) Width (d) Srcdoc

Ans.: (b)

163. The attributes specify the width of an <iframe>
- (a) Width (b) Height (c) Name (d) Src

Ans.: (a)

164. The attribute specifies name of an <iframe>
- (a) Srcdoc (b) Src (c) Width (d) Name

Ans.: (d)

165. The attribute specifies the HTML content of the page to show in the <iframe>
- (a) Src (b) Srcdoc (c) Name (d) Height

Ans.: (b)

1.11 Website Hosting

166. Website is made available on the Internet with the help of
- (a) Website (b) Web space
(c) Web world (d) Web hosting

Ans.: (d)

167. is the service of providing storage space.
- (a) Website (b) Web hosting
(c) Web world (d) web page

Ans.: (b)

168. The Companies that provides web hosting services are called
(a) Web hosts (b) Web page (c) Web site (d) Browser

Ans.: (a)
169. own and manage web servers.
(a) Website (b) Web page (c) Web Hosts (d) Web link

Ans.: (c)
170. hosting gives domain name to you website.
(a) free (b) fixed (c) Dedicated (d) shared

Ans.: (d)
171. are paid hosting servers for large web site
(a) free (b) dedicated hosting
(c) fixed (d) shared

Ans.: (b)
172. provides you free hosting of the website for limited period of time.
(a) free hosting (b) fixed
(c) shared (d) Dedicated hosting

Ans.: (a)

MCQ (Two Correct Answers)

1.1 Advanced Web Designing

1. The major browsers which support features of HTML5 are
(a) Windows Explorer (b) Microsoft Edge
(c) Google Chrome (d) My files

Ans.: (b), (c)

1.2 Forms in HTML5

2. Default range of range control is to
(a) 0 (b) 100 (c) 120 (d) 200

Ans.: (a), (b)

3. Following are the values of type attribute of <input> tag
(a) Minimum (b) Maximum
(c) date (d) email

Ans.: (c), (d)

4. Following attributes of <input> tag are used to specify minimum and maximum value for input field
(a) min (b) disabled (c) multiple (d) max

Ans.: (a), (d)
5. Multiple value of type attribute of <input> tag works with and
(a) email (b) file (c) week (d) month

Ans.: (a), (b)

1.3 <meta> tag

6. Following are the attributes of <meta> tag
(a) Charset (b) email (c) http-equiv (d) file

Ans.: (a), (c)

7. Following are the values of http-equiv attribute of <meta> tag
(a) month (b) refresh (c) image (d) expires

Ans.: (b), (d)

8. Charset attribute of <meta> tag use for Indian characters and for Chinese characters.
(a) UFT-8 (b) Big 5 (c) UTF-2 (d) Big B

Ans.: (a), (b)

1.4 Cascading Style Sheets HTML5

9. A CSS rule set contains and block.
(a) value (b) selector (c) Declaration (d) Property

Ans.: (b), (c)

10. Examples of declaration are
(a) H1 {color : green} (b) b {font - size : 11px}
(c) h1 {color : green} (d) b {font-style = 11px}

Ans.: (a), (b)

11. Text decoration property is used to add
(a) line-through (b) strike-through
(c) underline (d) justify

Ans.: (a), (c)

12. Text-align property has following value
(a) Middle (b) Center (c) top (d) Justify

Ans.: (b), (d)

13. Following are the values of border property.
 (a) Solid (b) Liquid (c) Groove (d) Gentle

Ans.: (a), (c)

14. ID selector is written with character followed by id name and class selector is written with character followed by class name.
 (a) asterisk (*) (b) Dollar (\$) (c) hash (#) (d) period (.)

Ans.: (c), (d)

15. Types of positioning in CSS are
 (a) Form (b) Constant (c) Fixed (d) static

Ans.: (c), (d)

16. Following are the types of floating properties
 (a) float:left (b) float:right
 (c) float:top (d) float:bottom

Ans.: (a), (b)

17. Following are the values of Display properties
 (a) Middle (b) Inline (c) Block (d) top

Ans.: (b), (c)

1.5 Ordered list or numbered list

18. An ordered list can be or
 (a) Static (b) Numerical (c) Constant (d) Alphabetical

Ans.: (b), (d)

19. Following are the values of type attribute are tag
 (a) 1 (b) 1 (c) 5 (d) z

Ans.: (a), (b)

20. Following are the attributes of tag
 (a) Alphabet (b) start (c) Number (d) Reserved

1.6 Unordered list or bulleted list

21. List item starts with tag in and tags
 (a) <dd> (b) <dt> (c) (d)

Ans.: (c), (d)

22. Following are the values of type attribute of tag
 (a) circle (b) triangle (c) square (d) bold

Ans.: (a), (c)

1.7 Definition list

23. To create items in definition list and and tag are used.
 (a) <dt> (b) <dd> (c) <dm> (d)

Ans.: (a), (b)

24. Examples of nested list are and
 (a) Double list (b) Single level list
 (c) Multi level list (d) Grouping list

Ans.: (b), (c)

1.8 Inserting audio and video in HTML5

25. Common audio formats are
 (a) .acc (b) .mp3 (c) .mp4 (d) .webm

Ans.: (a), (b)

26. Following are attributes of <audio> tag
 (a) width (b) autoplay (c) muted (d) height

Ans.: (b), (c)

27. Following attributes of <audio> tag does not have any values.
 (a) controls (b) arc (c) loop (d) muted

Ans.: (a), (d)

28. Following are common video formats
 (a) .mp3 (b) .aac (c) .mp4 (d) .webM

Ans.: (c), (d)

29. Following are the attributes of <video> tag
 (a) href (b) Src (c) loop (d) link

Ans.: (b), (c)

30. Preload attribute of <video> tag have following values
 (a) Src (b) width (c) auto (d) Metadata

Ans.: (c), (d)

31. To set the width and height of video following attributes of <video> tag are used
 (a) top (b) bottom (c) width (d) height

Ans.: (c), (d)

1.9 Image map in HTML5

32. Image maps are of two types
 (a) My side (b) client side (c) Host side (d) server side

Ans.: (b), (d)

33. Tags used to define Client Side Image Map are
 (a) (b) <link> (c) <map> (d) <alt>

Ans.: (a), (c)

34. A given element can contain multiple element with it.

- (a) <map> (b) <area> (c) <link> (d) <body>

Ans.: (a), (b)

35. Following are the attributes of <area> tag.

- (a) Href (b) Src (c) link (d) coords

Ans.: (a), (d)

36. Shape attribute of <area> tag can have following values.

- (a) Square (b) Rect (c) Circle (d) Star

Ans.: (b), (c)

1.10 Inline Frame in HTML5

37. Attributes of <iframe> tag are

- (a) Src (b) href (c) loop (d) Srcdoc

Ans.: (a), (d)

1.11 Website Hosting

38. Types of Web Hosting are

- (a) Fixed hosting (b) Shared Hosting
(c) Dedicated hosting (d) My Hosting

Ans.: (b), (c)

MCCQ (Three Correct Answers)

1.1 Advanced Web Designing

39. The major browsers which support features of HTML5 are

- (a) Google Chrome (b) Window explorer
(c) My Documents (d) Safari
(e) Opera (f) My files

Ans.: (a), (d), (e)

1.2 Forms in HTML5

40. <input type = "date"> defines a date picker with the

- (a) week (b) Date (c) year
(d) month (e) day (f) Mthname

Ans.: (c), (d), (e)

41. Following are the valid values of type attribute of <input> tag

- (a) link (b) date (c) list
(d) email (e) file (f) start

Ans.: (b), (d), (e)

42. Following are the valid attributes of <input> tag

- (a) autofocus (b) link (c) pattern
(d) list (e) multiple (f) start

Ans.: (a), (c), (e)

1.3 <meta> tag

43. Following are the attributes of <meta> tag

- (a) Content (b) Charset (c) Name
(d) Min (e) Max (f) Minimum

Ans.: (a), (b), (c)

44. Name attribute of <meta>tag specifies the name of meta data like

- (a) Content (b) author (c) Keywords
(d) Src (e) Description (f) Desc

Ans.: (b), (c), (e)

45. Following are the valid values of http-equiv attribute of <meta> tag

- (a) Refresh (b) expires (c) get-cookie (d) make-cookie
(e) set-cookie (f) get-value

Ans.: (a), (b), (e)

1.4 Cascading Style Sheets HTML5

46. Following are the types of CSS

- (a) Inline (b) Internal (c) Object (d) External
(e) Multiple (f) Multilevel

Ans.: (a), (b), (d)

47. Text-decoration property is used to add

- (a) Strike-through (b) line-through
(c) underline (d) overline
(e) middle line (f) Line between

Ans.: (b), (c), (d)

48. Text-align property has following value
- (a) left (b) top (c) right (d) Center
- (e) middle (f) Joint

Ans.: (a), (c), (d)

49. Following are valid CSS properties.

- (a) Mg-color (b) Bg-color (c) Color (d) Background-image
- (e) Background-color (f) Fg-color

Ans.: (c), (d), (e)

50. Following are the valid CSS properties used to control fonts

- (a) font-figure (b) font-family (c) font-style
- (d) font-weight (e) font-color (f) font-face

Ans.: (b), (c), (d)

51. The elements can be positioned using properties.

- (a) top (b) bottom (c) middle (d) right
- (e) up (f) down

Ans.: (a), (b), (d)

52. Types of Positioning in CSS are

- (a) Static (b) Fixed (c) Absolute (d) Mixed
- (e) Firm (f) Constant

Ans.: (a), (b), (c)

53. Following are the type of floating properties

- (a) Float: mid (b) Float: top (c) Float: left
- (d) Float: none (e) Float: right (f) Float: min

Ans.: (c), (d), (e)

54. Following are the values of Display Property

- (a) Internal (b) Inline (c) Block (d) Block-inline
- (e) Outline (f) Between

Ans.: (b), (c), (d)

1.5 Ordered list or numbered list

55. Following are the valid values of type attribute of tag

- (a) I (b) 1 (c) a (d) 2
- (e) 0 (f) C

Ans.: (a), (b), (c)

56. Following are the attributes of tag

- (a) loop (b) type (c) Name (d) Reversed
- (e) start (f) src

Ans.: (b), (d), (e)

1.6 Unordered list or bulleted list

57. Following are the valid values of type attribute of tag

- (a) rectangle (b) square (c) triangle (d) circle
- (e) Disc (f) diamond

Ans.: (b), (d), (e)

1.8 Inserting audio and video in HTML5

58. Following are the common Audio format

- (a) .mp3 (b) .aac (c) .mp4 (d) .ogg
- (e) .Webm (f) .www

Ans.: (a), (b), (d)

59. Following are the attribute of <audio> tag

- (a) Width (b) Controls (c) loop (d) muted
- (e) Height (f) Depth

Ans.: (b), (c), (d)

60. Following attributes of <audio> and <video> tags does not have any values.

- (a) Autoplay (b) Controls (c) Src (d) Muted
- (e) loop (f) Href

Ans.: (a), (b), (d)

61. Following are the common video formats

- (a) .mp3 (b) .mp4 (c) .ogg (d) .webM
- (e) .aac (f) .mp9

Ans.: (b), (c), (d)

62. Following are the attributes of <video> tag

- (a) Height (b) links (c) href (d) loop
- (e) muted (f) video

Ans.: (a), (d), (e)

63. Following are the valid values of preload attribute of <video> tag

- (a) Auto (b) Metadata (c) None (d) Autoplay
- (e) Autopause (f) SetData

Ans.: (a), (b), (c)

1.9 Image map in HTML5

64. Tags used to define Client Side Image Map are
- (a) <link> (b) (c) <href> (d) <map>
 (e) <area> (f) <image>

- Ans.: (b), (d), (e)
65. Following are the values of shape attribute of <area> tag
- (a) rect (b) circle (c) square (d) star
 (e) poly (f) triangle

- Ans.: (a), (b), (e)

66. Following are the attributes of <area> tag.
- (a) href (b) src (c) width (d) alt
 (e) height (f) src doc

- Ans.: (a), (b), (d)

1.10 Inline Frame in HTML5

67. Following are the attributes of <iframe> tag
- (a) Src (b) Name (c) Srcdoc (d) loop
 (e) href (f) width

- Ans.: (a), (b), (c)

1.11 Website Hosting

68. Types of Web hosting are
- (a) Fixed hosting (b) Dedicated hosting
 (c) formal hosting (d) shared hosting
 (e) free hosting (f) No hosting

- Ans.: (b), (d), (e)

Match the pair

1.2 Forms in HTML5

(I)

A	B
(1) <input type = "color">	(a) Defines image as submit button
(2) <input type = "number">	(b) Define the color picker
(3) <input type = "url">	(c) Defines date picker
(4) <input type = "image">	(d) Defines a field for entering number
	(e) Defines a field for entering URL

- Ans.: (1) - (b), (2) - (d), (3) - (e), (4) - (a)

(II)

A	B
(1) <input type = "date">	(a) Defines month and year control
(2) <input type = "email">	(b) Defines a range control
(3) <input type = "month">	(c) Defines week control
(4) <input type = "range">	(d) Defines a date picker
	(e) Defines field for email address

- Ans.: (1) - (d), (2) - (e), (3) - (a), (4) - (b)

(III)

A	B
(1) <input type = "datetime-local">	(a) Defines a control for entering a time
(2) <input type = "time">	(b) Defines a date picker
(3) <input type = "week">	(c) Defines a file select field
(4) <input type = "search">	(d) Defines a text field for entering a search string
(5) <input type = "file">	(e) Defines a week and year control
(6) <input type = "tel">	(f) Defines color picker
	(g) Defines input field that contains telephone number.

- Ans.: (1) - (b), (2) - (a), (3) - (e), (4) - (d), (5) - (c), (6) - (g)

(IV)

A	B
(1) Disabled	(a) Specifies regular expression to check input values
(2) Max	(b) Specifies that an input field should be disabled
(3) Min	(c) Specifies maximum value for an input field
(4) Pattern	(d) Specifies height and width
	(e) Specifies minimum value for an input field

- Ans.: (1) - (b), (2) - (c), (3) - (e), (4) - (a)

(V)

	A	B
(1) Read only	(a) Specifies that an input field is required	
(2) Placeholder	(b) Specifies that input field is read only	
(3) Required	(c) This acts as a temporary label	
(4) Autocomplete	(d) Specifies whether a form should have auto-complete ON or OFF	
	(e) Defines a control for entering time	

Ans.: (1) – (b), (2) – (c), (3) – (a), (4) – (d)

1.3 <meta> tag

(I)

	A	B
(1) Name	(a) Used for http response message headers	
(2) Content	(b) Specifies the name of meta data	
(3) Charset	(c) It can have any textual matter related to the name	
(4) http-equiv	(d) Specifies the character encoding used by the document	
	(e) Changes color of the text	

Ans.: (1) – (b), (2) – (c), (3) – (d), (4) – (a)

1.4 Cascading Style Sheets HTML5

(I)

	A	B
(1) Selector	(a) It contains declarations separated by semicolon	
(2) Declaration Block	(b) It is a type of attribute of HTML document	
(3) Property	(c) These are assigned to CSS properties	
(4) Value	(d) It indicates the HTML element you want to style	
	(e) Inline CSS	

Ans.: (1) – (d), (2) – (a), (3) – (b), (4) – (c)

(II)

	A	B
(1) Font-weight	(a) Used to control fonts	
(2) Font-style	(b) Used to bold text	
(3) Font-family	(c) Used to italicize text	
(4) Font-size	(d) Used to control size of the font	
	(e) Changes the color of the text	

Ans.: (1) – (b), (2) – (c), (3) – (a), (4) – (d)

(III)

	A	B
(1) Background-color	(a) Changes the color of the text	
(2) Color	(b) Sets the image as background of the web page	
(3) Background image	(c) Sets the background color of the web page	
(4) Border	(d) Use to bold text	
	(e) Adds the border to the webpage	

Ans.: (1) – (c), (2) – (a), (3) – (b), (4) – (e)

(IV)

	A	B
(1) Text-decoration	(a) This property is used to control horizontal alignment of text	
(2) Text-align	(b) This property is used to add blank spaces around the content of element.	
(3) Letter-spacing	(c) This property is used to control horizontal spacing between characters.	
(4) Padding	(d) This property is used to add underline, overline effects.	
	(e) Used to italicize text	

Ans.: (1) – (d), (2) – (a), (3) – (c), (4) – (b)

(V)

	A	B
(1) Class selector	(a) Used as wild character	
(2) ID Selector	(b) Written with has (#) character	
(3) Universal Selector	(c) Written with period (.) character	
(4) Grouping Selector	(d) Use to select all the elements with same style definitions	
	(e) Sets the position of the text	

Ans.: (1) – (c), (2) – (b), (3) – (a), (4) – (d)

(VI)

	A	B
(1) Static Positioning	(a)	This property forces an element into fixed position
(2) Fixed Positioning	(b)	This property sets an element in a specific location
(3) Relative Positioning	(c)	Selects Id attribute of HTML element
(4) Absolute positioning	(d)	This property is used to set the element relative to its normal position
	(e)	This property is default position for HTML elements

Ans : (1) - (e), (2) - (a), (3) - (d), (4) - (b)

1.5 Ordered list or numbered list

(I)

	A	B
(1) 	(a)	Defines values for the list
(2) Type	(b)	Displays list items in reverse order
(3) Reversed	(c)	Specifies starting number of list
(4) Start	(d)	Specifies list items
	(e)	Defines ordered list

Ans : (1) - (e), (2) - (a), (3) - (b), (4) - (c)

1.6 Unordered list or bulleted list

(I)

	A	B
(1) 	(a)	Create unordered list
(2) 	(b)	Sets the list item marker to a circle
(3) Type = "circle">	(c)	Sets the list item marker to square
(4) Type = "square">	(d)	The list items will not be marked
	(e)	Specifies list items

Ans : (1) - (a), (2) - (e), (3) - (b), (4) - (c)

1.7 Definition list

(I)

	A	B
(1) <dl>	(a)	Tag used to define term
(2) <dd>	(b)	Tag used to define term's definition
(3) <dt>	(c)	Used to define unordered list
(4) Nested list	(d)	Defines definitions list
	(e)	List within another list

Ans : (1) - (d), (2) - (b), (3) - (a), (4) - (e)

1.8 Inserting audio and video in HTML5

(I)

	A	B
(1) <audio>	(a)	Advanced Audio Coding
(2) Mp3	(b)	Automated Arrange Control
(3) Aac	(c)	Open container and free audio format
(4) Ogg	(d)	This element enables you to add audio files an webpages
	(e)	Motion picture expert group

Ans : (1) - (d), (2) - (e), (3) - (a), (4) - (c)

(II)

	A	B
(1) Autoplay	(a)	Specifies URL of audio/video file
(2) Controls	(b)	The audio-video controls should be displayed
(3) Loop	(c)	This audio will start playing as soon as it is ready
(4) Src	(d)	Sets the height of the audio/video player
	(e)	Video / audio will start over again every time it is finished.

Ans : (1) - (c), (2) - (b), (3) - (e), (4) - (a)

(III)

A		B	
(1) Muted	(a)	Sets the height of the video player	
(2) Height	(b)	Specifies if and how the author should be loaded when webpage loads.	
(3) Poster	(c)	Sets the width of the video player*	
(4) Preload	(d)	Specifies that the audio output of the video should be muted	
	(e)	Specifies on image to be shown while video is downloading	

Ans. : (1) - (d), (2) - (a), (3) - (e), (4) - (b)

1.9 Image map in HTML5

(I)

A		B	
(1) 	(a)	It is used to connect links to different regions on the web page	
(2) <map>	(b)	Defines the clickable regions	
(3) <area>	(c)	It specifies name of image used for client side image map	
(4) Image map	(d)	Clickable regions are called as hotspots	
	(e)	It is used to insert image on the web page	

Ans. : (1) - (e), (2) - (c), (3) - (b), (4) - (a)

(II)

A		B	
(1) Href	(a)	It can have value rect, circle and poly	
(2) Shape	(b)	Image with multiple hyperlinks	
(3) Coords	(c)	Defines URL to which the clickable region within the image map navigators	
(4) Alt	(d)	Specifies coordinates of the clickable regions	
	(e)	Specifies extra information about clickable area	

Ans. : (1) - (c), (2) - (a), (3) - (d), (4) - (e)

1.10 Inline Frame in HTML5

(I)

A		B	
(1) Name	(a)	Specifies the HTML content of the page to show the <iframe>	
(2) Src	(b)	Specifies name of the <iframe>	
(3) Height	(c)	Specifies the address of the document to embed in the <iframe>	
(4) Srcdoc	(d)	Specifies the width of an <iframe>	
	(e)	Specifies the height of an <iframe>	

Ans. : (1) - (b), (2) - (c), (3) - (e), (4) - (a)

1.11 Website Hosting

(I)

A		B	
(1) Web host	(a)	It gives domain name to your website	
(2) Shared Hosting	(b)	Websites providing free hosting for limited period	
(3) Dedicated Hosting	(c)	Computer with internet domain system	
(4) Free hosting	(d)	Owns and manages web servers	
	(e)	These are paid hosting servers for large websites	

Ans. : (1) - (d), (2) - (a), (3) - (e), (4) - (b)

Programs

1.2 Forms in HTML5

- We had studied various controls like text, radio, checkbox, submit, reset, select and textarea. These controls are used to collect different kinds of inputs such as name, address, single or multiple options as well as clearing and submitting data etc.
- HTML5 introduces additional form controls which can also be used validation purpose.
- HTML5 advanced <input> elements

- HTML5 introduces a number of new input types.

Input type	Description
<input type="color">	Defines a color picker
<input type="number">	Defines a field for entering a number
<input type="url">	Defines a field for entering a URL.
<input type="image">	Defines an image as a submit button.
<input type="date">	Defines a date picker with the year, month and day
<input type="email">	Defines a field for an e-mail address
<input type="month">	Defines a month and year control in format is "YYYY-MM"
<input type="range">	Define a range control. Default range is 0 to 100.
<input type="datetime-local">	Defines a date picker that includes the year, month, day and time.
<input type="time">	Defines a control for entering a time.
<input type="week">	Defines a week and year control.
<input type="search">	Defines a text field for entering a search string like a site search or Google search.
<input type="file">	Defines a file-select field and a "Browse" button for file uploads.
<input type="tel">	Used to define input fields that should contain a telephone number.

- Following is the list of some common input restrictions is given below, few of which CAN be used for validation purpose.

Attribute	Description
Disabled	Specifies that an input field should be disabled.
Max	Specifies the maximum value for an input field.
Min	Specifies the minimum value for an input field.
Pattern	Specifies a regular expression to check the input values.
read only	Specifies that an input field is read only (cannot be changed).
placeholder	This acts as a temporary label showing the purpose of a text field without requiring a label tag.
Required	Specifies that an input field is required (must be filled out).

Attribute	Description
autocomplete	Specifies whether a form or input field should have autocomplete On or Off.
autofocus	Specifies that the input field should automatically get focus when the page loads.
height and width	Specifies the height and width of an <input type="image">
Multiple	Specifies that the user is allowed to enter more than one value in the <input> element. This works with input types like email and file.

Examples of advanced input elements

- Design a web page that should accept Personal Details of the user i.e. name of the user along with date and time values. The Page must contain submit button.

Ans. :

Coding :

```

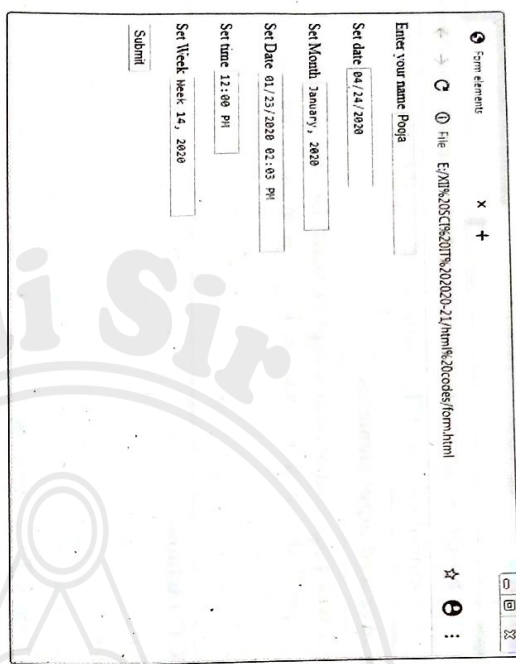
<!DOCTYPE html>
<html>
<head>
<title>
Form Date & Time elements
</title>
</head>
<body>
<form name="f1">
Enter your name
<input type="text" name="f1" autocomplete><br><br>
Set date
<input type="date"><br><br>
Set Month
<input type="month"><br><br>
Set Date
<input type="datetime-local"><br><br>
Set time
<input type="time"><br><br>
    
```



```

Set Week
<input type="week"><br><br>
<input type="submit" name="b1" value="Submit">
</form>
</body>
</html>
    
```

Output:



2. Design a web page that should accept name of the user, Email ID, Number of years completed in office, Office phone number(compulsory), image with submit button.

Ans. :

Coding :

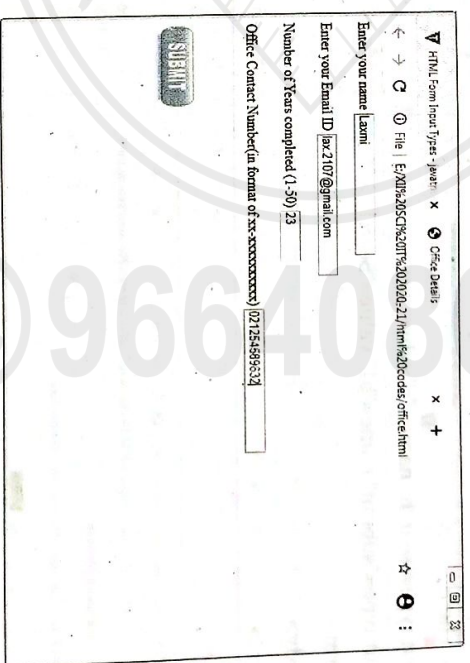
```

<!DOCTYPE html>
<html>
<head>
<title>
Office Details
</title>
</head>
<body>
<form name="f1">
    
```

```

Enter your name
<input type="text" name="f1" autocomplete=<br><br>
Enter your Email ID
<input type="email" name="emailid"><br><br>
Number of Years completed (1-50)
<input type="number" min="1" max="50"><br><br>
Office Contact Number(in format of xx-xxxxxxx)
<input type="tel" name="contact" pattern="[0-9] [2]-[0-9] [10]"
required><br><br>
<input type="image" src="E:\XII SCI IT 2020-21 \html codes \submit.jpg"
alt="Submit" width="100" height="100">
</form>
</body>
</html>
    
```

Output:



3. Design a web page that should accept name of the user, select file for upload, color picker tool, website URL, search and submit button.

Ans. :

Coding :

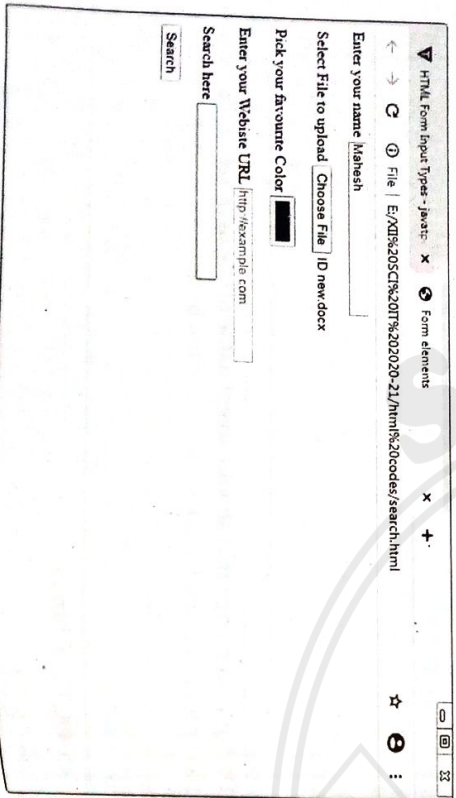
```

<!DOCTYPE html>
<html>
<head>
    
```

```

</title>
Form elements
</title>
</head>
<body>
<form name="f1">
Enter your name
<input type="text" name="f1" autocomplete="off"><br><br>
Select File to upload
<input type="file" name="newfile"><br><br>
Pick your favourite Color
<input type="color" name="color"><br><br>
Enter your Website URL
<input type="url" name="website" placeholder="http://example.com"><br><br>
Search here
<input type="search" name="s"><br><br>
</form>
</body>
</html>
    
```

Output :



1.3 <meta> tag

- HTML <meta> tag is used to represent the metadata about the HTML document. It specifies page description, keywords, copyright, language, author of the documents, etc.
- The metadata does not display on the webpage, but it is used by search engines, browsers and other web services which scan the site or webpage to know about the webpage.
- With the help of meta tag, you can experiment and preview that how your webpage will render on the browser. The <meta> tag is placed within the <head> tag, and it can be used more than one times in a document.

Attribute of <meta> tag

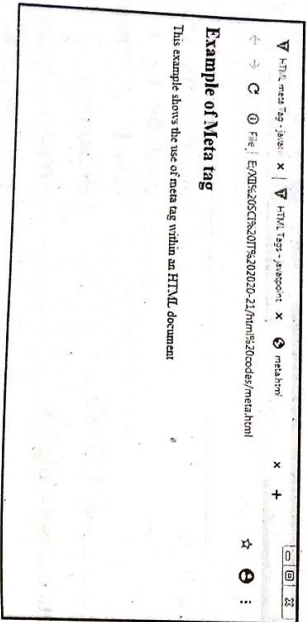
Attribute	Values	Description
Name	The value of the name attribute can be related to any of the following : i) Author ii) Description iii) Keywords iv) copyright e.g. <meta name = "author" >	Specifies the Name of the meta-data like the author, keywords or description.
Content	It can have any textual matter related to the name as in eg. (i) <meta name = "author" content = "Balbharth"> (ii) <meta name = "description" content = "Advance web de- signing"> (iii) <meta name = "keywords" content = "html5, learn html5, list in html 5">	Here content of author is balbharati. Here the value for content attribute specifies name of the topic advance web designing. Here the values for content attribute are given as keywords like html5, learn html5 etc.
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

Attribute	Values	Description
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

```
<!DOCTYPE html>
<html>
<head>
<meta charset="utf-8">
<meta name="keywords" content="Form elements">
<meta name="description" content="input elements">
<meta name="author" content="thisauthor">
<meta http-equiv="refresh" content="5 url=file:///E:/XII%20SCI%20IT%202020-21/html%20codes/form.html">
</head>
<body>
<h2>Example of Meta tag</h2>
<p>This example shows the use of meta tag within an HTML document</p>
</body> </html>
```

Output :

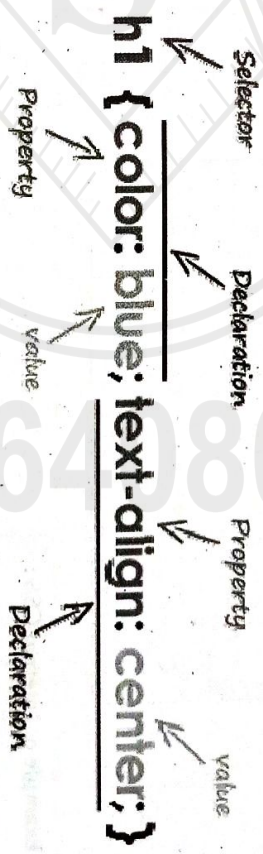


1.4 Cascading Style Sheets HTML5

- CSS stands for Cascading Style Sheets. CSS is a standard style sheet language used for describing the presentation (i.e. the layout and formatting) of the web pages. CSS can either be attached as a separate document or embedded in the HTML document itself. There are three methods of including CSS in an HTML document:
 1. **Inline CSS** -> Using the style attribute in the HTML start tag.
 2. **Embedded or Internal CSS** -> Using the <style> element in the head section of a document.
 3. **External CSS** -> Using the <link> element, pointing to an external CSS file.

Understanding CSS Syntax

- A CSS stylesheet consists of a set of rules that are interpreted by the web browser and then applied to the corresponding elements such as paragraphs, headings, etc. in the document.
- A CSS rule have two main parts, a selector and one or more declarations :



- The selector specifies which element or elements in the HTML page the CSS rule applies to. Whereas, the declarations within the block determines how the elements are formatted on a webpage.
- Each declaration consists of a property and a value separated by a colon (:) and ending with a semicolon (;), and the declaration groups are surrounded by curly braces {}

1. Example of Inline CSS

Coding :

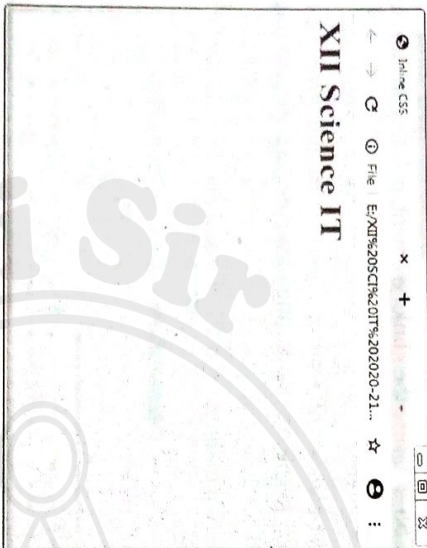
```
<!DOCTYPE html>
<html>
<head>
<title>
Inline CSS
```

```

</title>
</head>
<body style="background-color:pink">
<b style="color:red;font-size:25pt">XII Science IT</b>
</body>
</html>

```

Output :



2. Example of Internal CSS :

Coding :

```

<!DOCTYPE html>
<html>
<head>
<title>
Internal CSS
</title>
<style>
h1|border-style:dotted|
body|background-color:skyblue|
</style>
</head>
<body>

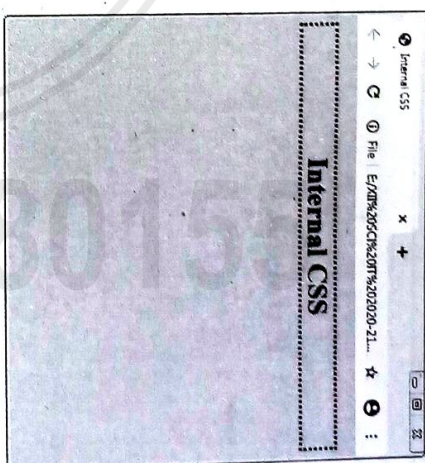
```

```

<h1 align="center">Internal CSS</h1>
</body>
</html>

```

Output :



3. Example of External CSS

Coding :

```

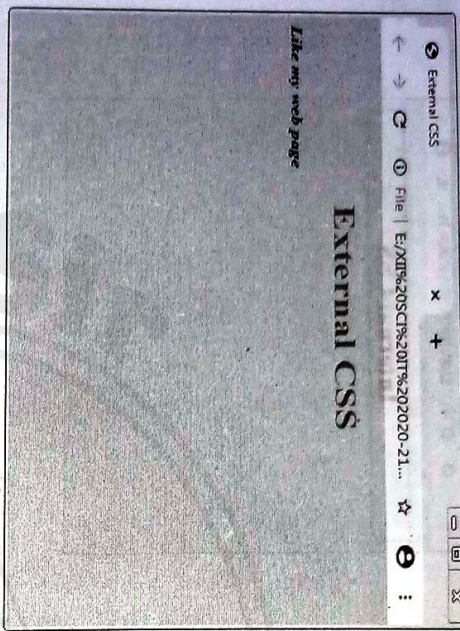
Externalcss.html
<!DOCTYPE html>
<html>
<head>
<title>
External CSS
</title>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
<h1 align="center">External CSS</h1>
<b>Like my web page</b>
</body>
</html>

```

```

Style.css
h1{color:green}
b{font-style:italic}
body{background-color:pink}
    
```

Output :



CSS Id Selector

The id selector is used to define style rules for a *single* or *unique* element. The id selector is defined with a hash sign (#) immediately followed by the id value.

Example of Id selector

Coding :

```

<!DOCTYPE html>
<html>
<head>
<title>
ID Selector
</title>
<style>
#abc{letter-spacing:20pt;color:red}
</style>
</head>
</body>
    
```

```

<h1 align="center">Welcome</h1>
<b id="abc">Welcome to my web page</b>
</body>
</html>
    
```

Output :



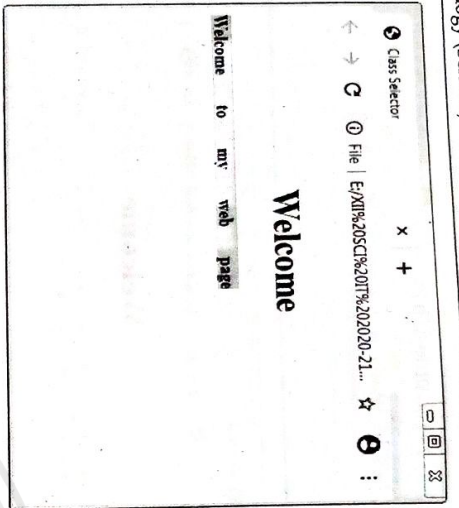
CSS Class Selector

The class selectors can be used to select any HTML element that has a class attribute. All the elements having that class will be formatted according to the defined rule. The class selector is defined with a period sign (.) immediately followed by the class value.

Coding :

```

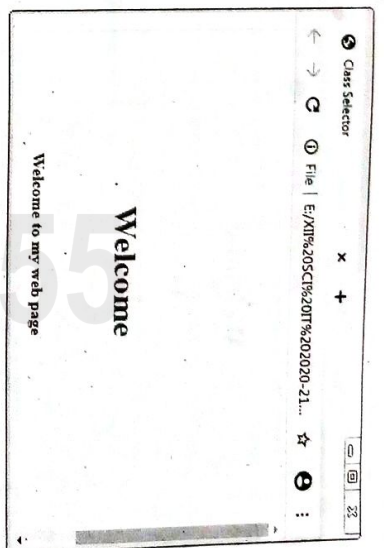
<!DOCTYPE html>
<html>
<head>
<title>
Class Selector
</title>
<style>
.xyz{word-spacing:20pt;background-color:aqua}
</style>
</head>
<body>
<h1 align="center">Welcome</h1>
<b class="xyz">Welcome to my web page</b>
</body>
</html>
    
```

Output :**Universal Selector :**

The universal selector, denoted by an asterisk (*), matches every single element on the page

Example of Universal Selector

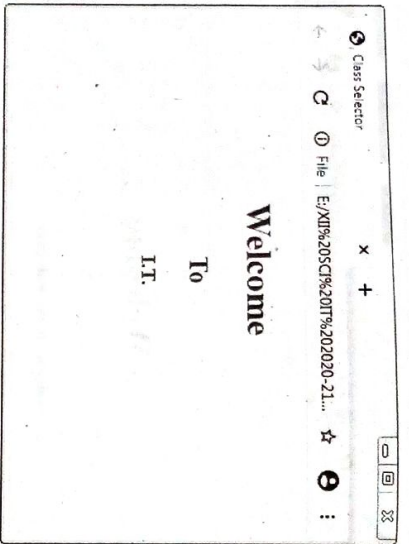
```
<!DOCTYPE html>
<html>
<head>
<title>
Universal Selector
</title>
<style>
*{padding:30px;color:green}
</style>
</head>
<body>
<h1 align="center">Welcome</h1>
<b>Welcome to my web page</b>
</body> </html>
```

Output :**Group Selector**

Often several selectors in a style sheet share the same style rules declarations. You can group them into a comma-separated list to minimize the code in your style sheet. It also prevents you from repeating the same style rules over and over again.

Example of Group selector**Coding :**

```
<!DOCTYPE html>
<html>
<head>
<title>
Class Selector
</title>
<style>
h1,h2,h3{color:green}
</style>
</head>
<body>
<h1 align="center">Welcome</h1>
<h2 align="center">T</h2>
<h3 align="center">I.T.</h3>
</body>
</html>
```

Output :**Positioning in CSS**

Positioning elements appropriately on the web pages is a necessity for a good layout design. Following are several methods in CSS that you can use for positioning elements.

Static Positioning :

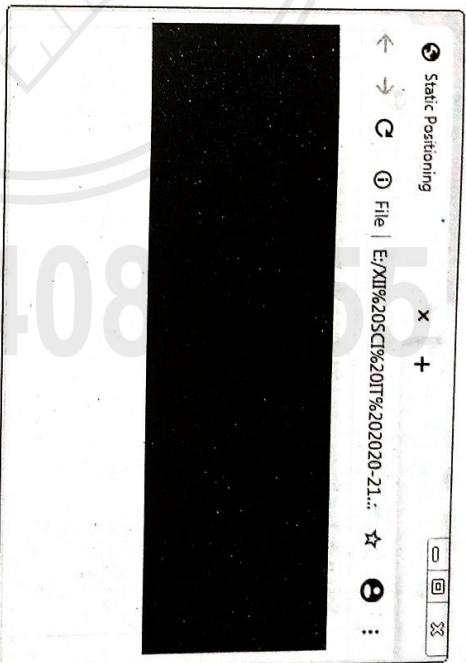
A static positioned element is always positioned according to the normal flow of the page. HTML elements are positioned static by default. Static positioned elements are not affected by the top, bottom, left, right, and z-index properties.

Example

```
<!DOCTYPE html>
<html>
<head>
<title>
Static Positioning
</title>
<style>
p.static{position:static;color:green;background-color:red;padding:20px}
</style>
</head>
<body>
<p class="static">
```

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

Yoga is the best fitness regime for your body, heart and mind, Yoga is the best therapy to keep your mind and body calm. Nothing else would help you calm your mind and heart as Yoga does when you are suffering stress and anxiety. Yoga is the practice for a healthy body, mind, soul and heart

Output :**Fixed Positioning**

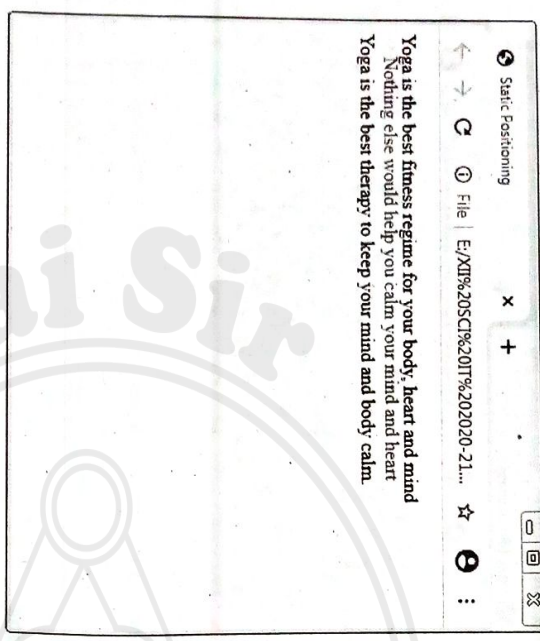
This property helps to put the text fixed on the browser.

Example**Coding :**

```
<!DOCTYPE html>
<html>
<head>
<title>
Fixed Positioning
</title>
<style>
p.fixed{position:fixed;color:green;top:15px:right:120px}
</style>
</head>
```

```
<body>
<p>Yoga is the best fitness regime for your body, heart and mind</p>
<p>Yoga is the best therapy to keep your mind and body calm. </p>
<p class = "fixed">Nothing else would help you calm your mind and heart </p>
</body>
</html>
```

Output:



Relative Positioning:
The relative positioning property is used to set the element relative to its normal position.

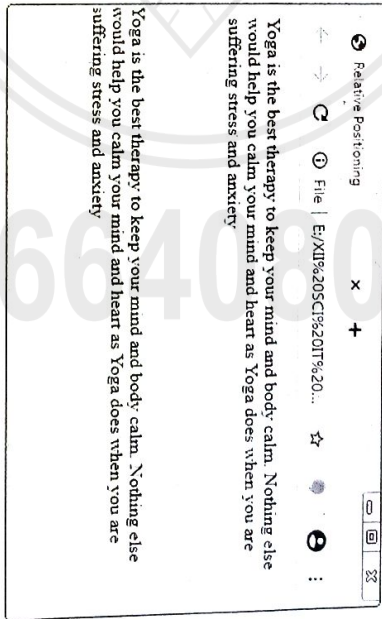
Example

Coding :-

```
<!DOCTYPE html>
<html>
<head>
<title>
Relative Positioning
</title>
<style>
rel[osition:relative;top:55px;right:10px]
```

```
</style>
</head>
<body>
<p>
Yoga is the best therapy to keep your mind and body calm. Nothing else would help you calm your mind and heart as Yoga does when you are suffering stress and anxiety </p>
<p class="rel">
Yoga is the best therapy to keep your mind and body calm. Nothing else would help you calm your mind and heart as Yoga does when you are suffering stress and anxiety </p>
</body>
</html>
```

Output:



Absolute Positioning
This property sets an element in a specific location and it is not affected by the flow of the page.

Example

Coding:

```
<!DOCTYPE html>
<html>
<head>
<title>
Absolute Positioning
```

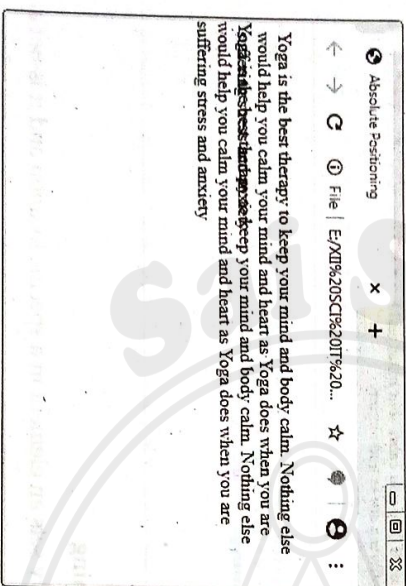


```

</title>
<style>
.abs{position:absolute;top:35px:right:10px}
</style>
</head>
<body>
<p>
Yoga is the best therapy to keep your mind and body calm. Nothing else would
help you calm your mind and heart as Yoga does when you are suffering stress
and anxiety </p>
<p class="abs">
Yoga is the best therapy to keep your mind and body calm. Nothing else would
help you calm your mind and heart as Yoga does when you are suffering stress
and anxiety </p>
</body>
</html>

```

Output :



Float Property

Float is a CSS property written in CSS file. It defines the flow of the content.

Example

Coding :

```

<!DOCTYPE html>
<html>
<head>

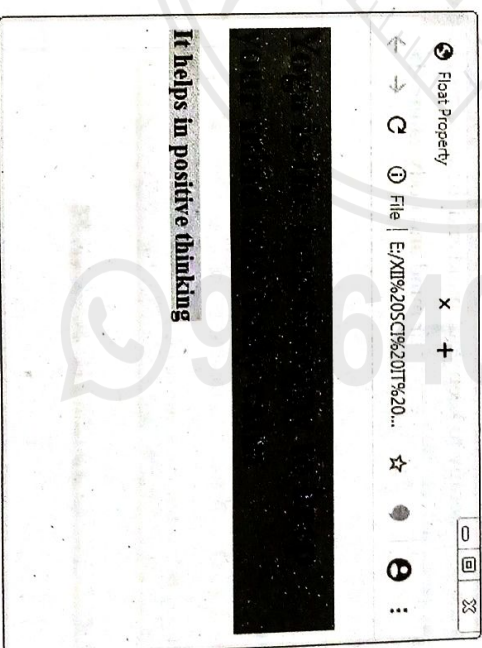
```

```

<title>
Float Property
</title>
<style>
.left{float:left;background-color:green}
.right{float:right;font-size:15pt;background-
color:gold}
</style>
</head>
<body>
<h1 class="left">Yoga is the best therapy to keep your
mind and body calm</h1>
<b class="right">It helps in positive thinking</b>
</body>
</html>

```

Coding :



Display Property

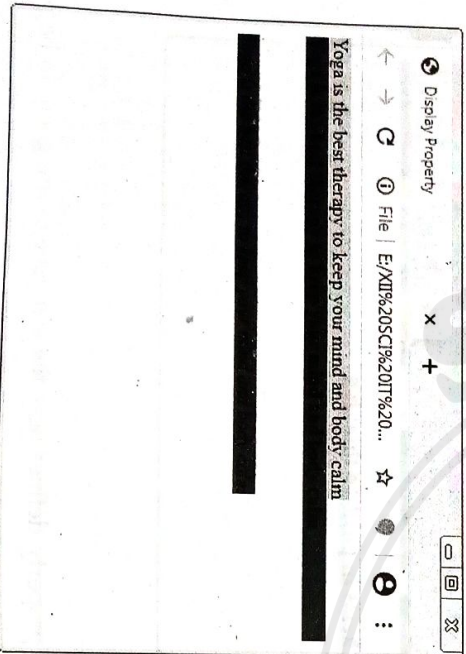
The display property defines how the components are going to be placed on the web page.

Example

Coding :

```
<!DOCTYPE html>
<html>
<head>
<title>
Display Property
</title>
</head>
<body>
<div style="display:inline;background-color:aqua"
p{display:block;background-color:red}
b{display:block;background-color:red}
i{display:block;background-color:red}
</div>
</body>
</html>
```

Output :



1.5 Ordered list or numbered list

The tag defines the ordered list. Attributes used are :-

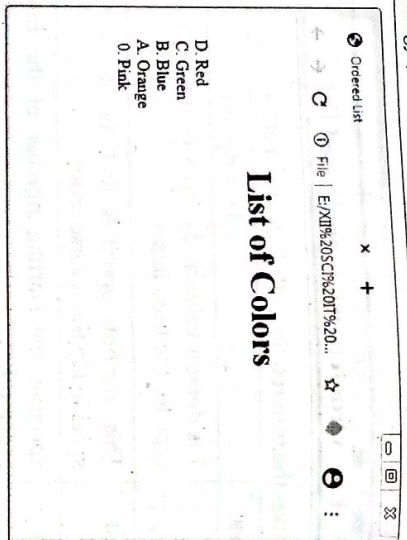
Attribute	Values	Description
Type	"1" /"a"/"1"/"1"	It is default value and other values specify the numbering type for the used items.
Reversed	Reversed	This attribute specifies that the items of the list are specified in the reverse order.
Start	Number	Specifies the starting number of the first item in an ordered list.

Example

Coding :

```
<!DOCTYPE html>
<html>
<head>
<title>
Ordered List
</title>
</head>
<body>
<ol align="center" type="A" reversed>
<li>Red</li>
<li>Green</li>
<li>Blue</li>
<li>Orange</li>
<li>Pink</li>
</ol>
</body>
</html>
```



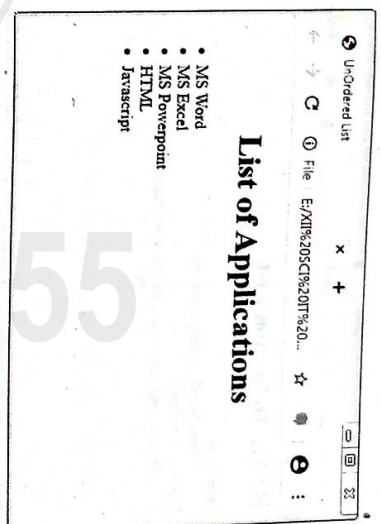
Output :

1.6 Unordered list or bulleted list

Unordered list is created by tag.

Example**Coding :**

```
<!DOCTYPE html>
<html>
<head>
<title>
UnOrdered List
</title>
</head>
<body>
<h1 align="center">List of Applications</h1>
<ul>
<li>MS Word</li>
<li>MS Excel</li>
<li>MS Powerpoint</li>
<li>HTML</li>
<li>JavaScript</li>
</ul>
</body>
</html>
```

Output :

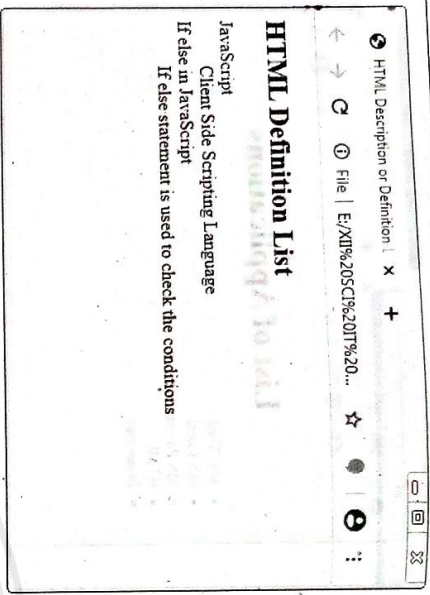
1.7 Definition list

The definition list is created using <dl> element. The <dl> element is used in conjunction with the <dt> element which specify a term, and the <dd> element which specify the term's definition.

Example**Coding :**

```
<!DOCTYPE html>
<html>
<head>
<title>HTML Description or Definition List</title>
</head>
<body>
<h2>HTML Definition List</h2>
<dl>
<dt>JavaScript</dt>
<dd>Client Side Scripting Language</dd>
<dt>If else in JavaScript</dt>
<dd>If else statement is used to check the conditions</dd>
</dl>
</body>
</html>
```

Output :



Nested List

List within another list either ordered or unordered list is called nested list.

Example

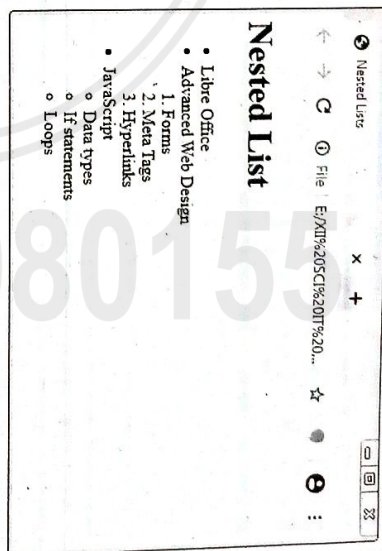
Coding :

```
<!DOCTYPE html>
<html>
<head>
<title>Nested Lists</title>
</head>
<body>
<h1>Nested List</h1>
<ul>
<li>Libre Office</li>
<li>Advanced Web Design</li>
<ol>
<li>Forms</li>
<li>Meta Tags</li>
<li>Hyperlinks</li>
</ol>
<li>JavaScript</li>
<ul style="list-style-type:circle">
<li>Data types</li>

```

Output :

```
</li>If statements</li>
</li>Loops</li>
</ul>
</ul>
</body>
</html>
```



1.8 Inserting audio and video in HTML5

<audio> tag

The newly introduced HTML5 <audio> element provides a standard way to embed audio in web pages.

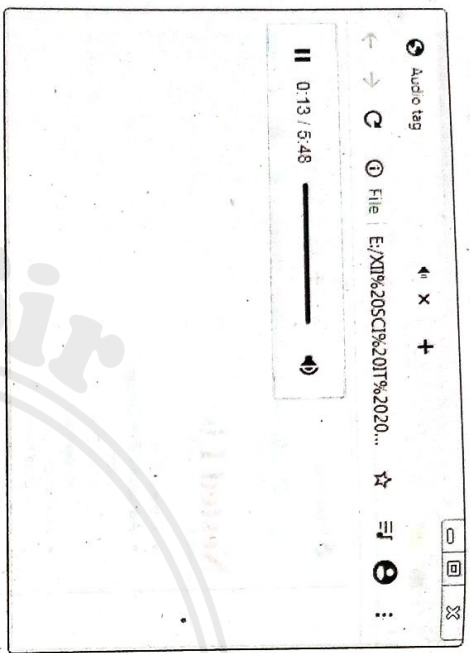
Example

Coding :

```
<!DOCTYPE html>
<html>
<head>
<title>Audio tag</title>
</head>
<body>
<audio controls muted autoplay loop="5">
<source src="C:\Users\Public\Music\Sample Music
\Kalinba.mp3" type="audio/mpeg">
```

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

Output :



<video> tag

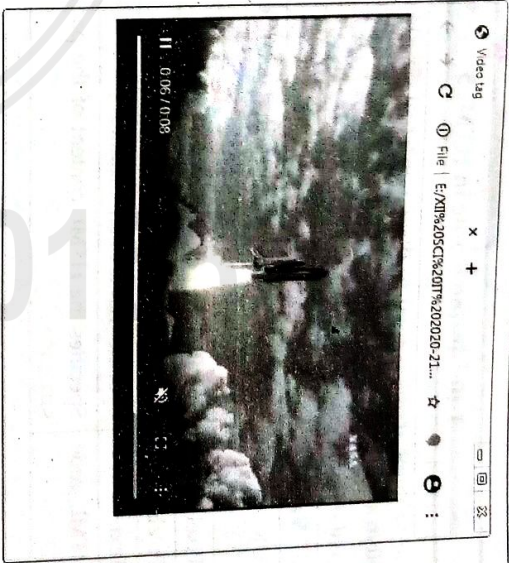
The newly introduced HTML5 <video> element provides a standard way to embed video in web pages.

Example

Coding :

```
<!DOCTYPE html>
<html>
<head>
<title>Video tag</title>
</head>
<body>
<video src="C:\Users\Public\Videos\Sample Videos\shuttle.mp4" controls
width="500" height="300" loop="4" muted poster="C:\Users\Public\Pictures\Sample
Pictures\Penguins.jpg" autoplay> </video>
</body>
</html>
```

Output :



1.9 Image map in HTML5

An image map allows you to define hotspots on an image that acts just like a hyperlink. Image maps are of two type Client side Image Maps and server Side Image Maps.

Tags used to define Client Side Image Maps are :

- 1. → It is used to insert image on the web page.
- 2. <map> → It specifies name of the image used for client side image map.
- 3. <area> → It defines the clickable region.

Attributes of <area> tag are :

Attribute	Description
Href	Defines the URL to which the clickable region within the image-map navigates.
Shape	It can value rect, circle or poly.
coords	Specifies co-ordinates of the clickable regions on the image-map.
Alt	Specifies extra information about clickable area. It is the alternative text to the clickable region.

1.10 Inline Frame in HTML5

- An iframe or inline frame is used to display external objects including other web pages within a web page. <iframe> tag is used to create inline frames.
- Attributes of <iframe> tag are :

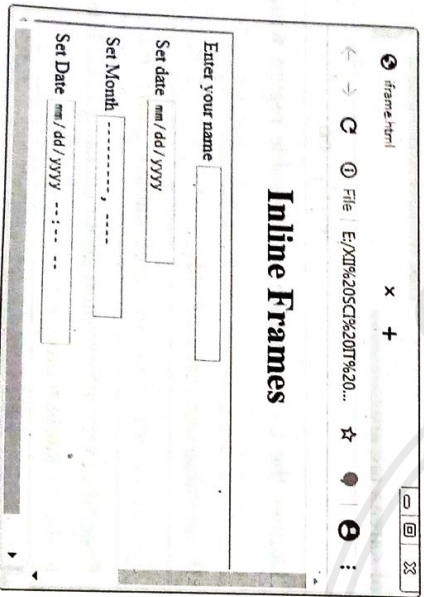
Attribute	Values	Description
Src	URL	Specifies the address of the document to embed in the <iframe>
Height	Pixel	Specifies the height of an <iframe>
Width	Pixels	Specifies the width of an <iframe>
Name	Text	Specifies name of an <iframe>
srcdoc	HTML_code	Specifies the HTML content of the page to show in the <iframe>

Example

Coding :

```
<!DOCTYPE html>
<html>
<body>
<h1 align="center">Inline Frames</h1>
<iframe src="E:\XII SCI IT 2020-21\html codes \form.html" width="500"
height="250"></iframe>
</body>
</html>
```

Output :



Extra Examples of CSS

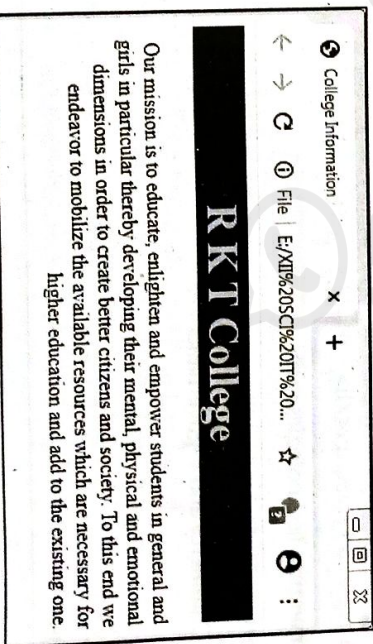
1. Write a program using html with following CSS specifications :-
 - (a) The background color of the College name should be in red color.
 - (b) The text color of the College name should be yellow color.
 - (c) The description of the college should be paragraph with right align.

Ans. :

Coding :

```
<html>
<head>
<title>
College Information
</title>
<style>
h1{background-color:red;color:yellow}
p{text-align:right}
</style>
</head>
<body>
<h1 align="center">R K T College</h1>
<p>
Our mission is to educate, enlighten and empower students in general and girls in particular thereby developing their mental, physical and emotional dimensions in order to create better citizens and society. To this end we endeavor to mobilize the available resources which are necessary for higher education and add to the existing one. </p>
</body>
</html>
```

Output :



2. Write a program using html with following CSS specifications :

- The page should contain heading as XII IT in blue color
- Create Unordered List of topics in IT
- Change the font to comic Sans

Ans. :

Coding :

```
<html>
<head>
<title>
XII Science IT
</title>
</head>
<style>
h1{color:blue}
</style>
<body>
<h1 align="center">XII Th Science IT</h1>
<ul>
<li>Advanced Web Designing</li>
<li>Introduction to SEO</li>
<li>Advanced JavaScript</li>
<li>Emerging Technologies</li>
<li>Server-side Scripting</li>
<li>E-Commerce and E-governance</li>
</ul>
</body>
</html>
```

Output :



3. Write a program using html with following CSS specifications :

- To create a form that should accept name, age, date of appointment from the user
- Create submit button to send the data.
- The heading of the form should have orange background color with different font style

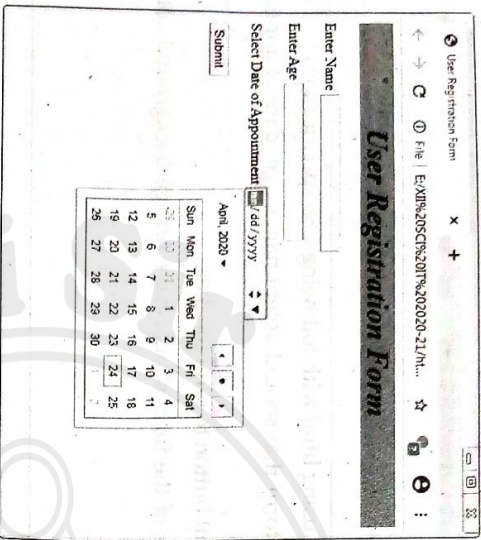
Ans. :

Coding :

```
<html>
<head>
<title>
User Registration Form
</title>
<style>
h1{background-color:orange;font-style:oblique}
</style>
</head>
<body>
<h1 align="center">User Registration Form</h1>
<form>
Enter Name
<input type="text" name="f1"><br><br>
Enter Age
```

```
<input type="number" name="age"><br><br>
Select Date of Appointment
<input type="date" name="doa"><br><br>
<input type="submit" name="b1" value="Submit">
</form>
</body>
</html>
```

Output :



4. Write a program using html with following CSS specifications:-
- To create a form that should accept name, number of present students (compulsory), time and file to upload from the user
 - Create submit button to send the data.
 - The heading of the form should have border with blank spaces around the contents

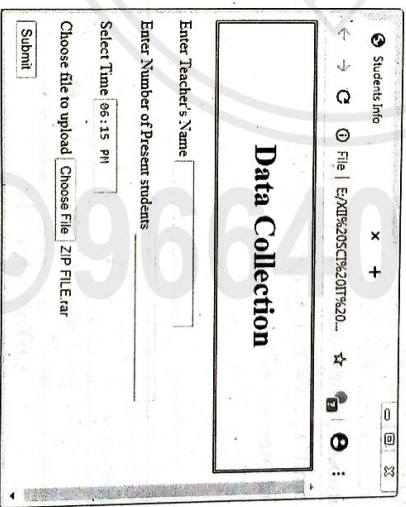
Ans.:

Coding :

```
<html>
<head>
<title>
Students Info
</title>
</style>
```

```
h1{border-style:double;padding:30px}
</style>
</head>
<body>
<h1 align="center">Data Collection</h1>
<form>
Enter Teacher's Name
<input type="text" name="t1"><br><br>
Enter Number of Present students
<input type="number" name="stud" required><br><br>
Select Time
<input type="time"><br><br>
Choose file to upload
<input type="file"><br><br>
<input type="submit" value="Submit" name="b1">
</form>
</body>
</html>
```

Output :



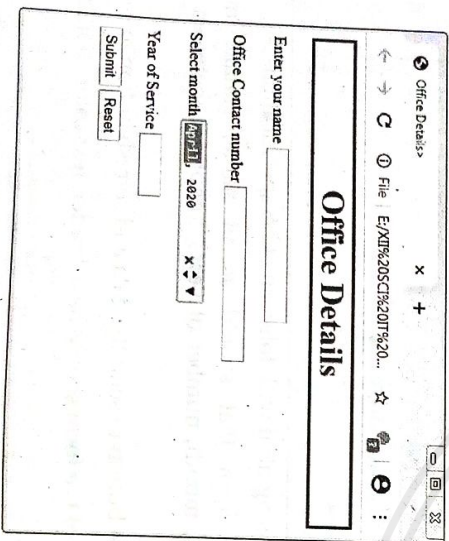
5. Write a program using html with following CSS specifications :-
- To create a form that should accept name, contact number of office (compulsory), month, number of years completed (between 1 – 30) from the user.
 - Create submit button to send the data and refresh button to reload the page.
 - The heading of the form should have border, text color should be red.

Ans : Coding :

```

<html>
<head>
<title>
Office Details</title>
</title>
<style>
h1{border-style:solid;color:red}
</style>
</head>
<body>
<form>
<h1 align="center">Office Details</h1>
Enter your name
<input type="text" name="nm"><br><br>
Office Contact number
<input type="tel" pattern="[0-9]{3}-[0-9]{4}-[0-9]{4}" required><br><br>
Select month
<input type="month"><br><br>
Year of Service
<input type="number" name="yos" min="1" max="30"><br><br>
<input type="submit" name="btn" value="Submit">
<input type="reset" name="rs">
</form>
</body>
</html>
    
```

Output :



- Write a program using html to create inline frame. It should contain image.

Ans :

Coding :

```

<html>
<body>
<iframe src="C:\Users\Public\Pictures\Sample Pictures\Penguins.jpg"
width="400" height="250"
name="img">
</body>
</html>
    
```

Output :



Exercise

Fill in the Blanks

- The.....element is a starting element in an HTML, it indicates that document type definition being used by the document.
Ans : <!DOCTYPE html>
- The..... is a tag in html that describe some aspects of contents of a webpage.
Ans : <meta>
- The tag defines an.....
Ans : Ordered List

4. An unordered list created using the tag.
 Ans.:

5. The element creates an inline frame.
 Ans.: <iframe>

6. tag is used to specify video on an HTML document.
 Ans.: <video>

7. If a web developer wants to add the description to an image he must use attribute of tag.
 Ans.: alt

8. The..... property is used to set position for an element.
 Ans.: Position

9. The float property defines the... of content.
 Ans.: Flow

10. is used with elements that overlap with each other.
 Ans.: Positioning

State whether the following statement is True or False

1. HTML is an Object Oriented Programming Language.
 Ans.: False

2. Charset is used for character encoding declaration.
 Ans.: True

3. An unordered list can be numerical or alphabetical.
 Ans.: False

4. Multilevel list can be created in HTML 5.
 Ans.: True

5. Srccode specifies the HTML content of the page to show in the <iframe>
 Ans.: True

6. The 'controls' attribute is not used to add play, pause, and volume.
 Ans.: False

7. .cs is the extension of CSS file.
 Ans.: False

Choose Single correct answer from the given options.

1.element used to create a linking image

- (a)
- (b) <td>
- (c) <map>
- (d) <usemap>

Ans.: (a)

2. Thetag is used to embed audio files on Webpages.
 (a) <sound> (b) <audio>
 (c) <video> (d) <embedded>

Ans.: (b)

3. A programmer wants to define range for age between 18 to 50, he will use a form with following appropriate control.
 (a) number (b) compare
 (c) range (d) Textboxes

Ans.: (c)

4. character is used to create id in CSS.
 (a) % (b) \$ (c) @ (d) #

Ans.: (d)

Choose Two correct answers from the given options.

1. List within another list either.....list or.....list is called nested list
 (a) multilevel (b) order (c) unordered (d) general (e) cascading

Ans.: (b,c)

2. Image maps are of two typesand
 (a) Network side (b) Client Side
 (c) Computer side (d) Server Side
 (e) n-computing

Ans.: (b,d)

3. A CSS rule set contains..... and.....
 (a) Set (b) selector (c) post (d) declaration (e) block

Ans.: (b,d)

4. Client-side image map can be created using two elements and.....
 (a) <area> (b) <image>
 (c) <usemap> (d) <map> (e) <server>

Ans.: (a,d)

Choose Three correct answers from the given options.

1. Attributes of <area> tag is.....

- (a) href
- (b) src
- (c) cords
- (d) data
- (e) alt
- (f) usemap

Ans.: (a,c,e)

2. Attributes used with iframe are.....

- (a) srcdoc
- (b) name
- (c) alt
- (d) src
- (e) href
- (f) loop

Ans.: (a,b,d)

3. Following are the Form controls.....

- (a) email
- (b) search
- (c) label
- (d) video
- (e) tel
- (f) audio

Ans.: (a,b,e)

4. Attributes used with <audio> tag.....

- (a) autoplay
- (b) href
- (c) controls
- (d) ctrl
- (e) loop
- (f) bgound

Ans.: (a,c,e)

5. CSS types are and

- (a) internal
- (b) external
- (c) control
- (d) inline
- (e) loop
- (f) style

Ans.: (a,b,d)

6. Positioning types in CSS are.....

- (a) Static
- (b) fixed
- (c) absolute
- (d) position
- (e) dynamic
- (f) nested

Ans.: (a,b,c)

7. Types of floating properties are.....

- (a) left
- (b) zero
- (c) right
- (d) all
- (e) none
- (f) dock

Ans.: (a,c,e)

Match the pair

A	B
1) 	a) Client side image map
2) usernap	b) CSS property
3) color	c) bulleted list
4) 	d) Image as a submit button
5) <input type=’image’>	e) inserts an image

Ans.: 1-c , 2-a , 3-b , 4-e , 5-d

Programs

1. Write a program using html with following CSS specification-

- (1) The background colour of the company name should be in green.
- (2) The text colour of the company name should be red.
- (3) The heading should be large with font "comic sans ms"
- (4) The description of the company should be displayed in blue color in a paragraph.

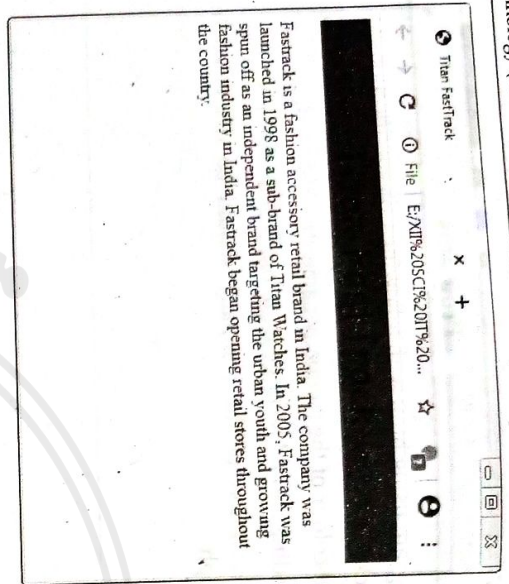
Ans.:

Coding:

```

<html>
<head>
<title>
Titan FastTrack
</title>
<style>
h1|background-color:green,color:red;font-
family:Comic Sans MS|
p|color:blue|
</style>
</head>
<body>
<h1 align="center">Titan FastTrack</h1>
<p>
Fastrack is a fashion accessory retail brand in India. The company was launched in
1998 as a sub-brand of Titan Watches. In 2005, Fastrack was spun off as an
independent brand targeting the urban youth and growing fashion industry in
India. Fastrack began opening retail stores throughout the country.
</p>
</body>
</html>
    
```

Output :



2. Write HTML5 code with CSS AS follows :
1. To create form to accept name, age, email address, from the user.
 2. Create a submit button to send the data.
 3. The heading of the form should have a background colour and a different style.

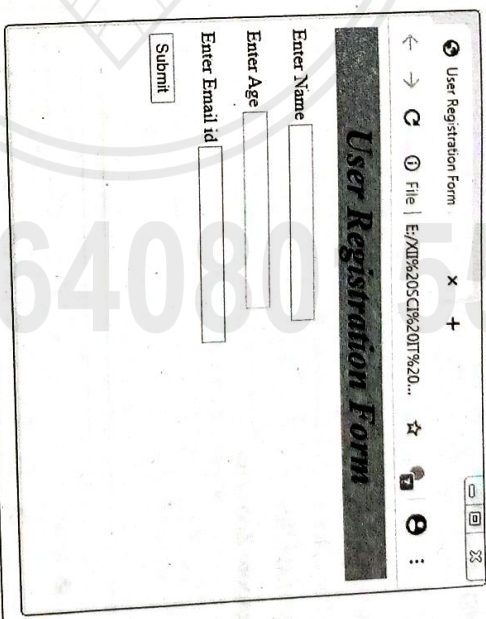
Ans. :

Coding :

```
<html>
<head>
<title>
User Registration Form
</title>
<style>
h1{background-color:orange;font-style:italic}
</style>
</head>
<body>
<h1 align="center">User Registration Form</h1>
<form>
Enter Name
<input type="text" name="t1"><br><br>
```

Output :

```
Enter Age
<input type="number" name="age"><br><br>
Enter Email id
<input type="email" name="email"><br><br>
<input type="submit" name="b1" value="Submit">
</form>
</body>
</html>
```



3. Write HTML5 code with CSS as follows :
1. Create ordered list with names of tourist Cities.
 2. Create unordered list with tourist PLACES of those cities.
 3. Divide the list into two sections left and right by using CSS.

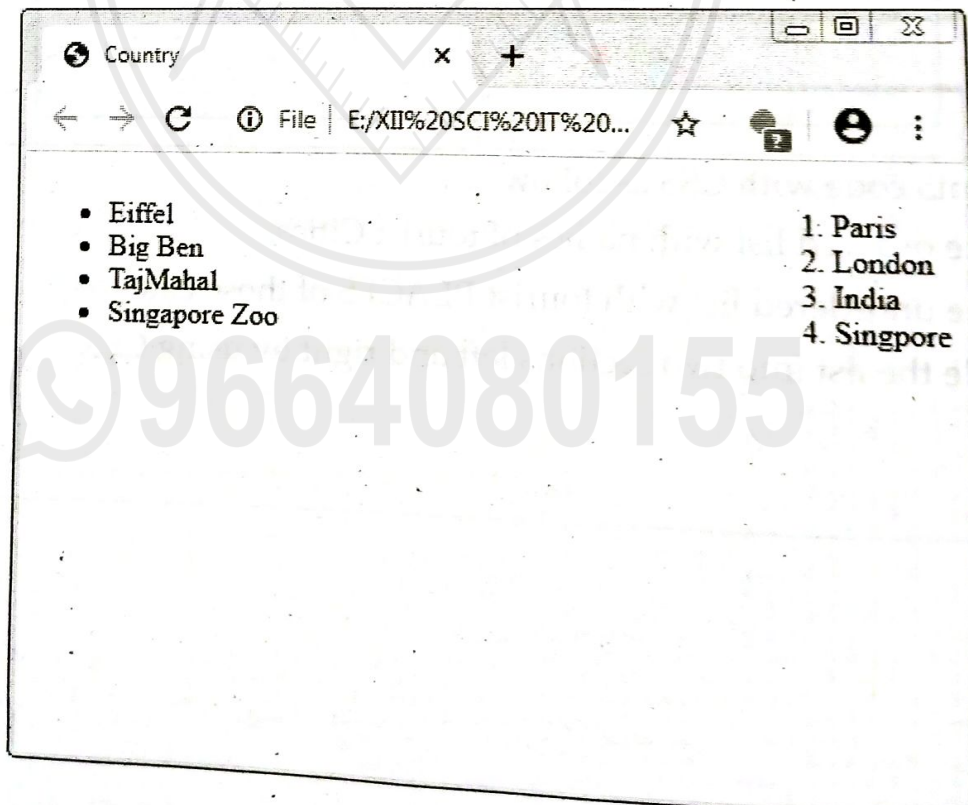
Ans. :

Coding :

```
<html>
<head>
<title>
Country
</title>
<style>
ul{float:left}
```

```
ol{float:right}
</style>
</head>
<body>
<ol>
<li>Paris</li>
<li>London</li>
<li>India</li>
<li>Singapore</li>
</ol>
<ul>
<li>Eiffel</li>
<li>Big Ben</li>
<li>TajMahal</li>
<li>Singapore Zoo</li>
</ul>
</body>
</html>
```

Output :



2

Introduction to SEO (Search Engine Optimization)

Chapter at a Glance

2.1 Introduction

SEO is a technique used for designing and developing a website to be rank high in search engine.

2.2 Types of SEO

On-Page SEO

Concern with information to be displayed to the end user

Off-Page SEO

Concern with Website-Website Relationship

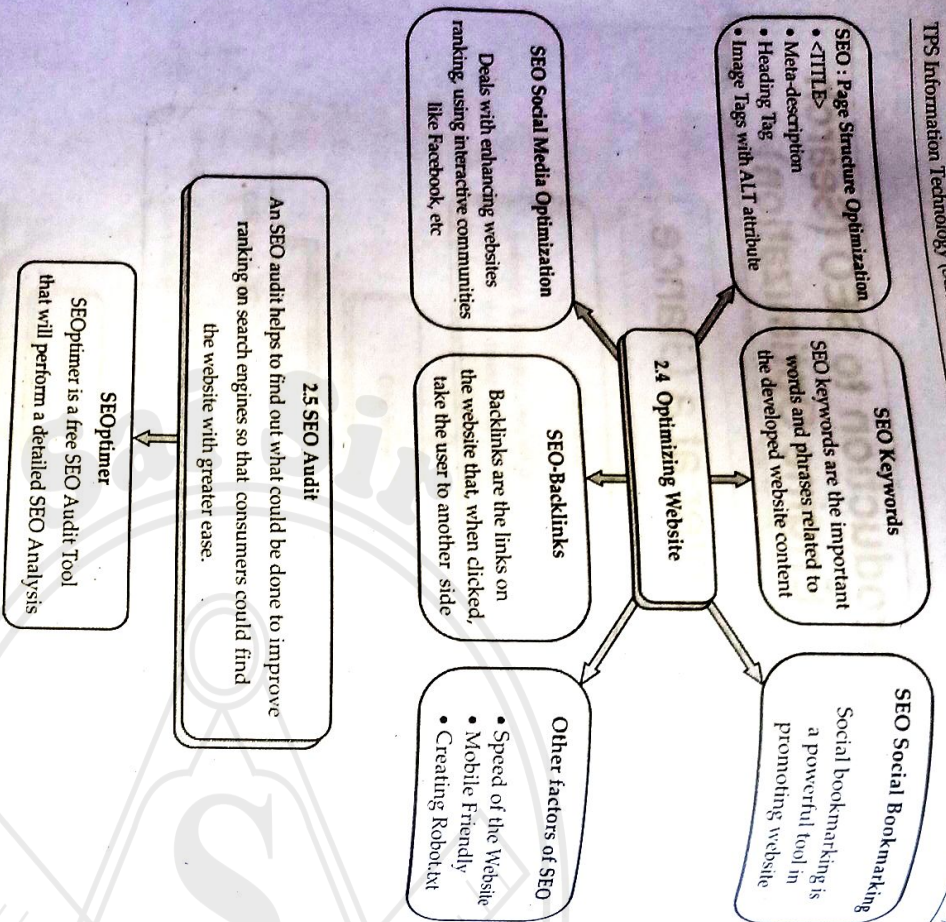
2.3 Techniques of SEO

White Hat SEO

Technique that search engines recommend as a part of Good design

Black Hat SEO

Techniques uses for optimizing the website are manipulative



Fill in the Blanks

2.1 Introduction

1. SEO stands for _____.
2. Search Engine Optimization is a subset of _____.
3. Search Engine Marketing is a subset of Search Engine Marketing.
4. _____ is a subset of Search Engine Marketing.
5. SEO is useful in _____ number of visitors to a website.
6. _____ is useful in increasing number of visitors to a website.
7. _____ is a technique used for designing and developing a website to rank high in search engine result.
8. Search Engine Optimization is a technique used for designing and developing a website to rank _____ in search engine result.
9. _____ is an online program or a software that helps users to search for information on world wide web.

Ans.: Search Engine

2.2 Types of SEO

10. _____ SEO include Provision of good content good keyword.
11. _____ SEO include link building, increasing link popularity by submitting open directories.
12. _____ SEO is concerned with information that is displayed to the end user.
13. On-Page SEO is concerned with information that is displayed to the _____.
14. _____ SEO is concerned with website-website relationship.

Ans.: Off-Page

15. Off-Page SEO is concerned with _____ relationship.
 Ans.: website-website
16. _____ is concerned with how good is your network ?
 Ans.: Off-Page SEO

2.3 Techniques of SEO

17. _____ SEO techniques that search engines do not approved.

Ans.: Black Hat

18. _____ SEO Techniques that search engines recommends as apart of good design.

Ans.: White Hat

19. White hat strategies include _____ content.

Ans.: relevant

20. Black hat strategies include _____ content.

Ans.: duplicate

21. _____ hat strategies include relevant content.

Ans.: White

22. _____ hat strategies include duplicate content.

Ans.: Black

23. _____ strategies include complete sentences with good spelling and grammar.

Ans.: White hat

24. Well-labeled images are the part of _____ strategies.

Ans.: White hat

25. Invisible text and stuffed keywords are part of _____ strategies.

Ans.: Black hat

2.4 Optimizing Website

26. Html programs should start with _____.

Ans.: <doctype html>

27. Html program should _____ with <doctype html>.

Ans.: start

28. Singular tag should be _____.

Ans.: Self enclosed

29. One of the optimizing factor to improve images is by using _____ attribute.

Ans.: alt

30. tag with _____ attribute also contribute to optimization.
 Ans.: alt

31. _____ tag with alt attribute also contribute to optimization.
 Ans.:

32. _____ is the first thing that user notices in search result list while using Google for search.
 Ans.: Title

33. Title contents should be up to _____ characters.
 Ans.: 60

34. Meta description should be used to boost your _____ SEO.
 Ans.: On-Page

35. Meta Description should be between 70 and _____ characters.
 Ans.: 160

36. Meta Description should be between _____ and 160 characters.
 Ans.: 70

37. _____ Description should be between 70 and 160 characters.
 Ans.: Meta

38. _____ are the important words and phrases related to the developed website content.
 Ans.: SEO Keywords

39. Keyword Research and _____ is an important part of the Search Engine Optimization.
 Ans.: Analysis

40. SEM stands for _____.

Ans.: Search Engine Marketing

41. Keyword _____ and Analysis is an important part of the Search Engine Optimization.
 Ans.: Research

42. _____ Research and Analysis is an important part of the Search Engine Optimization.
 Ans.: Keyword

43. _____ is a powerful tool in promoting a website.
 Ans.: Social bookmarking

44. Social bookmarking is a powerful tool used for _____ website.
 Ans.: Promoting

45. SEO social bookmarking is very useful for _____ SEO optimization.
 Ans.: Off-Page

46. _____ are website links that are stored for future references.
 Ans.: Bookmarks

47. _____ Service allows you to save , organize and share bookmarks with other users.

Ans. : **Bookmarking** are the important SEO factors to rank a website higher in the search engine.

48. _____ you can quickly create high-quality backlinks.

Ans. : **External links**

49. Using _____ you can quickly create high-quality backlinks.

Ans. : **Social bookmarking**

50. SMO Stands for _____

Ans. : **Social Media Optimization**

51. _____ deals with enhancing the website's ranking , using interactive communities.

Ans. : **Social Media Optimization**

52. _____ are the links on the website that, when clicked, take the user to another side.

Ans. : **Backlinks**

53. Website's _____ has become a ranking factor for Google.

Ans. : **mobile friendliness**

54. _____ file tells search engine which page you want to exclude from indexing.

Ans. : **Robots.txt**

2.5 SEO Audit

55. An _____ helps to find out what you can be done to improve ranking on search engines, so that consumers can find the website with greater ease.

Ans. : **SEO Audit**

56. _____ is used to analyze the websites health.

Ans. : **SEO Audit**

57. SEO Audit is used to analyse websites _____

Ans. : **health**

58. _____ is a free SEO Audit Tool that will perform a detailed SEO Analysis.

Ans. : **SEOptimer**

59. SEOptimer is a free _____ that will perform a detailed SEO Analysis.

Ans. : **SEO Audit Tool**

60. SEOptimer is a free SEO Audit Tool that will perform a detailed _____

Ans. : **SEO Analysis**

True or False

2.1 Introduction

1. SEO stands for Search Engine Optimization.

Ans. : **True**

2. SEO stands for Search Engine Optimizing.

Ans. : **False**

3. SEO is a technique used for: designing and developing a website be to rank high in search engine results.

Ans. : **True**

4. SEO is a technique used for: designing and developing a website be to rank low in search engine results.

Ans. : **False**

5. SEO is a subset of search engine marketing.

Ans. : **True**

6. SEM is a subset of search engine optimization.

Ans. : **False**

7. SEO is useful in decreasing the number of visitors to a website.

Ans. : **False**

8. SEO is useful in increasing the number of visitors to a website.

Ans. : **True**

2.2 Types of SEO

9. Off-Page SEO include provision of good content, good keyword.

Ans. : **False**

10. On-Page SEO include provision of good content, good keyword.

Ans. : **True**

11. On-Page SEO include link building, increasing link popularity.

Ans. : **False**

12. Off-Page SEO include link building, increasing link popularity.

Ans. : **True**

2.3 Techniques of SEO

13. White Hat strategies include duplicate content.

Ans. : **False**

14. White Hat strategies include relevant content.
Ans.: True
15. Invisible text and stuffed keyword are part of Black Hat Strategies.
Ans.: True
16. Well-labeled images are part of White Hat Strategies.
Ans.: True
17. White Hat SEO techniques that search engine recommends as apart of good design.
Ans.: True

2.4 Optimizing Websites

18. Singular tag like is should be self enclosed like this-.
Ans.: False
19. Singular tag like is should be self enclosed like this-.
Ans.: True
20. Most of the times recently opened tag will be closed first.
Ans.: True
21. Meta-description is the first thing that user notices in search result list while using Google for search.
Ans.: False
22. Title content should be up to 60 characters.
Ans.: True
23. Meta description should be used to boost your Of-Page SEO.
Ans.: False
24. Meta Description should be between 70 and 160 characters.
Ans.: True
25. The src attribute gives information about image.
Ans.: False
26. tag with alt attribute also contributes to optimization.
Ans.: True
27. Keyword Research and Analysis is an important part of SEO.
Ans.: True
28. SEO Social Bookmarking is very useful for Off-Page SEO Optimization.
Ans.: True
29. Bookmarks are website links that are stored for future references.
Ans.: True
30. Backlinks are links on one website that, when clicked, take the user to another site.
Ans.: True

31. Social media links and backlinks are not used for optimizing the webpage.
Ans.: False
32. Website's mobile friendliness is not important factor in ranking.
Ans.: False
33. Mobile friendliness is only used for ranking the websites.
Ans.: False
34. Robots.txt file tells search engine which pages you want to include from indexing.
Ans.: False
35. Social Media Optimization deals with enhancing the website's ranking, using interactive communities.
Ans.: True

2.5 SEO Audit

36. SEO Audit does not help to analyze the websites health.
Ans.: False
37. An SEO Audit helps to find out what could be done to improve ranking on search engines, so that consumers could find the website with greater ease.
Ans.: True
38. SEOptimer is paid SEO Audit Tool.
Ans.: False

MCQ (One Correct Answers)

2.1 Introduction

1. SEO Stands for _____.
- (a) Search Engine Optimization (b) Search Engine Option
(c) Search Engine Optimizing (d) Search Engine Organizing
2. SEO is a subset of _____.
- (a) Search Engine Optimization (b) Search Engine Marketing
(c) Social Media Optimization (d) Search Engine
3. SEO is useful in _____ the number of visitors to a website.
- (a) decreasing (b) increasing
(c) removing (d) analyzing
- Ans.: (b) increasing

4. _____ is an online program or software that helps users to search for information on World Wide Web.

- (a) Search Engine
- (b) Website
- (c) Application
- (d) API

Ans.: (a) Search Engine

2.2 Types of SEO

5. _____ is concern with Website-Website relationship.

- (a) On-Page SEO
- (b) Off-Page SEO
- (c) White Hat SEO
- (d) Black Hat SEO

Ans.: (b) Off-Page SEO

6. _____ is concern with information that is displayed to the end user.

- (a) On-Page SEO
- (b) Off-Page SEO
- (c) White Hat SEO
- (d) Black Hat SEO

Ans.: (b) On-Page SEO

2.3 Techniques of SEO

7. _____ include relevant content.

- (a) On-Page SEO
- (b) Off-Page SEO
- (c) White Hat SEO
- (d) Black Hat SEO

Ans.: (c) White Hat SEO

8. _____ include duplicate content.

- (a) On-Page SEO
- (b) Off-Page SEO
- (c) White Hat SEO
- (d) Black Hat SEO

Ans.: (d) Black Hat SEO

9. _____ is concern with White Hat SEO.

- (a) Well-labeled images
- (b) Duplicate content
- (c) Invisible text
- (d) Stuffed Keyword

Ans.: (a) Well-labeled images

2.4 Optimizing Websites

10. If it is singular tag for eg it should be self enclosed like _____.

- (a)
- (b)
- (c)
- (d)

Ans.: (c)

11. Title contents should be up to _____.

- (a) 50
- (b) 60
- (c) 70
- (d) 80

Ans.: (b) 60

12. Meta Description should be between _____.

- (a) 70 and 100
- (b) 100 and 200
- (c) 70 and 160
- (d) 50 and 100

Ans.: (c) 70 and 160

13. Image tag with _____ attribute gives information about the image

- (a) alt
- (b) src
- (c) height
- (d) width

Ans.: (a) alt

2.5 SEO Audit

14. SEO Audit analyze websites _____.

- (a) users
- (b) health
- (c) visitors
- (d) rank

Ans.: (b) health

MCO (Two Correct Answers)

2.1 Introduction

1. The SEO is a technique used for _____ and _____ a website to be rank high in a search engine.

- (a) Designing
- (b) Developing
- (c) Monitoring
- (d) Analyzing
- (e) Creating

Ans.: (a), (b)

2.2 Types of SEO

2. Types of SEO

- (a) On-Page SEO
- (b) White Hat SEO
- (c) Off-Page SEO
- (d) Black Hat SEO
- (e) Default

Ans.: (a), (c)

2.3 Techniques of SEO

3. Techniques of SEO

- (a) On-Page SEO
- (b) White Hat SEO
- (c) Off-Page SEO
- (d) Black Hat SEO
- (e) Default

Ans.: (b), (d)

2.4 Optimizing Websites

The page content optimization can be done by using keywords in _____ and _____

- 4. The page content optimization can be done by using keywords in _____ and _____
- (a) (b) <title>
- (c) <hr> (d) <meta> (e) <input>

- 5. Other factor to rank the website higher are _____ and _____.
- (a) Desktop friendly (b) Speed of the website
- (c) Creating robots.txt (d) No backlinks

- 6. Social Media Optimization deals with enhancing the website's ranking using _____ and _____.
- (a) Blogs (b) E Commerce website's
- (c) Facebook (d) Banking (e) Wikipedia

Ans.: (b), (c)

2.5 SEO Audit

- 7. SEO Audit Tool are _____ and _____.
- (a) SEOptimer (b) SEOptimizer
- (c) Seomator (d) SEO Auditor (e) Seomatizer

MCO (Three Correct Answers)

2.2 Types of SEO

- 1. On-Page SEO includes provision of _____.
 - (a) good content (b) good keywords selection
 - (c) putting keywords of correct places (d) link building
2. Off-Page SEO includes _____.
- (a) link building (b) link exchange
 - (c) search engines (d) good content

Ans.: (a), (b), (c)

2.3 Techniques of SEO

- 3. Black Hat Strategies include _____.
- (a) duplicate content (b) relevant content
- (c) invisible text (d) stuffed keywords

- 4. White Hat Strategies include _____.
- (a) duplicate content (b) relevant content
- (c) well-labeled images (d) relevant links

Ans.: (a), (c), (d)

2.4 Optimizing Website

- 5. Important parts of Search Engine Optimization _____.
- (a) Keywords (b) Research
- (c) Analysis (d) Information

- 6. Other factors to rank the website higher are _____.
- (a) Desktop friendly (b) Speed of website
- (c) Mobile friendly (d) creating robots.txt

Ans.: (b), (c), (d)

Match the Following

	A	B
1.	Image optimization	(a) Duplicate content
2.	Links to Twitter, Facebook	(b) file that tell which pages you want to exclude from indexing
3.	Description about author	(c) links when clicked , take the user to another site
4.	White hat Strategy	(d) meta tag
5.	Black hat Strategy	(e) alt attribute
6.	Robots.txt	(f) Social Media Optimization
7.	SEOptimer	(g) Relevant content
8.	Backlinks	(h) determine the health of the website
9.	SEO Audit	(i) SEO Audit Tool

- Ans.:
- 1. = (e) 2. = (f) 3. = (d) 4. = (g) 5. = (a)
 - 6. = (b) 7. = (i) 8. = (c) 9. = (h)

Answer Briefly

2.1 Introduction

1. Define SEO.

Ans.:

- (i) SEO stands for Search Engine Optimization. SEO is a technique used for designing and developing a website results. It is a subset of search engine marketing.
- (ii) SEO is useful in increasing the number of visitors to a website.
- (iii) There are two types of optimization :-
- (iv) **On-Page SEO** : This includes Provision of good content, good keywords selection, putting keywords on correct places, giving appropriate title to every Page etc.
- (v) **Off-Page SEO** : It includes link building, increasing link popularity by submitting open directories, search engines, link exchange etc.

2.2 Types of SEO

2. Define SEO. State types of SEO.

Ans.:

- (i) SEO stands for Search Engine Optimization, which is the practice of increasing the quantity and quality of traffic to your website through organic search engine results.
- (ii) Thus SEO is useful in increasing the number of visitors to a website.
- (iii) There are many strategies and techniques adopted to optimize the webpage.
- (iv) **Types of SEO**- There are two types of optimization:-
- (v) **On-Page SEO** : This includes Provision of good content, good keywords selection, putting keywords on correct places, giving appropriate title to every page etc.
- (vi) **On-Page SEO** is concerned with information that is displayed to the end user, such as text, images and website navigation.
- (vii) **Off-Page SEO** : It includes link building, increasing link popularity by submitting open directories, search engines, link exchange etc.
- (viii) **Off-Page SEO** is concerned with Website-Website relationship.

2.3 Techniques of SEO

3. Which are the different SEO techniques.

Ans.:

- (i) SEO techniques are classified into two broad categories, which are White Hat SEO and Black Hat SEO.

White Hat SEO : Techniques that search engines suggest as a part of good design are called White Hat SEO.

(i) It contains proper and well labelled images according to the content.

(ii) It is in the form of Standard-compliant HTML.

(iii) **Black Hat SEO** : Techniques that search engines do not approve and those techniques which are used for optimizing the website are called Black Hat SEO.

(iv) It mainly contains duplicate contents. Such websites are mainly used to redirect users to other websites and cause traffic.

(v) Explain in short White Hat technique.

4.

Ans.:

- (i) Techniques that search engines suggest as a part of good design are called White Hat SEO.
- (ii) It contains proper and well labelled images according to the content.
- (iii) It is in the form of Standard-compliant HTML.
- (iv) The page titles are unique but relevant at the same time.
- (v) It has Complete sentences with good spelling and grammar

5. Explain in short Black Hat technique.

Ans.:

- (i) Techniques that search engines do not approve and those techniques which are used for optimizing the website are called Black Hat SEO.
- (ii) It mainly contains duplicate contents which mostly are stolen from other original creators mainly without any credits and permissions.
- (iii) Such websites are mainly used to redirect users to other websites and cause traffic.
- (iv) Links from such sites are irrelevant and don't show the actual search content. Websites like these contain invisible text and stuffed keywords

2.4 Optimizing Website

6. Explain any two Page content optimization points?

Ans.:

- (i) **TITLE** : Title is the first thing that user notices in search result list while using Google for searching. Contents should be up to 60 characters (spaces included)
- (ii) **Meta-description Tag** : While creating a web page, Meta description should be used to boost your On-Page SEO. Meta Description should be between 70 and 160 characters (spaces included) that others are interested to know about the contents form your website.

7. Explain Page Structure Optimization?

Ans.: Html programs should start with <doctype html>.

- (i) If it is singular tag eg it should be self enclosed like this-
- (ii) Order of tags should be proper.
- (iii) Most of the time recently opened tag will be closed first.
- (iv) Title is the first thing that user notices in search result list while using Google for searching
- (v) While creating a web page, Meta description should be used to boost your On-Page SEO.
- (vi) The pages should include proper heading tags from <h1> to <h6> wherever required.
- (viii) The alt attribute gives information about the image, so even if the image does not download, it can make the viewers understand the image related information.

(ix) Example :

```
<!doctype html>
<html>
<head><title> Page structure with
appropriate order of opening and
closing tags</title>
</head>
<body>
<h1>Let us understand SEO</h1>
<p>Webpage optimization helps for higher ranking in search engines.
<b>There are number of ways to optimize the pages
<i>Even the Social media plays an important role!!!</i>
</b>
</p>
</body>
</html>
```

8. Explain in short SEO Keyword search?

Ans.:

- (i) SEO keywords are the important words and phrases related to the developer website content.
- (ii) A list of keywords, need to be carefully chosen to optimize the search. Keyword Research and Analysis is an important part of the Search Engine Optimization (SEO) as well as "Search Engine Marketing".

- (iii) For "Search Engine Marketing", one can pay for certain keywords.
- (iv) There are various online Keyword Planner tools (such as Google Add Words Keyword Planner) to shortlist keywords.
- (v) This is more useful to compare the cost of various keywords, if the website designer opts for Paid Search Engine Marketing.

9. Explain SEO-Social Media Optimization and SEO-Backlinks ?

Ans.:

- (i) It deals with enhancing the website's ranking, using interactive communities like facebook, twitter, blogs, forums and so on.
- (ii) When these communities have links to the created website it builds familiarity and trust about the website.
- (iii) Backlinks are links on one website that, when clicked, take the user to another site.
- (iv) Backlinks are especially valuable for SEO because they contribute to the overall strength and value of the content.
- (v) They also represent a "vote of confidence" from one site to another
- (vi) Backlinks to your website are a signal to search engines that others are interested to know about the contents form your website.

10. Explain how could you optimize images.

Ans.:

- (i) **Image Tags with ALT attribute** : The alt attribute gives information about the image, so even if the image does not download, it can make the viewers understand the image related information.
- (ii) **Image Tag with Title attribute** : The title tag of images show the keyword of the image when mouse is hovered above the image.
- (iii) **Image compression** : The images which are compressed load faster which give user good friendly experience.
- (iv) **Images can have Caption keywords** : Certain images can have keywords on the image to make it relevant for user to know about it.

2.5 SEO Audit

11. Explain SEO Audit in detail?

Ans.:

- (i) An SEO Audit helps to find out what could be done to improve ranking on search engines, so that consumers could find the website with greater ease.
- (ii) It analyses the websites health. SEO audit helps to identify tags in the SEO process.
- (iii) Audit is a checklist created for SEO to be followed.
- (iv) Once the list is complete we may find our website moving up the rank.

- (v) Audit Results will have following details :
- Overall Ranking of the site
 - Recommendations for improvements
 - Search Engine Optimization
 - Usability of the website
 - Performance of website
 - Social links
 - Connected social accounts
 - Security parameters
 - SSL Enabled
 - HTTPS Redirect
 - Email Privacy
 - Header content recommendations
 - Title and Meta description
 - Body Content
 - Header Tags
 - Body content recommendations
 - Keyword Consistency
 - Amount of content in the pages
 - Links
 - Number of backlinks
 - Broken links
 - Friendly links
 - On page links
 - Technology list which is used in the website

Exercise

Fill in the Blanks

- The full form of SEO is _____.
1. **Search Engine Optimization**
 Ans.: _____ are the links on the website that, when clicked, take the user to another side.
 2. **Backlinks**
 Ans.: _____
 3. One of the optimizing factor to improve images is by using _____ attribute.
 Ans.: **alt**
 4. An _____ helps to find out what you can be done to improve ranking on search engines, so that consumers can find the website with greater ease.
 Ans.: **SEO Audit**
 5. _____ file tells search engine which page you want to exclude from indexing.
 Ans.: **Robots.txt**

Match the Following

(1)

'A'	'B'
1. Image Optimization	(a) meta tag
2. Links to Twitter, Facebook	(b) SEO technique
3. Description about author	(c) alt attribute
4. White Hat Strategy	(d) Social Media Optimization

Ans.: 1. - (c), 2. - (d), 3. - (a), 4. - (b)

Choose correct answers from the following (2 correct)

1. The page content optimization can be done by using keywords in
 (a) (b) <title>
 (c) <hr> (d) <meta> (e) <input>
 2. Other factor to rank the website higher are
 (a) Desktop friendly (b) Speed of the website
 (c) Creating robots.txt (d) No backlinks
 (e) No external links
- Ans.: (b), (c)

Answer Briefly

1. Define SEO. State types of SEO.

Ans. :

- (i) SEO stands for Search Engine Optimization, which is the practice of increasing the quantity and quality of traffic to your website through organic search engine results.
- (ii) Thus SEO is useful in increasing the number of visitors to a website.
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- (v) Black Hat SEO : Techniques that search engines do not approve and those techniques which are used for optimizing the website are called Black Hat SEO.
- (vi) It mainly contains duplicate contents. Such websites are mainly used to redirect users to other websites and cause traffic.

3. Explain in short White Hat technique.

Ans. :

- (i) Techniques that search engines suggest as a part of good design are called White Hat SEO.
- (ii) It contains proper and well labeled images according to the content.

- (iii) It is in the form of Standard-compliant HTML.
 - (iv) The page titles are unique but relevant at the same time.
 - (v) It has Complete sentences with good spelling and grammar.
4. Explain in short Black Hat technique.

Ans. :

- (i) Techniques that search engines do not approve and those techniques which are used for optimizing the website are called Black Hat SEO.
 - (ii) It mainly contains duplicate contents which mostly are stolen from other original creators mainly without any credits and permissions.
 - (iii) Such websites are mainly used to redirect users to other websites and cause traffic.
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 - (v) This is more useful to compare the cost of various keywords, if the website designer opts for Paid Search Engine Marketing.
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Ans. :

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7. Explain how could you optimize images.

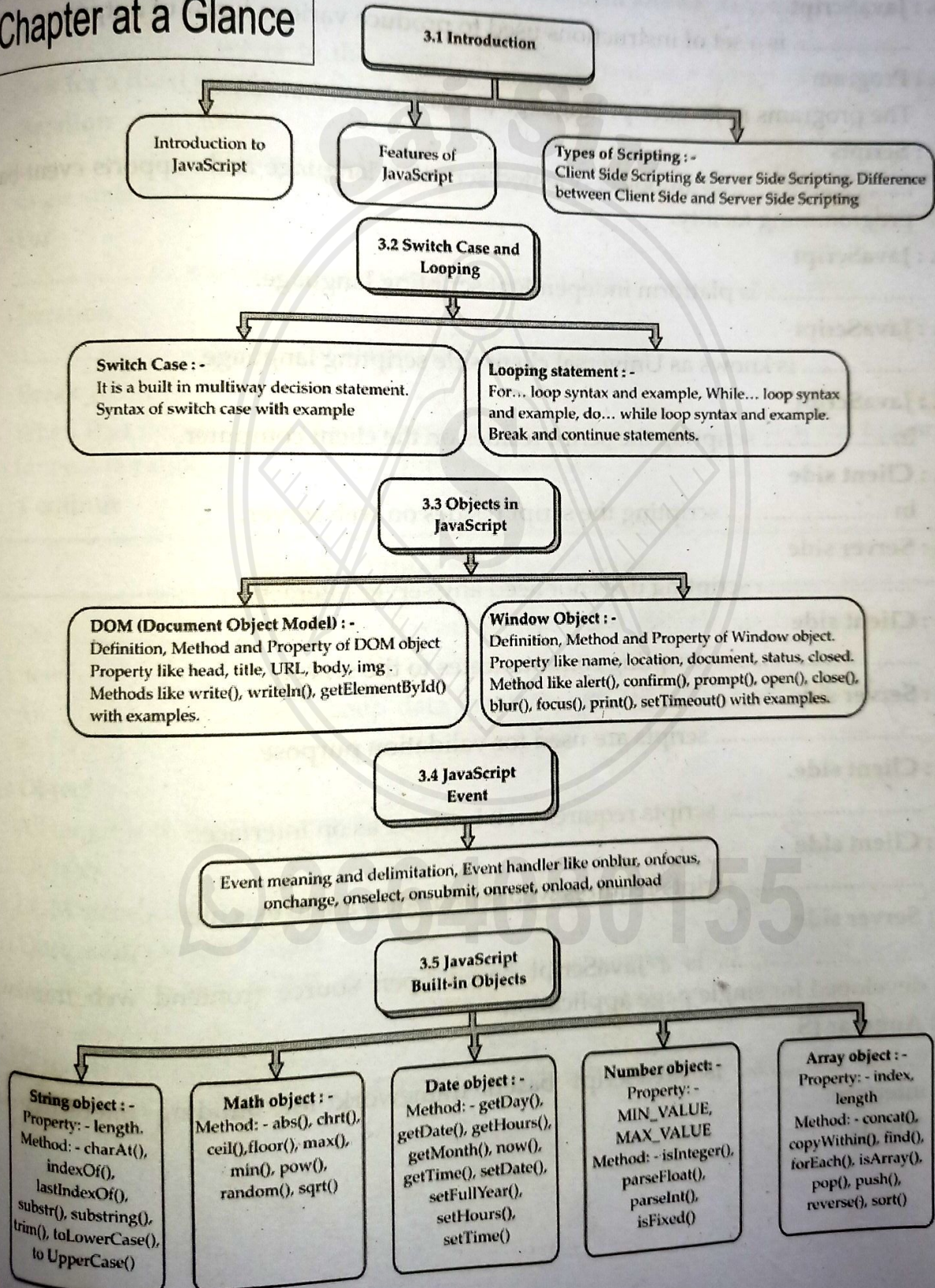
Ans. :

- (i) **Image Tags with ALT attribute** : The alt attribute gives information about the image, so even if the image does not download, it can make the viewers understand the image related information.
- (ii) **Image Tag with Title attribute** : The title tag of images show the keyword of the image when mouse is hovered above the image.
- (iii) **Image compression** : The images which are compressed load faster which give user good friendly experience.
- (iv) **Images can have Caption keywords** : Certain images can have keywords on the image to make it relevant for user to know about it.



 9664080155

Chapter at a Glance



Fill in the Blanks

3.1 Introduction

- is an interpreted scripting language.
Ans.: JavaScript
- is a set of instructions used to produce various kinds of outputs.
Ans.: Program
- The programs in JavaScript language are called
Ans.: Scripts
- is an object oriented scripting language and supports event based programming facility.
Ans.: JavaScript
- is platform independent scripting language.
Ans.: JavaScript
- is known as Universal client side scripting language.
Ans.: JavaScript
- In scripting the script resides on the client computer.
Ans.: Client side
- In scripting the script resides on web server.
Ans.: Server side
- scripting does not need any server interaction.
Ans.: Client side
- scripting communicates to the server.
Ans.: Server side
- scripts are used for validation purpose.
Ans.: Client side
- scripts requires web browser as on interface.
Ans.: Server side
- scripts requires web server software to execute.
Ans.: Angular JS
- is a JavaScript based open source frontend web framework developed for single page application.
Ans.: Vue Js
- is JavaScript based framework for building interactive user interface.

- consists of JavaScript libraries for building UI for single page application and mobile application.
Ans.: React

3.2 Switch case and Looping Structures

- JavaScript has a built-in multiway decision statement known as
Ans.: Switch
- refers to the execution of statement or a group of statements of code for a fixed number of times.
Ans.: Iteration
- loop combines initialization, condition and loop iteration in single statement.
Ans.: For
- means increment or decrement value of a running variable.
Ans.: Iteration
- statement is used to jump out of loop.
Ans.: Break
- When it is necessary to skip statement block and take the control at the beginning for next iteration statement is used.
Ans.: Continue

3.3 Objects in JavaScript

- The keyword is used to create new object in JavaScript.
Ans.: new
- An can group data together with functions needed to manipulate it.
Ans.: Object
- All tangible things are known as
Ans.: Objects
- DOM stands for
Ans.: Document Object Model
- The way in which HTML document content is accessed and modified is called as
Ans.: Document Object Model
- property of DOM object returns the <head> element of the document.
Ans.: Head

29. property of DOM object sets or returns title of the document.
Ans. : Title
30. property of DOM object returns URL of the HTML document.
Ans. : URL
31. method of DOM object writes HTML expressions or JavaScript code to a document.
Ans. : write()
32. method of DOM object adds a newline character after each statement.
Ans. : writeln()
33. Using method id property is used to find an element.
Ans. : getElementById()
34. The property is useful for getting html element and changing its content.
Ans. : innerHTML
35. object is parent of all other objects.
Ans. : window
36. object represents an open window in a browser.
Ans. : window
37. property of window object sets or returns the name of the window.
Ans. : Name
38. property of window object returns the location object for the window.
Ans. : location
39. property of window object returns the document object for the window.
Ans. : document
40. property of window object sets or returns the fact in the status bar of a window.
Ans. : status
41. property of window object returns a Boolean value indicating whether a window has been closed or not.
Ans. : closed
42. method of window object display the alert box containing message with OK button.
Ans. : alert ()

43. method of window object displays the confirm dialog box containing message with ok and cancel button.
Ans. : confirm()
44. method of window object displays a dialog box to get input from the user.
Ans. : prompt()
45. method of window object opens the new window.
Ans. : open()
46. method of window object closes the current window.
Ans. : close()
47. method of window object removes focus from the current window.
Ans. : blur()
48. method of window object sets focus to the current window.
Ans. : focus()
49. method of window object prints the content of current window.
Ans. : print()
50. method of window object calls a function or evaluates an expression after a specified number of milliseconds.
Ans. : setTimeout()

3.4 JavaScript Events

51. are the actions done by users or an application that occurs on the webpage.
Ans. : Events
52. event handler occurs when user leaves field or loses focus of an element.
Ans. : onBlur
53. event handler occurs when an element gets focus.
Ans. : onFocus
54. event handler occurs when user changes content of an element or selects drop down list.
Ans. : onChange
55. event handler occurs when user selects same text of an element.
Ans. : onSelect
56. event handler occurs when user clicks submit button.
Ans. : onSubmit
57. event handler occurs when user clicks reset button.
Ans. : onReset

58. event handler occurs when page/image has been loaded.
Ans. : onload
59. event handler occurs when document page has been unloaded or closes.
Ans. : onload

3.5 JavaScript built-in Objects

60. object is used to store or manipulate text.
Ans. : String
61. property of string object returns number of characters in a string.
Ans. : length
62. method of string object returns the character at the specified position.
Ans. : charAt()
63. method of string object returns the index of the first occurrence of specified character in given string.
Ans. : indexOf()
64. method of string object returns the index of last occurrence of specified character in given string.
Ans. : lastIndexOf()
65. method of string object removes whitespace from both sides of a string.
Ans. : trim()
66. method of string object converts a string to lower case.
Ans. : toLowerCase()
67. method of string object convert a string to upper case.
Ans. : toUpperCase()
68. The built in object includes mathematical constants and functions.
Ans. : math
69. method of math object returns the absolute value of a number.
Ans. : abs()
70. method of Math object returns the cube root of a number.
Ans. : cbrt()
71. method of math object returns the next integer greater than or equal to a given number.
Ans. : ceil()
72. method of math object returns the next integer less than or equal to a given number.
Ans. : floor()

73. method of math object returns the highest valued number in a list of numbers.
Ans. : max()
74. method of math object returns the lowest valued number in a list of numbers.
Ans. : min()
75. method of math object returns the base to the exponent power.
Ans. : pow()
76. method of math object returns a random number between 0 and 1.
Ans. : random()
77. method of math object returns the square root of a number.
Ans. : sqrt()
78. object is used to create date and time values.
Ans. : date
79. method of date object returns the day of the month.
Ans. : getDate()
80. method of date object returns the day of the week.
Ans. : getDay()
81. method of date object returns the year.
Ans. : getFullYear()
82. method of date object returns the hour.
Ans. : getHours()
83. method of date object returns the minutes.
Ans. : getMinutes()
84. method of date object returns the month.
Ans. : getMonth()
85. method of date object returns the seconds.
Ans. : getSeconds()
86. method of date object sets the day of the month.
Ans. : setDate()
87. method of date object sets the full year.
Ans. : setFullYear()
88. method sets the hours of a date object.
Ans. : setHours()
89. method sets the minutes of a date object.
Ans. : setMinutes()

90. method sets the month of a date object.
Ans. : setMonth()
91. method sets the seconds of a date object.
Ans. : setSeconds()
92. method sets a date to a specified number of milliseconds after/before Jan 1, 1970.
Ans. : setTime()
93. object helps us to work with number.
Ans. : Number
94. property of Number object returns the largest minimum value.
Ans. : MIN_VALUE
95. property of number object returns the largest maximum value.
Ans. : MAX_VALUE
96. property of Number object represents not a number value.
Ans. : NaN
97. method of number object determines whether the given value is a Integer.
Ans. : isInteger()
98. method of number object converts the given string into a floating point number.
Ans. : parseFloat()
99. method of Number object converts the given string into a integer number.
Ans. : parseInt()
100. method of number object returns the string that represents a number with exact digits after a decimal point.
Ans. : isFixed()
101. An is an object that can store a collection of items.
Ans. : Array
102. An is a special variable which can hold more than one value at a time.
Ans. : Array
103. The index of the first element of an array is
Ans. : Zero
104. is referred to access and set the items in an array.
Ans. : Index Number
105. property of Array object represents the zero based index of the match in the string.
Ans. : Index

106. Property of Array object reflect number of elements in array.
Ans. : length
107. method of array object joins two or more arrays and returns a copy of the joined arrays.
Ans. : concat()
108. method of Array object copies array elements within the array, to and from specified position.
Ans. : copyWithin()
109. method of array object returns the value of the first element in an array that satisfies a test in testing.
Ans. : find()
110. method of Array object calls a function for each array element.
Ans. : forEach()
111. method of Array object search the array for an element and returns its position.
Ans. : indexOf()
112. method of array object checks whether an object is an array.
Ans. : isArray()
113. method of array object removes the last element of an array and returns that element.
Ans. : pop()
114. method of array object adds new elements to the end of an array.
Ans. : push()
115. method of array object reverses the order of the elements in an array.
Ans. : reverse()
116. method of array object sorts the elements of an array.
Ans. : sort()

True or False

3.1 Introduction

1. JavaScript is an involved scripting language.
Ans. : False
2. An interpreted language is a type of programming language that executes its instructions directly without compiling machine language.
Ans. : True

3. Program is a set of instructions used to produce various kinds of outputs.
Ans.: True
4. JavaScript was created to destroy web pages.
Ans.: False
5. There is no need of special software to run JavaScript program.
Ans.: True
6. Java script is an object oriented scripting language.
Ans.: True
7. JavaScript is not case sensitive language.
Ans.: False
8. JavaScript helps the browser to perform input validation.
Ans.: True
9. JavaScript cannot handle date and time.
Ans.: False
10. JavaScript has the ability to create new functions within scripts.
Ans.: True
11. Functions are declared in JavaScript using var keyword.
Ans.: False
12. Software that can run on any hardware platform is called as platform independent software.
Ans.: True
13. JavaScript is platform independent scripting language.
Ans.: True
14. There are two types of scripting.
Ans.: True
15. In client side scripting, the script resides on client computer and that can run on the client.
Ans.: True
16. Client side scripts are placed inside HTML document.
Ans.: True
17. In Server side scripting the scripts resides on web server.
Ans.: True
18. Server side scripting is used at the front end.
Ans.: False
19. Client side scripting is used at the front end.
Ans.: True
20. When a server side script is processed it communications to the client.
Ans.: False

21. Client side scripting does not need any server interaction.
Ans.: True
22. PHP, ASP.net etc are server side scripting languages.
Ans.: True
23. Client side scripts are generally used for validation purpose.
Ans.: True

3.2 Switch case and Looping Structures

24. JavaScript has a built-in multway decision statement known as switch.
Ans.: True
25. There should not be duplicity between the cases.
Ans.: True
26. The value for the case must be similar data type as the variable in switch.
Ans.: True
27. Iteration refers to the execution of statements of code for a fixed number of times till the condition is satisfied.
Ans.: True
28. For loop combines initializing, condition and loop iteration in single statement.
Ans.: True
29. Loop will execute statement in statements block will the condition is false.
Ans.: False
30. Iteration means increment or decrement value of a running variable.
Ans.: True
31. While loop executes statements as long as the condition is false.
Ans.: False
32. Break statement is used to jump out of loop.
Ans.: True
33. Continue statement is used to make early exit from a loop.
Ans.: False
34. Continue statement is used to skip statement block and take the control at the beginning for next iteration.
Ans.: True

3.3 Objects in JavaScript

35. JavaScript is an object based scripting language.
Ans.: True
36. A JavaScript object is an entity having properties and objects.
Ans.: True

37. Properties and methods of object are accessed with " " Operator.
Ans.: True
38. JavaScript supports 4 types of objects.
Ans.: False
39. JavaScript gives facility to create user defined objects.
Ans.: True
40. The new keyword is used to create new object in JavaScript.
Ans.: True
41. DOM stands for Document Original Model.
Ans.: False
42. The way in which HTML document content is accessed and modified is called as DOM.
Ans.: True
43. Head property of DOM object returns the <head> element of the document.
Ans.: True
44. Title property is DOM object returns the name of the document.
Ans.: False
45. URL property of DOM object returns full URL of the HTML document.
Ans.: True
46. Body property of DOM object returns <body> elements respectively.
Ans.: True
47. write() method of DOM object write Java script code to a document.
Ans.: True
48. writeln() method is same as write () method of DOM object.
Ans.: False
49. writeln() method of DOM object adds a new line character after each statement.
Ans.: True
50. The outerHTML property is used to change any HTML element.
Ans.: False
51. window object is parent object of all other objects.
Ans.: True
52. An object of window is created automatically by the browser.
Ans.: True
53. name property of window object sets or returns the name of a window.
Ans.: True
54. location property of window object returns a Boolean value indicating whether a window has been closed or not.
Ans.: False

55. document property of window object returns the document object for the window.
Ans.: True
56. status property of window object sets the name of a window.
Ans.: False
57. alert() method of window object displays the alert box containing message with ok button.
Ans.: True
58. prompt() method of window object displays a dialog box to set output for the user.
Ans.: False
59. confirm() method of window object displays the confirm dialog box containing message with ok and cancel button.
Ans.: True
60. open () method of window object removes the focus from the current window.
Ans.: False
61. close() method of window object closes the current window.
Ans.: True
62. blur() method of window object removes focus from the current window.
Ans.: True
63. focus() method of window object removes focus from the current window.
Ans.: False
64. print() method of window object prints the content of current window.
Ans.: True
65. setTimeout() method of window object calls a function after a specified number of milliseconds.
Ans.: True

3.4 JavaScript Events

66. Events are the actions done by the user or an application that occurs on the web page.
Ans.: True
67. onKeyPress, onKeyDown are keyboard events.
Ans.: True
68. onClick, onMouseUp are mouse events.
Ans.: True
69. onBlur event handler occurs when an element gets focus.
Ans.: False
70. onFocus event handler occurs which an element gets focus.
Ans.: True

71. onchange event handler occurs when user changes content of an element.
Ans.: True
72. onselect event handler occurs when page image has been loaded.
Ans.: False
73. onsubmit event handler occurs when user clicks submit button.
Ans.: True
74. onreset event handler occurs when user clicks reset button.
Ans.: True
75. onload event handler occurs when document/page has been loaded.
Ans.: True
76. onunload event handler occurs when user clicks on submit button.
Ans.: False

3.5 JavaScript built-in Objects

77. String is used to store zero or more character of text within single or double quotes.
Ans.: True
78. String object is used to store and manipulate numbers.
Ans.: False
79. length property returns the number of characters in a string.
Ans.: True
80. charAt() method of string object returns the character at the specified position.
Ans.: True
81. indexOf() method of string object returns the index of the middle occurrence of the specified character in the given string.
Ans.: False
82. lastIndexOf() method of string object returns the index of the last occurrence of specified character in given string.
Ans.: True
83. substr() method of string object returns the characters you specified.
Ans.: True
84. trim() method of string objects adds the white spaces from both sides of a string.
Ans.: False
85. toLowerCase() method of string object converts a string to capitals.
Ans.: False
86. toUpperCase() method of string object converts the string to upper case.
Ans.: True
87. The Math object includes mathematical constants and functions.
Ans.: True

88. There is no need to create a Math object before using it.
Ans.: True
89. abs() method of math object returns square root of a number.
Ans.: False
90. cbrt() method of math object cube root of a number.
Ans.: True
91. ceil() method of math object returns the next inter greater than or equal to a given number.
Ans.: True
92. floor() method of math object returns the next integer less than or equal to a given number.
Ans.: True
93. max() method of math object returns the smallest valued number of a list of numbers.
Ans.: False
94. min() method of math object returns the power of the number.
Ans.: False
95. pow() method of math object returns the base to the exponent power.
Ans.: True
96. random() method of math object returns a random number between 0 and one.
Ans.: True
97. sqrt() method of math object returns the square root of a number.
Ans.: True
98. The time object is used to create date and time values.
Ans.: False
99. Date object is created using new keyword.
Ans.: True
100. getDate() method of date object returns the day of month.
Ans.: True
101. getDay() method of date object returns the day of the month.
Ans.: False
102. getFullYear() method of date object returns the year.
Ans.: True
103. getHours() method of Date object returns the month.
Ans.: False
104. getMinutes() method of Date object returns minutes.
Ans.: True

105. `getMonth()` method of Date object returns month name.
Ans.: False
106. `getSeconds()` method of Date object returns seconds.
Ans.: True
107. `getTime()` method of Date object returns date.
Ans.: False
108. `now()` method of Date object returns the number of a milliseconds.
Ans.: True
109. `setDate()` method of Date object set day of the month of a date object.
Ans.: True
110. `setFullYear()` method of Date object sets year.
Ans.: True
111. `setHours()` method of Date object set the seconds.
Ans.: False
112. `setMinutes()` method of Date objects sets minutes.
Ans.: True
113. `setMonth()` method of Date object sets month.
Ans.: True
114. `setSeconds()` method of Date object sets hours.
Ans.: False
115. `setTime()` method of Date object sets a date to a specified number of milliseconds.
Ans.: True
116. Number object helps us to work with numbers.
Ans.: True
117. `MIN_VALUE` property of number object returns the largest minimum value.
Ans.: True
118. `MAX_VALUE` property of number objects returns the largest minimum value.
Ans.: False
119. NaN property of number of object returns Not a Number value.
Ans.: True
120. `isNaN()` method of number of object determine whether the given value is a character.
Ans.: False
121. `parseFloat()` method of number object converts the given string into a floating point number.
Ans.: True
122. `parseInt()` method of number object converts the given string into a integer number.
Ans.: True

123. `toFixed()` method of number object returns the string that represents a number with exact digits after a decimal point.
Ans.: True
124. An array is an object that can store a collection of items.
Ans.: True
125. Arrays are used to store single value in single variable.
Ans.: False
126. Items of array can be accessed by referring to its index number.
Ans.: True
127. Index of first element of an array is one.
Ans.: False
128. `marks[0]` is the first element of the array.
Ans.: True
129. Index property of Array object represents two based index of the matching the string.
Ans.: False
130. Length property of Array object reflects number of elements in array.
Ans.: True
131. `concat()` method of Array object joins two or more arrays and returns a copy of joined array.
Ans.: True
132. `copyWithin()` method of Array object adds array elements within the array to and from a specified positions.
Ans.: False
133. `find()` method of Array object returns the value of the first element in an array that satisfies a test in testing.
Ans.: True
134. `forEach()` method of Array object search the array and returns it's position.
Ans.: False
135. `indexOf()` method of Array object search the array for an element and returns its position.
Ans.: True
136. `isArray()` method of Array object removes element from array.
Ans.: False
137. `pop()` method of Array objects removes the last element of an array and returns that element.
Ans.: True
138. `push()` method of Array object add new elements to the end of an array and returns the new length.
Ans.: True

139. reverse() method of Array object returns the elements in an array.
 Ans. : False
140. sort() method of Array object sorts the elements of an array.
 Ans. : True

MCQ (One Correct Answers)

3.1 Introduction

- is an interpreted scripting language.
 (a) PHP (b) C++ (c) HTML (d) JavaScript
 Ans. : (d)
- is a set of instructions used to produce various kinds of outputs.
 (a) Design (b) Software (c) Program (d) Hardware
 Ans. : (c)
- The programs in JavaScript language are called
 (a) Website (b) Scripts (c) Web server (d) Software
 Ans. : (b)
- is an object oriented scripting language and supports event based programming facility.
 (a) JavaScript (b) C++ (c) Excel (d) Word
 Ans. : (a)
- is platform independent scripting language.
 (a) MSWord (b) Javascrpt (c) PHP (d) C++
 Ans. : (b)
- is known as Universal client side scripting language.
 (a) Word (b) Powerpoint (c) Tally (d) JavaScript
 Ans. : (d)
- In scripting the script resides on the client computer.
 (a) Client Side (b) Server Side (c) My Side (d) Website
 Ans. : (a)
- In scripting the script resides on the web server.
 (a) Client side (b) My side (c) Server Side (d) Website
 Ans. : (c)
- scripting does not need any server interaction.
 (a) Server Side (b) Website (c) My side (d) Client Side
 Ans. : (d)

- scripting communicates to the server.
 (a) Client Side (b) Software Side (c) Server Side (d) Website
 Ans. : (c)
- scripts are used for validation purpose.
 (a) Client Side (b) Server Side (c) Website (d) Web Browser
 Ans. : (a)
- scripts requires web browser as on interface.
 (a) Server Side (b) Webpage (c) Website (d) Client Side
 Ans. : (d)
- scripts requires web server software to execute.
 (a) Client Side (b) Server Side (c) Peer (d) Home
 Ans. : (b)
- is a JavaScript based open source frontend web framework developed for single page application.
 (a) Vue JS (b) Response (c) Angular JS (d) React
 Ans. : (c)
- is JavaScript based framework for building interactive user interface.
 (a) Vue JS (b) Response (c) React (d) Vue JS
 Ans. : (a)
- consists of JavaScript libraries for building UI for single page application and mobile application.
 (a) Angular JS (b) Vue JS (c) Respond (d) React
 Ans. : (d)
- Functions in JavaScript are declared using Keyword.
 (a) Function (b) Object (c) Method (d) var
 Ans. : (a)

3.2 Switch case and Looping Structures

- JavaScript has a built-in multiway decision statement known as
 (a) Condition (b) Switch (c) Break (d) Continue
 Ans. : (b)
- refers to the execution of statement or a group of statements of code for a fixed number of times.
 (a) Statement (b) Function (c) Iteration (d) Method
 Ans. : (c)

20. loop combines initialization, condition and loop iteration
single statement
(a) for (b) Break (c) Switch (d) Continue
Ans.: (a)
21. means increment or decrement value of a running variable.
(a) Switch (b) Method (c) Object (d) Iteration
Ans.: (d)
22. statement is used to jump out of loop.
(a) Respond (b) Continue (c) Break (d) React
Ans.: (c)
23. What it is necessary to skip statement block and take the control at the beginning of next iteration statement is used.
(a) Break (b) Continue (c) React (d) Response
Ans.: (b)

3.3 Objects in JavaScript

24. The keyword is used to create new object in JavaScript.
(a) Next (b) Wend (c) Loop (d) New
Ans.: (d)
25. An can group data together with functions needed to manipulate it.
(a) Method (b) Function (c) Object (d) Response
Ans.: (c)
26. All tangible things are known as
(a) Method (b) Objects (c) Function (d) Variable
Ans.: (b)
27. DOM stands for
(a) Document Object Model (b) Document One Model
(c) Design One Model (d) Document Object Manage
Ans.: (a)
28. The way in which HTML document content is accessed and modified is called
(a) Design Object Model (b) Develop Object Model
(c) Do Object Model (d) Document Object Model
Ans.: (d)

29. document.
Property of DOM object returns the <head> element of the document.
(a) head (b) body (c) title (d) link
Ans.: (a)
30. property of DOM object sets or returns title of the document.
(a) head (b) body (c) source (d) Title
Ans.: (d)
31. property of DOM object returns URI of the HTML document.
(a) SRC (b) HREF (c) URL (d) LINK
Ans.: (c)
32. method of DOM object writes HTML expressions or JavaScript code to a document.
(a) write() (b) read() (c) close() (d) ReadOnly()
Ans.: (a)
33. method of DOM object adds a new line character after each statement.
(a) close() (b) writeln() (c) read() (d) readOnly()
Ans.: (b)
34. Using method id property is used to find an element.
(a) write (b) URL (c) writeln (d) getElementById()
Ans.: (d)
35. The property is useful for getting html element and changing its content.
(a) write (b) URL (c) innerHTML (d) writeln
Ans.: (c)
36. object is parent of all other objects.
(a) window (b) math (c) string (d) number
Ans.: (a)
37. object represents an open window in a browser.
(a) Math (b) Array (c) String (d) Window
Ans.: (d)
38. property of window object sets or returns the name of the window.
(a) location (b) name (c) document (d) status
Ans.: (b)

39. property of window object returns the location object for the window.
 (a) Window (b) Array (c) Math (d) Document
 Ans.: (d)
40. property of window object returns the location object for the window.
 (a) name (b) location (c) status (d) closed
 Ans.: (b)
41. property of window object sets or returns the text in the status bar of a window.
 (a) name (b) location (c) status (d) closed
 Ans.: (c)
42. property of window object returns a Boolean value indicating whether a window has been closed or not.
 (a) closed (b) status (c) document (d) name
 Ans.: (a)
43. method of window object display the alert box containing message with OK button.
 (a) open() (b) close() (c) alert() (d) prompt()
 Ans.: (c)
44. method of window object displays the confirm dialog box containing message with ok and cancel button.
 (a) blur() (b) confirm() (c) print() (d) focus()
 Ans.: (b)
45. method of window object displays a dialog box to get input from the user.
 (a) alert() (b) open() (c) confirm() (d) prompt()
 Ans.: (d)
46. method of window object opens the new window.
 (a) open() (b) close() (c) focus() (d) blur()
 Ans.: (a)
47. method of window object closes the current window.
 (a) open() (b) close() (c) blur() (d) alert()
 Ans.: (b)
48. method of window object removes focus from the current window.
 (a) print() (b) open() (c) prompt() (d) blur()
 Ans.: (d)

49. method of window object sets focus to the current window.
 (a) focus() (b) open() (c) blur() (d) close()
 Ans.: (a)
50. method of window object prints the content of current window.
 (a) alert() (b) setTimeout() (c) print() (d) open()
 Ans.: (d)
51. method of window object calls a function or evaluates an expression after a specified number of milliseconds.
 (a) open() (b) setTimeout() (c) blur() (d) focus()
 Ans.: (b)

3.4 JavaScript Events

52. are the actions done by users or an application that occurs on the webpage.
 (a) Events (b) Methods (c) Object (d) Functions
 Ans.: (a)
53. event occurs when user leaves or loses focus of an element.
 (a) onchange (b) onblur (c) onfocus (d) onload
 Ans.: (b)
54. event occurs when an element gets focus.
 (a) onload (b) onblur (c) onfocus (d) onchange
 Ans.: (c)
55. event occurs when user changes content of an element or selects drop down value.
 (a) onblur (b) onfocus (c) onload (d) onchange
 Ans.: (d)
56. event occurs when user selects some text of an element.
 (a) onselect (b) onblur (c) onchange (d) onsubmit
 Ans.: (a)
57. event occurs when user clicks submit button.
 (a) onblur (b) onchange (c) onfocus (d) onsubmit
 Ans.: (d)
58. event occurs when user clicks reset button.
 (a) onload (b) onreset (c) onchange (d) onsubmit
 Ans.: (d)

59. event occurs when page/image has been loaded.
 (a) onblur (b) onsubmit (c) onload (d) onunload
60. event occurs when document page has been unloaded or closes.
 (a) onsubmit (b) onunload (c) onselect (d) onload

Ans.: (b)

3.5 JavaScript built-in Objects

61. object is used to store or manipulate text.

- (a) Math (b) Date (c) Number (d) String

Ans.: (d)

62. property of string object returns number of characters in a string.

- (a) value (b) length (c) object (d) len

Ans.: (b)

63. method of string object returns the character at the specified position.

- (a) indexOf() (b) substr() (c) charAt() (d) trim()

Ans.: (c)

64. method of string object returns the index of the first occurrence of specified character in given string.

- (a) indexOf() (b) substr() (c) substring() (d) trim()

Ans.: (a)

65. method of string object returns the index of last occurrence of specified character in given string.

- (a) substr() (b) charAt() (c) lastIndexOf() (d) trim()

Ans.: (c)

66. method of string object removes white space from both sides of a string.

- (a) trim() (b) substr() (c) indexOf() (d) substring()

Ans.: (a)

67. method of string object converts a string to lower case.

- (a) toUpperCase() (b) substr() (c) trim() (d) toLowerCase()

Ans.: (d)

68. method of string object converts a string to upper case.

- (a) toLowerCase() (b) toUpperCase() (c) trim() (d) substring()

Ans.: (b)

69. The built in object includes mathematical constants and functions.
 (a) String (b) Date (c) Math (d) Math

Ans.: (c)

70. method of math object returns the absolute value of a number.
 (a) abs() (b) cbrt() (c) min() (d) sqrt()

Ans.: (a)

71. method of Math object returns the cube root of a number.
 (a) sqrt() (b) max() (c) ceil() (d) cbrt()

Ans.: (d)

72. method of math object returns the next integer greater than or equal to a given number.
 (a) abs() (b) cbrt() (c) ceil() (d) floor()

Ans.: (c)

73. method of math object returns the next integer less than or equal to a given number.
 (a) abs() (b) floor() (c) min() (d) max()

Ans.: (b)

74. method of math object returns the highest valued number in a list of numbers.
 (a) min() (b) pow() (c) sqrt() (d) max()

Ans.: (d)

75. method of math object returns the lowest valued number in a list of numbers.
 (a) pow() (b) max() (c) min() (d) floor()

Ans.: (c)

76. method of math object returns the base to the exponent power.
 (a) pow() (b) floor() (c) abs() (d) cbrt()

Ans.: (a)

77. method of math object returns a random number between 0 and 1.
 (a) abs() (b) random() (c) pow() (d) sqrt()

Ans.: (b)

78. method of math object returns the square root of a number.
 (a) cbrt() (b) ceil() (c) sqrt() (d) abs()

Ans.: (c)

79. object is used to create date and time values.
 (a) math (b) Date (c) string (d) Number

Ans.: (b)

80. method of date object returns the day of the month.
 (a) `getDay()` (b) `getHours()` (c) `getMonth()` (d) `getDate()`

Ans.: (d)
 81. method of date object returns the day of the week.
 (a) `getDay()` (b) `getHours()` (c) `getMonth()` (d) `getDate()`

Ans.: (a)
 82. method of date object returns the year.

(a) `getDate()` (b) `setSeconds()` (c) `getFullYear()` (d) `setDate()`

Ans.: (c)
 83. method of date object returns the hour.

(a) `getHours()` (b) `now()` (c) `getTime()` (d) `setHours()`

Ans.: (a)
 84. method of date object returns the minutes.

(a) `getHours()` (b) `getMonth()` (c) `now()` (d) `getMinutes()`

Ans.: (d)
 85. method of date object returns the month.

(a) `getSeconds()` (b) `getMonth()`
 (c) `setHours()` (d) `getTime()`

Ans.: (b)
 86. method of date object returns the seconds.

(a) `getSeconds()` (b) `getDate()`
 (c) `getMonth()` (d) `now()`

Ans.: (a)
 87. method of date object sets the day of the month.

(a) `setHours()` (b) `setTime()` (c) `setDate()` (d) `setMinutes()`

Ans.: (c)
 88. method of date object sets the full year.

(a) `setTime()` (b) `setFullYear()` (c) `now()` (d) `getMonth()`

Ans.: (b)
 89. method sets the hours of a date object.

(a) `now()` (b) `getDay()` (c) `getMonth()` (d) `setHours()`

Ans.: (d)
 90. method sets the minutes of a date object.

(a) `setMinutes()` (b) `getDay()` (c) `now()` (d) `setHours()`

91. method sets the month of a date object.
 (a) `setTime()` (b) `getDay()` (c) `setMonth()` (d) `getDate()`

Ans.: (c)
 92. method sets the seconds of a date object.
 (a) `setHours()` (b) `setSeconds()` (c) `setMonth()` (d) `setTime()`

Ans.: (b)
 93. method sets a date to a specified number of milliseconds after/before Jan 1, 1970.

(a) `setTime()` (b) `setSeconds()` (c) `now()` (d) `setHours()`

Ans.: (a)
 94. object helps us to work with number.

(a) `Math` (b) `Number` (c) `Array` (d) `Date`

Ans.: (b)
 95. property of Number object returns the largest minimum value.

(a) `MAX_VALUE` (b) `NaN`
 (c) `MIN_VALUE` (d) `Fixed`

Ans.: (c)
 96. property of number object represents not a number value.

(a) `NaN` (b) `Value` (c) `Fixed` (d) `Index`

Ans.: (a)
 97. Method of Number object determines whether the given value is a integer.

(a) `parseFloat()` (b) `isFixed()` (c) `isInteger()` (d) `parseInt()`

Ans.: (c)
 98. method of number object determines whether the given value is Integer.

(a) `parseFloat()` (b) `parseInt()` (c) `isFixed()` (d) `NaN`

Ans.: (a)
 99. method of number object converts the given string into a integer number.

(a) `isInteger()` (b) `isFixed()` (c) `parseFloat()` (d) `parseInt()`

Ans.: (d)
 100. method of Number object returns the string that represents a number with exact digits after a decimal point.

(a) `isInteger()` (b) `isFixed()` (c) `parseInt()` (d) `parseFloat()`

101. How to declare string variable ?

- (a) var str = new str ();
 (b) var a = I. T ;
 (c) a = str. Str ;
 (d) var str = "Information Technology" ;

Ans. : (d) is an object that can store a collection of items.

102. An is an object that can store a collection of items.

- (a) Array
 (b) String
 (c) Number
 (d) Math

Ans. : (a) are used to hold more than one value at a time.

103. are used to hold more than one value at a time.

- (a) Number
 (b) Math
 (c) Array
 (d) Date

Ans. : (c)

104. To create an array in JavaScript the correct method is

- (a) var d = new d [one, two, three]
 (b) var d = (one, two three)
 (c) var arr = ["One", "Two", "Three"]
 (d) var d = (One), (Two), (Three)

Ans. : (c)

105. To access and set the items in any array is referred.

- (a) indexnumber
 (b) element
 (c) array
 (d) object

Ans. : (a)

106. The index of the first element of an array is

- (a) One
 (b) Two
 (c) Three
 (d) Zero

Ans. : (d)

107. property of Array object represents the zero based index of the match in the string.

- (a) index
 (b) length
 (c) NaN
 (d) Close

Ans. : (a)

108. property of Array object reflect number of elements in array.

- (a) index
 (b) length
 (c) NaN
 (d) Value

Ans. : (b)

109. method of Array object joins two or more arrays, and returns a copy of the joined arrays.

- (a) find()
 (b) concat()
 (c) indexOf()
 (d) pop()

Ans. : (b)

110. method of Array object copies array elements within the array, to and from specific positions.

- (a) find()
 (b) search()
 (c) copyWithin()
 (d) indexOf()

Ans. : (c)

111. method of Array object returns the value of the first element in an array that satisfies a test in testing.

- (a) concat()
 (b) pop()
 (c) push()
 (d) find()

Ans. : (d)

112. method of Array object calls a function for each array element.

- (a) concat()
 (b) forEach()
 (c) pop()
 (d) push()

Ans. : (b)

113. method of Array object search the array for an element and returns its position.

- (a) concat()
 (b) forEach()
 (c) indexOf()
 (d) pop()

Ans. : (c)

114. method of Array object checks whether an object is an array.

- (a) find()
 (b) pop()
 (c) forEach()
 (d) isArray()

Ans. : (d)

115. method of Array object removes the last element of an array and returns that element.

- (a) pop()
 (b) push()
 (c) find()
 (d) reverse()

Ans. : (a)

116. method of Array object add new elements to the end of an array, and returns the new length.

- (a) pop()
 (b) push()
 (c) sort()
 (d) find()

Ans. : (b)

117. method of Array object reverses the order of the elements in an array.

- (a) find()
 (b) isArray()
 (c) pop()
 (d) reverse()

Ans. : (d)

118. method of Array object sorts the elements of an array.

- (a) concat()
 (b) sort()
 (c) pop()
 (d) find()

Ans. : (b)

MCO (Two Correct Answers)

3.1 Introduction

1. Features of JavaScript are

- (a) It needs special software
 (b) JavaScript is light weight scripting language
 (c) Cannot create new function
 (d) It is object oriented scripting

Ans. : (b), (d)

2. There are two types of Scripting
 (a) Server side (b) My side (c) Browser side (d) Client side

Ans.: (a), (d)
 3. Client Side Scripting

- (a) These scripts are paced inside HTML document
 (b) In this type the script resides on Client Computer.
 (c) In this type, the script resides on web server
 (d) To execute script it must be activated by client then it is executed on web server.

Ans.: (a), (b)

3.2 Switch case and Looping Structures

4. Types of loops in JavaScript are

- (a) forloop (b) whileloop
 (c) fornext (d) whilewend

Ans.: (a), (b)

5. Correct method of for loop are

- (a) for (i = 1, i <= 5, i++)
 {
 document.write(i);
 }
 (b) for (i = 1, i = 4);
 {
 document.write (i);
 }
 (c) for (i = 1, i <= 5, i++)
 {
 document.write(i);
 }
 (d) for (i = 1, i <= 5, i++)
 {
 document.write (i);
 }

Ans.: (a), (c)

3.3 Objects in JavaScript

6. JavaScript supports following types of objects

- (a) Variables (b) built-in objects
 (c) User defined objects (d) loops

Ans.: (b), (c)

7. Following are the built in objects in JavaScript

- (a) Math (b) Time (c) Array (d) Month

Ans.: (a), (c)

8. Following are the properties of Document Object Model
 (a) Src (b) head (c) URL (d) title

Ans.: (a), (c)

9. Following are the methods of Document Object Model

- (a) body (b) write() (c) URL (d) writeIn()
 (a) name (b) location (c) alert() (d) confirm()

Ans.: (b), (d)

10. Following are the properties of Window object

- (a) open() (b) status (c) closed (d) close()
 (a) GO (b) OK (c) Cancel (d) Click

Ans.: (b), (c)

3.4 JavaScript Events

13. Following are the event handlers in JavaScript

- (a) onsubmit (b) write() (c) onchange (d) writeIn()
 (a) (a), (c)

3.5 JavaScript built-in Objects

14. Following are the methods of string objects

- (a) charAt() (b) width (c) length (d) trim()
 (a) (a), (d)

15. To find the highest and lowest valued number in a list of numbers which Math Object methods are used in JavaScript

- (a) ceil() (b) sqrt() (c) max() (d) min()
 (a) (c), (d)

16. Following are the methods of Math objects

- (a) substr() (b) abs() (c) trim() (d) random()
 (a) (b), (d)

17. In JavaScript following methods of String object returns the characters you specified.

- (a) substring() (b) indexOf() (c) substr() (d) lastIndexOf()
 (a) (a), (c)

18. Different ways to create new Date object are
- (a) var d = new Date();
 - (b) var d = Date()
 - (c) var d = month()
 - (d) var d = new Date (DateString);

Ans.: (a), (d)

19. Following are the methods of Date object
- (a) setDateTime()
 - (b) getDateTime()
 - (c) getTime()
 - (d) getDay()

Ans.: (c), (d)

20. Following properties of Number Object returns the largest minimum and maximum value
- (a) MIN_VALUE
 - (b) MAX_VALUE
 - (c) toLowerCase()
 - (d) toUpperCase()

Ans.: (a), (b)

21. Following are the properties of Number Object in JavaScript
- (a) lowercase
 - (b) Uppercase
 - (c) NaN
 - (d) MAX_VALUE

Ans.: (c), (d)

22. Following are the methods of Number of object in JavaScript
- (a) NaN
 - (b) parseInt()
 - (c) isFixed()
 - (d) toLowerCase()

Ans.: (b), (c)

23. Following methods are used to create Array variable in JavaScript
- (a) var a = "One, two";
 - (b) var - a ["One", "Two", "Three"];
 - (c) array a = ("One", "Two");
 - (d) var a = new Array ("One", "Two", "Three");

Ans.: (b), (d)

24. Following are the properties of Array object in JavaScript
- (a) index
 - (b) isFixed
 - (c) concat
 - (d) length

Ans.: (a), (d)

25. Following are the methods of Array object in JavaScript
- (a) index
 - (b) length
 - (c) forEach()
 - (d) isArray()

Ans.: (c), (d)

26. Following methods of Date object returns the number of milliseconds
- (a) getTime()
 - (b) getDate()
 - (c) getTime()
 - (d) now()

Ans.: (c), (d)

27. The Date object is used to create and values.
- (a) date
 - (b) string
 - (c) Time
 - (d) Number

Ans.: (a), (c)

28. The built-in Math object includes mathematical and
- (a) constants
 - (b) functions
 - (c) objects
 - (d) values

Ans.: (a), (b)

MCQ (Three Correct Answers)

3.1 Introduction

1. Features of JavaScript are

- (a) Need of special software
- (b) It can handle date and time effectively
- (c) It cannot create new functions
- (d) It can not create new functions
- (e) It supports event based programming
- (f) It is platform dependent scripting language

Ans.: (b), (c), (e)

2. Server Side Scripting

- (a) It is used as front end
- (b) Does not need any server interactions
- (c) Involves languages such as HTML5, JavaScript etc.
- (d) It is used as back end
- (e) Special software is required to execute
- (f) Script resides on web server

Ans.: (d), (e), (f)

3. Popular Framework /libraries

- (a) HTML
- (b) Angular JS
- (c) Network Frame
- (d) Vue Js
- (e) React
- (f) Switch Case

Ans.: (b), (d), (e)

3.2 Switch case and Looping Structures

4. Java Script looping statements are

- (a) for loop
- (b) switch case
- (c) while loop
- (d) if
- (e) if else if
- (f) Do while loop

Ans.: (a), (c), (f)

3.3 Objects in JavaScript

5. JavaScript built in objects are
- (a) Math (b) String (c) Number
(d) Time (e) Month (f) Year

Ans.: (a), (b), (c)

6. Properties of Document Object Model are
- (a) write (b) writeln (c) title
(d) URL (e) writeln () (f) head

Ans.: (c), (d), (f)

7. Methods of Document Object Model are
- (a) write() (b) getElementById() (c) URL
(d) head (e) SRC (f) writeln()

Ans.: (a), (b), (f)

8. Methods of Window Object are
- (a) Name (b) blur() (c) location (d) focus()
(e) closed (f) setTimeout()

Ans.: (b), (d), (f)

9. Select three correct properties of Window Object.
- (a) close (b) name (c) print (d) status
(e) open (f) closed

Ans.: (b), (d), (f)

3.4 JavaScript Events

10. Select three correct event handlers in JavaScript

- (a) close (b) open (c) onSubmit (d) onChange
(e) onunload (f) write

Ans.: (c), (d), (e)

3.5 JavaScript built-in Objects

11. Methods of string object are

- (a) substr() (b) length (c) toLowerCase()
(d) abs (e) indexOf (f) ceil

Ans.: (a), (c), (e)

12. Methods of Math object are

- (a) sqrt() (b) substr() (c) indexOf (d) random ()
(e) close() (f) floor ()

Ans.: (a), (d), (f)

13. Methods of Date objects are

- (a) trim() (b) getDay() (c) getHours() (d) indexOf()
(e) getTime() (f) charAt()

Ans.: (b), (c), (e)

14. Different ways to create new date object are

- (a) var d = new Date(); (b) var d = Date()
(c) var d = date new() (d) var d = new Date(DateString);
(e) var d = new Date (date String) (f) var d = new Date(milliseconds);

Ans.: (a), (d), (f)

15. Properties of Number objects are

- (a) length (b) onblur
(c) onfocus (d) MIN_VALUE
(e) MAX_VALUE (f) NaN

Ans.: (d), (e), (f)

16. Select three correct methods of Number object

- (a) NaN (b) parseFloat() (c) isFixed()
(d) length (e) index (f) isInteger()

Ans.: (b), (c), (f)

17. Methods of Array object are

- (a) sort() (b) indexOf() (c) isFixed()
(d) forEach() (e) isInteger() (f) parseInt()

Ans.: (a), (b), (d)

Match the Following

3.2 Switch Case and Looping Structures

(1)		(2)	
A	B	A	B
(1) Switch case	(a)	Combines initialization, condition and loop iteration	
(2) For loop	(b)	Skip statement block and take the control at the beginning for next iteration	
(3) Break	(c)	Server side script	
(4) Continue	(d)	Used to jump out of loop	
	(e)	Decision statement	

Ans.: (1) - (e), (2) - (a), (3) - (d), (4) - (b)

3.3 Objects in JavaScript

A		B	
(1) Head	(a)	(a)	Returns title of the document
(2) Title	(b)	(b)	Returns <body> elements
(3) URL	(c)	(c)	Returns URL of document
(4) Body, img	(d)	(d)	Returns <head> element of the document
	(e)	(e)	Writes expression

Ans.: (1) - (d), (2) - (a), (3) - (c), (4) - (b)

A		B	
(1) DOM	(a)	(a)	Defines logical structure of document
(2) write()	(b)	(b)	Client Side Script
(3) writeIn()	(c)	(c)	In which id property is used to find element
(4) getElementById()	(d)	(d)	Writes JavaScript Code
	(e)	(e)	Writes JavaScript code to a document by adding new line after each statement

Ans.: (1) - (a), (2) - (d), (3) - (e), (4) - (c)

A		B	
(1) Location	(a)	(a)	Sets name of the window
(2) Document	(b)	(b)	Returns Boolean value indicating whether a window
(3) Status	(c)	(c)	Returns document object of window
(4) Closed	(d)	(d)	Returns the text in the status bar of a window
(5) Name	(e)	(e)	Returns the location object for the window

Ans.: (1) - (e), (2) - (c), (3) - (d), (4) - (b), (5) - (a)

A		B	
(1) Window object	(a)	(a)	Displays dialog box containing message with ok and cancel button
(2) alert()	(b)	(b)	Opens the new window
(3) confirm()	(c)	(c)	Displays dialog box to get input from the user
(4) prompt()	(d)	(d)	Parent object of all other objects
(5) open()	(e)	(e)	Displays box with ok button

Ans.: (1) - (d), (2) - (e), (3) - (a), (4) - (c), (5) - (b)

A		B	
(1) close()	(a)	(a)	Removes focus from the current window
(2) blur()	(b)	(b)	Prints the content of current window
(3) focus()	(c)	(c)	Closes the current window
(4) print()	(d)	(d)	Calls a function after specified number of milliseconds
(5) setTimeout()	(e)	(e)	Sets focus to the current window

Ans.: (1) - (c), (2) - (a), (3) - (e), (4) - (b), (5) - (d)

3.4 JavaScript Events

A		B	
(1) On blur	(a)	(a)	Occurs when user changes content of an element
(2) On focus	(b)	(b)	Occurs when user selects some text of an element
(3) On change	(c)	(c)	Occurs when an element get focus
(4) On select	(d)	(d)	Occurs when user leaves field or losses focus of an element
	(e)	(e)	Closes window

Ans.: (1) - (d), (2) - (c), (3) - (a), (4) - (b)

A		B	
(1) Onsubmit	(a)	(a)	Occurs when user clicks on reset button
(2) Onreset	(b)	(b)	Prints the contents of the window
(3) Onload	(c)	(c)	Occurs when document page has been unloaded or closes
(4) Onunload	(d)	(d)	Occurs when user clicks submit button
	(e)	(e)	Occurs when page image has been loaded

Ans.: (1) - (d), (2) - (a), (3) - (e), (4) - (c)

3.5 JavaScript built-in Objects

A		B	
(1) Length	(a)	(a)	Returns the character at the specified position
(2) charAt()	(b)	(b)	Returns the index of last occurrence of specified character in given story
(3) indexOf()	(c)	(c)	Returns the characters you specified
(4) lastIndexOf()	(d)	(d)	Returns the index of the first occurrence of the character
(5) substr()	(e)	(e)	Returns a number of character in a string

Ans.: (1) - (e), (2) - (a), (3) - (d), (4) - (b), (5) - (c)

A		B	
(1) substring()	(a)	(a)	Returns the characters you specified
(2) trim()	(b)	(b)	Converts a string into lower case
(3) toLowerCase()	(c)	(c)	Returns length of string
(4) toUpperCase()	(d)	(d)	Converts the string into Upper case
	(e)	(e)	Removes white spaces from both sides of a string

Ans.: (1) - (a), (2) - (e), (3) - (b), (4) - (d)

A		B	
(1) abs()	(a)	(a)	Returns next integer greater than or equal to a given number
(2) Math.ceil()	(b)	(b)	Returns the highest valued number in a list of Numbers
(3) Math.floor()	(c)	(c)	Returns the absolute value of a number
(4) Math.floor()	(d)	(d)	Returns the cube root of a number
(5) Math.max()	(e)	(e)	Returns next integer less than or equal to a given number

Ans.: (1) - (c), (2) - (d), (3) - (a), (4) - (e), (5) - (b)

A		B	
(1) Math.min()	(a)	(a)	Returns the base to the exponent power
(2) Math.pow()	(b)	(b)	Returns the square root of a number
(3) Math.random()	(c)	(c)	Returns the cube root of a number
(4) Math.sqrt()	(d)	(d)	Returns a random number between 0 and 1
	(e)	(e)	Returns the lowest valued number in a list of number

Ans.: (1) - (e), (2) - (a), (3) - (d), (4) - (b)

A		B	
(1) getDate()	(a)	(a)	Returns the year
(2) getDay()	(b)	(b)	Returns the Time
(3) getFullYear()	(c)	(c)	Returns the day of the week
(4) getHours()	(d)	(d)	Returns the hour
	(e)	(e)	Returns the day of the month

Ans.: (1) - (e), (2) - (c), (3) - (a), (4) - (d)

A		B	
(1) getMinutes()	(a)	(a)	Returns the number of milliseconds
(2) getMonth()	(b)	(b)	Returns the minutes
(3) getSeconds()	(c)	(c)	Sets the month
(4) getTime()	(d)	(d)	Returns the month
	(e)	(e)	Returns the seconds

Ans.: (1) - (b), (2) - (d), (3) - (e), (4) - (a)

A		B	
(1) setHours()	(a)	(a)	Sets the days of the month of a date object
(2) now()	(b)	(b)	Returns the year
(3) setDate()	(c)	(c)	Set the full year of a date object
(4) setFullYear()	(d)	(d)	Returns the number of milliseconds
	(e)	(e)	Sets the hours of a date object

Ans.: (1) - (e), (2) - (d), (3) - (a), (4) - (c)

A		B	
(1) setMinutes()	(a)	(a)	Sets the month of a date object
(2) setMonth()	(b)	(b)	Set a date to a specified number of milliseconds
(3) setSeconds()	(c)	(c)	Returns day of the week
(4) setTime()	(d)	(d)	Set the minutes of a date object
	(e)	(e)	Sets the seconds of a date object

Ans.: (1) - (d), (2) - (a), (3) - (e), (4) - (b)

(IX)

A	B
(1) MIN_VALUE	(a) Represent not a Number value
(2) MAX_VALUE	(b) Determines whether the given value is a Integer
(3) NaN	(c) Returns the largest minimum value
(4) isInteger()	(d) Converts string into Floating point number
	(e) Returns the largest maximum value

Ans : (1) - (c), (2) - (e), (3) - (a), (4) - (b)

(X)

A	B
(1) parseFloat()	(a) Used to create date and time values
(2) parseInt()	(b) Returns the string that represents a number with exact digits after a decimal point
(3) isFixed()	(c) Converts a given string into a floating point number
(4) Date object	(d) Converts the given string into integer number

Ans : (1) - (c), (2) - (d), (3) - (b), (4) - (a)

(IX)

A	B
(1) concat()	(a) Returns the value of the first element in an array that satisfies a test
(2) copyWithin()	(b) Search the array for an element and return its position
(3) find()	(c) Calls a function for each array element
(4) forEach()	(d) Joint two or more arrays and returns a copy of joined array
(5) indexOf()	(e) Copies array elements within the array, to and from specified positions.

Ans : (1) - (d), (2) - (e), (3) - (a), (4) - (c), (5) - (b)

(XIII)

A	B
(1) isArray()	(a) Adds a new elements to the end of an array, and returns the new length
(2) pop()	(b) Sorts the elements of an array
(3) Push()	(c) Reverse the order of the elements in an array
(4) reverse()	(d) Checks whether an object is an array
(5) sort()	(e) Removes the last element of an array, and returns the element

Ans : (1) - (d), (2) - (e), (3) - (a), (4) - (c), (5) - (b)

JavaScript Theory with Examples

3.2 Switch case and Looping Structures

switch Case :

The switch statement is used to perform different actions based on different conditions.

Syntax

```
switch(expression)
{
  case x:
    // code block
    break;
  case y:
    // code block
    break;
  default:
    // code block
}
```

Example : Program to print 4 different Greeting messages using switch case

Coding :

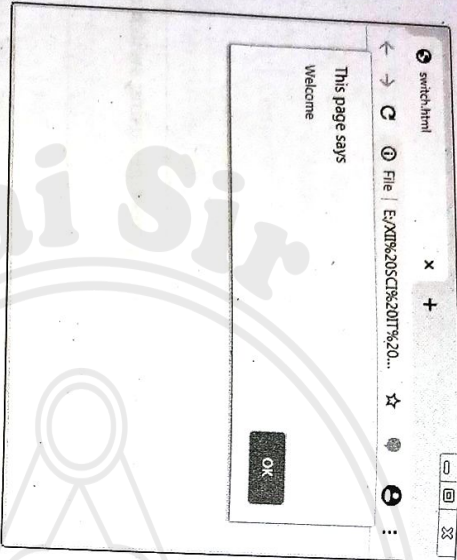
```
<html>
<script type="text/javascript">
var msg=2;
switch(msg)
{
  case 1:
    alert("Hello");
  break;
  case 2:
    alert("Welcome");
  break;
  case 3:
    alert("How r u");
  break;
```

```

case 4:
  alert("Take care Good bye");
break;
default:
  alert("Invalid choice");
}
</script>
</html>

```

Coding:



Looping statement : Loops can execute a block of code a number of times.

For Loop

Syntax

```

The for loop has the following syntax:
For (initialization; condition; iteration)
{
  code block to be executed
}

```

Example : Program to print numbers from 1 to 10 using for loop.

Coding:

```

<html>
<script type="text/javascript">

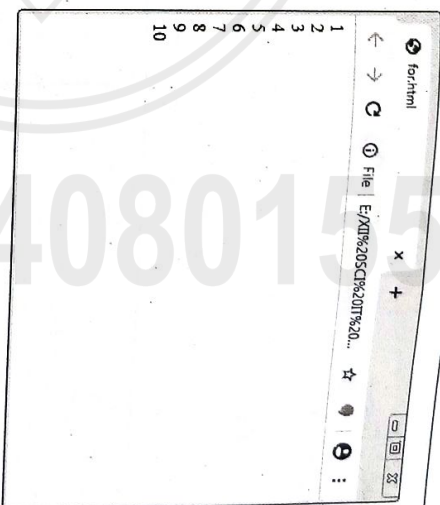
```

```

var i;
for(i=1;i<=10;i++)
{
  document.write(i+"<br>");
}
</script>
</html>

```

Output:



Note : "language" attribute of <script> tag is replace by "type" attribute in all programs as it is standardised.

While Loop : The while loop loops through a block of code as long as a specified condition is true.

Syntax :

```

Initialization;
while (condition)
{
  code block to be executed
}

```

Example : Program to check whether the entered number is Odd or Even.

```

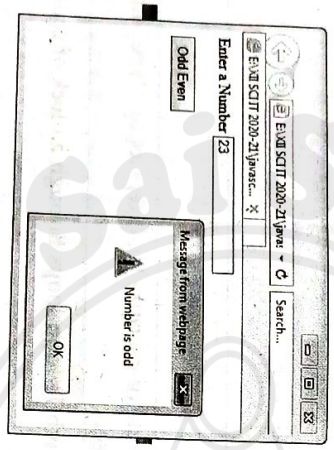
<html>
<body>
<form name="frm1">

```

```

Enter a Number
<input type="number" name="t1"><br><br>
<input type="button" name="b1" value="Odd Even" onClick="even()">
</form>
</body>
<script type="text/javascript">
function even()
{
var a;
a=frm1.t1.value;
if(a%2==0)
alert("Number is even");
else
alert("Number is odd");
}
</script>
</html>
    
```

Output :



➤ **Do while Loop :** The do/while loop is a variant of the while loop. This loop will execute the code block once, before checking if the condition is true, then it will repeat the loop as long as the condition is true.

Syntax :

```

Initialization:
do {
// code block to be executed
}
while (condition);
    
```

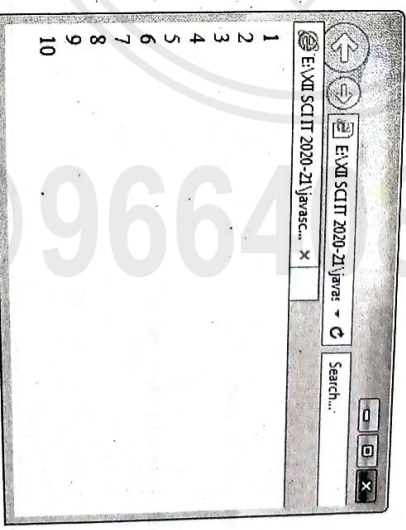
➤ **Example : Program to print numbers from 1 - 10 using do while loop.**

Coding :

```

<html>
<script type="text/javascript">
var i;
i=1;
do
{
document.write(i+"<br>");
i++;
}
while(i<=10);
</script>
</html>
    
```

Output :



➤ **Break Statement :** The break statement "jumps out" of a loop. Program to check whether the number is prime number or not.

Coding :

```

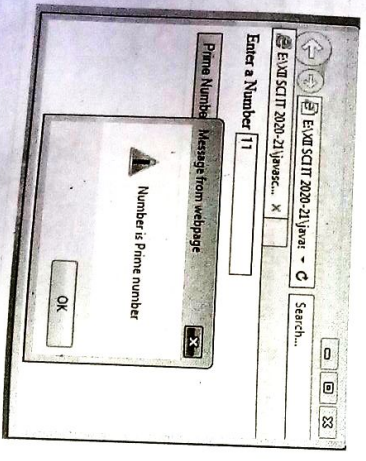
<html>
<body>
<form name="frm1">
Enter a Number
    
```



```

<input type="text" name="t1"><br><br>
<input type="button" name="b1" value="Prime Number"
onClick="prime()">
</form>
</body>
<script type="text/javascript">
function prime()
{
var i,a,p;
a=parseInt(form1.t1.value);
p=1;
for(i=2;i<a;i++)
{
if(a%i==0)
p=0;
break;
}
if(p==1)
alert("Number is Prime number");
else
alert("Number is not a Prime number");
}
</script>
</html>
    
```

Output :



3.3 Objects in JavaScript

JavaScript is an object based scripting language. A JavaScript object is an entity having properties and methods. Properties and methods of object's are accessed with "." operator. JavaScript supports two types of objects built-in objects and user defined objects.

DOM(Document Object Model) :

When a web page is loaded, the browser creates Document Object Model of the page.

The DOM is a W3C (World Wide Web Consortium) standard. "The W3C Document Object Model (DOM) is a platform and language-neutral interface that allows programs and scripts to dynamically access and update the content, structure, and style of a document."

Following are the predefined methods and properties for DOM object :

Property	Description
head	Returns the <head> element of the document
Title	Sets or returns title of the document.
URL	Returns full URL of the HTML document.
body, img	Returns <body>, elements respectively.
Method	Description
write()	Writes HTML expressions or JavaScript code to a document.
writeln()	Same as write(), but adds a newline character after each statement.
getElementById()	There are many ways of accessing form elements, of which the easiest is by getElementById() method. In which id property is used to find an element.

Example :

```

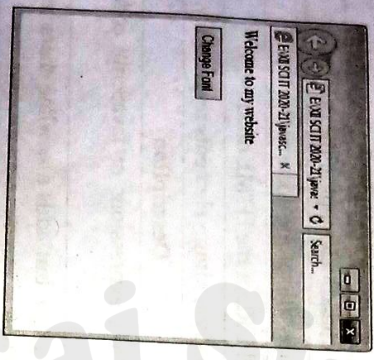
<html>
<script type="text/javascript">
function dom()
{
var s="<h2 style=colored>";
var t="Document Object Model";
var c="</h2>";
document.getElementById('para').
    
```

```

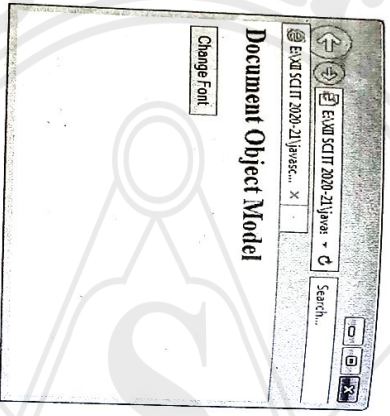
innerHTML=s+t+c;
)
</script>
<body>
<p id="para">Welcome to my website</p>
<form>
<input type="button" name="b1" value="Change Font" onClick="dom()">
</form>
</body>
</html>
    
```

Output :

Before Button click



After Button Click



Window Object : Window object is the parent object of all other objects. It represents an open window in a browser. An object of a window is created automatically by the browser. Following are the methods and properties of Window object.

Property	Description
name	Sets or returns the name of a window.
location	Returns the Location object for the window.
document	Returns the Document object for the window.
status	Sets or returns the text in the status bar of a window.
closed	Returns a Boolean value indicating whether a window has been closed or not.

Method	Description
alert()	Displays the alert box containing message
confirm()	Displays the confirm dialog box containing message with ok button.
prompt()	Displays a dialog box to get input from the user.
open()	Opens the new window.
close()	Closes the current window.
blur()	Removes focus from the current window.
focus()	Sets focus to the current window.
print()	Prints the content of current window.
setTimeout()	Calls a function or evaluates an expression after a specified number of milliseconds.

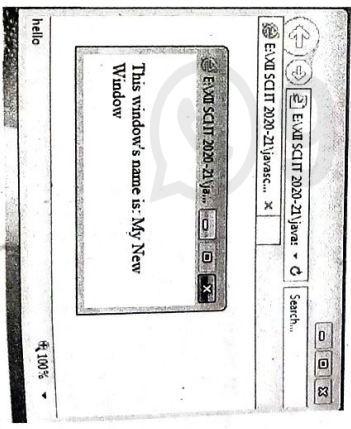
Program to make use of some properties of Window object

Coding :

```

<html>
<script type="text/javascript">
window.status="hello";
var a= window.open("", "My New Window", "width=200,height=100");
a.document.write("<br><br>This window's name is: " + a.name);
</script>
</html>
    
```

Output :

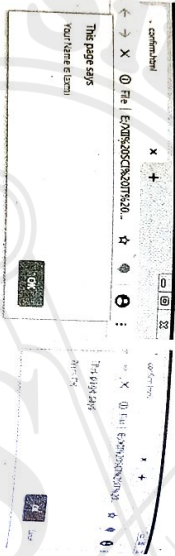
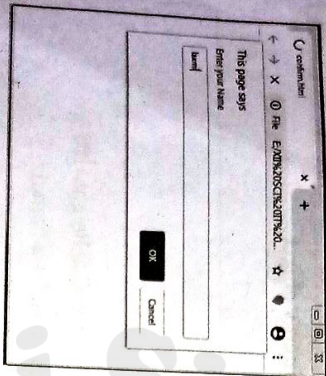


Advanced JavaScript
 Program to display alert, prompt and confirm methods of Window Object.

Coding :

```
<html>
<script type="text/javascript">
var n;
n=prompt("Enter your Name");
alert("Your Name is "+n);
confirm("Press OK");
</script>
</html>
```

Output :-



> Program to change background colour of the page in every 4 seconds, there should be atleast 4 distinct colours except default colour.

Coding :

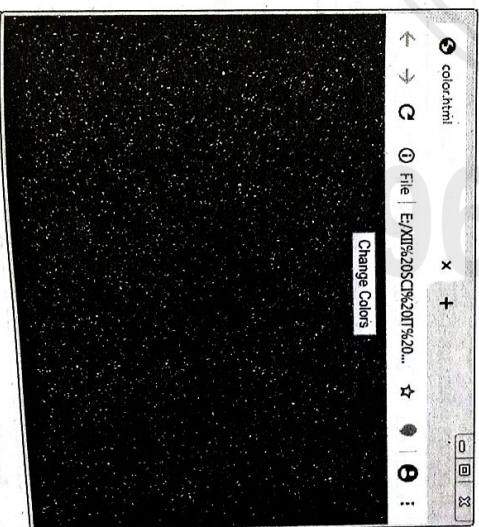
```
<html>
<script type="text/javascript">
function color1()
{
document.bgColor="red";
window.setTimeout("color2()",4000);
}
function color2()
{
document.bgColor="green";
window.setTimeout("color3()",4000);
```

Advanced JavaScript

```
function color3()
{
document.bgColor="blue";
window.setTimeout("color4()",4000);
}
function color4()
{
document.bgColor="yellow";
window.setTimeout("color1()",4000);
}
```

```
</script>
<body>
<form name="frm1">
<center>
<input type="button" name="b1" value="Change Colors"
onMouseOver="color1()">
</center>
</form>
</body>
</html>
```

Output :



Program to make use of open, close and print methods of Window object.

Coding :

```
<html>
<script type="text/javascript">
window.open("http://www.gmail.com"); // will open gmail website
window.print();
window.close(); // will close the current window
</script>
</html>
```

3.4 JavaScript Events

Events are the actions done by user that occurs on the web page. Following are some of the events used with form objects.

Event handler	Description
onblur	It occurs when user leaves field or losses focus of an element.
onfocus	It occurs when an element gets focus.
onchange	It occurs when user changes content of an element or selects dropdown value. E.g. for textbox, password, select box, textarea etc.
onselect	It occurs when user selects some text of an element.
onsubmit	It occurs when user clicks submit button.
onreset	It occurs when user clicks reset button.
onload	It occurs when page/image has been loaded.
onunload	It occurs when document/page has been unloaded or closes.

3.5 JavaScript built-in Objects

JavaScript has several built-in objects. These objects provide different properties and methods that are useful while creating web pages.

String Object :

String is used to store characters of text with single or double quotes. It is used to store and manipulate text.

Property	Description
Length	Returns the number of characters in a string

Program to make the use of string object.

Coding :

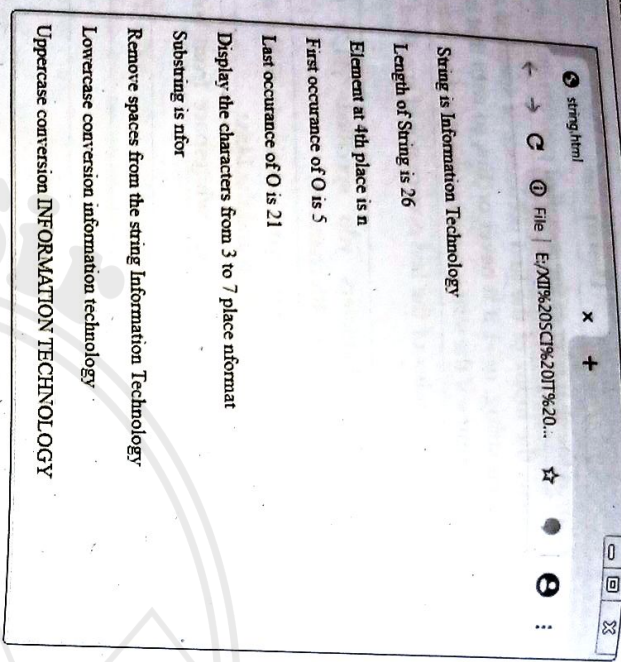
Method	Description
charAt()	Returns the character at the specified position (in Number).
indexOf()	Returns the index of the first occurrence of specified character in given string, or -1 if it never occurs, so with that index you can determine if the string contains the specified character.
lastIndexOf()	Returns the index of the last occurrence of specified character in given string.
substr()	Returns the characters you specified. (14,7) returns 7 characters, from the 14th character.
substring()	Returns the characters you specified: (7,14) returns all characters between the 7th and the 14th.
trim()	The trim() method removes whitespace from both sides of a String
toLowerCase()	Converts a string to lower case
toUpperCase()	Converts a string to upper case

Example : Program to make the use of string object.

Coding :

```
<html>
<script type="text/javascript">
var n=" Information Technology ";
document.write("<br><br>String is "+n);
document.write("<br><br>Length of String is "+n.length);
document.write("<br><br>Element at 4th place is "+n.charAt(3));
document.write("<br><br>First occurrence of O is "+n.indexOf('o'));
document.write("<br><br>Last occurrence of O is "+n.lastIndexOf('o'));
document.write("<br><br>Display the characters from 3 to 7 place "+n.substr(3,7));
document.write("<br><br>Substring is "+n.substring(3,7));
document.write("<br><br>Remove spaces from the string "+n.trim());
document.write("<br><br>Lowercase conversion "+n.toLowerCase());
document.write("<br><br>Uppercase conversion "+n.toUpperCase());
</script>
</html>
```

Output :



Math Object :

The math object includes mathematical constants and functions. Following table consists list of Math objects.

Method	Description
abs()	Returns the absolute value of a number.
cbrt(x)	Returns the cube root of a number.
ceil(x)	Returns the next integer greater than or equal to a given number (rounding up).
floor(x)	Returns the next integer less than or equal to a given number (rounding down).
max(x, y, ...)	Returns the highest-valued number in a list of numbers.
min(x, y, ...)	Returns the lowest-valued number in a list of numbers.
pow(x, y)	Returns the base to the exponent power, that is, x^y .
random(x)	Returns a random number between 0 and 1 (including 0, but not 1).
sqrt(x)	Returns the square root of a number.

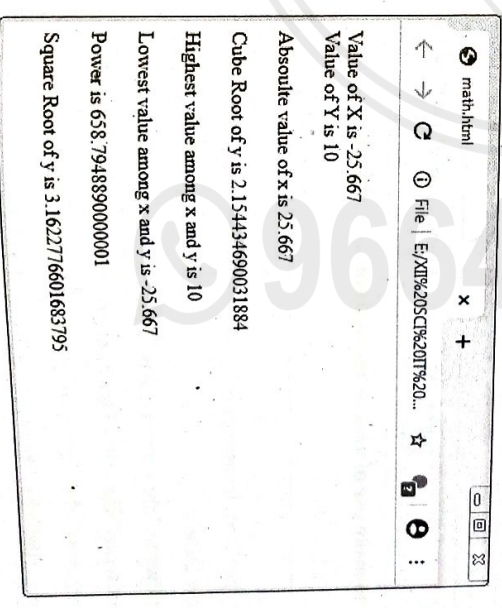
Program to make use of Math Object

Coding :

```

<html>
<script type="text/javascript">
var x=-25.667;
var y=10;
var z=2;
document.write("<br> Value of X is "+x);
document.write("<br> Value of Y is "+y);
document.write("<br><br> Absoulte value of x is "+Math.abs(x));
document.write("<br><br> Cube Root of y is "+Math.cbrt(y));
document.write("<br><br> Highest value among x and y is "+Math.max(x,y));
document.write("<br><br> Lowest value among x and y is "+Math.min(x,y));
document.write("<br><br> Power is "+Math.pow(x,z));
document.write("<br><br> Square Root of y is "+Math.sqrt(y));
</script>
</html>
    
```

Output :



Date Object:

Date object is used to create date and time values. It is created using **new** keyword

Method	Description
getDate()	Returns the day of the month (from 1-31)
getDay()	Returns the day of the week (from 0-6)
getFullYear()	Returns the year (four digits).
getHours()	Returns the hour (from 0-23).
getMinutes()	Returns the minutes (from 0-59).
getMonth()	Returns the month (from 0-11).
getSeconds()	Returns the seconds (from 0-59).
getTime()	Returns the number of milliseconds since midnight Jan 1, 1970.
now()	Returns the number of milliseconds since midnight Jan 1, 1970.
setDate()	Sets the day of the month of a date object.
setFullYear()	Sets the full year of a date object.
setHours()	Sets the hours of a date object.
setMinutes()	Sets the minutes of a date object.
setMonth()	Sets the month of a date object.
setSeconds()	Sets the seconds of a date object.
setTime()	Sets a date to a specified number of milliseconds after/before Jan 1, 1970.

Program to make use of various methods of date object.

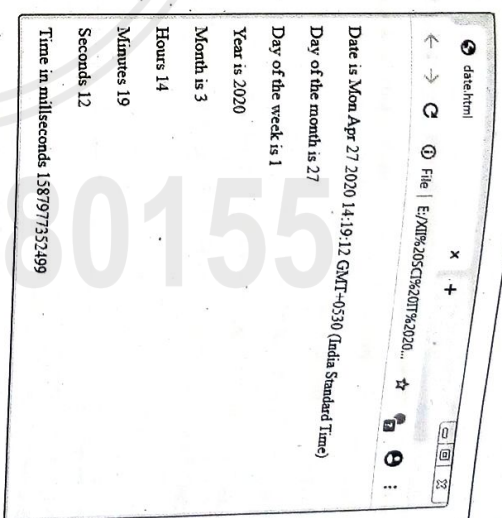
Coding:

```
<html>
<script type="text/javascript">
var d=new Date();
document.write("<br><br> Date is "+d);
document.write("<br><br> Day of the month is "+d.getDate());
document.write("<br><br> Day of the week is "+d.getDay());
document.write("<br><br> Year is "+d.getFullYear());
document.write("<br><br> Month is "+d.getMonth());
document.write("<br><br> Hours "+d.getHours());
document.write("<br><br> Minutes "+d.getMinutes());
document.write("<br><br> Seconds "+d.getSeconds());
```

document.write("

 Time in milliseconds "+d.getTime());

Output:



Number Object:

It helps in working with numbers. Property and Methods of number object are :

Property	Description
MIN_VALUE	Returns the largest minimum value.
MAX_VALUE	Returns the largest maximum value.
NaN	It represents 'Not a Number' value.
Method	Description
isInteger()	It determines whether the given value is a Integer
parseFloat()	It converts the given string into a floating point number.
parseInt()	It converts the given string into a integer number.
toFixed()	It returns the string that represents a number with exact digits after a decimal point.

Program to make the use of Number property and methods.

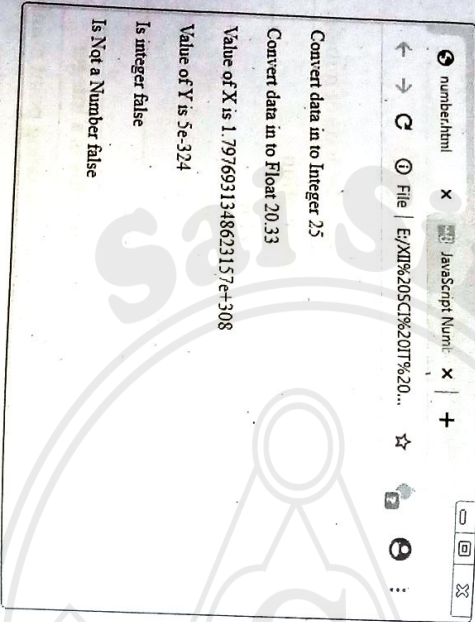
Coding:

```
<html>
<script type="text/javascript">
var a,b;
```

```

var x=Number.MAX_VALUE;
var y=Number.MIN_VALUE;
a=25.36;
b=" 20.33 ";
document.write("<br><br> Convert data in to Integer "+parseInt(a));
document.write("<br><br> Convert data in to Float "+parseFloat(b));
document.write("<br><br> Value of X is "+x);
document.write("<br><br> Value of Y is "+y);
document.write("<br><br>Is integer "+Number.isInteger(b));
document.write("<br><br>Is Not a Number "+Number.isNaN(b));
</script>
</html>
    
```

Output :



Array Object :

An array is an object that can store a collection of items. Arrays are used to store multiple values in single variable. Array is a special variable which can hold more than one values at a time. Property and Methods of array object are :

Property	Description
Index	The property represents the zero-based index of the match in the string
Length	Reflect number of elements in array.

Method	Description
concat()	Joins two or more arrays, and returns a copy of the joined arrays
copyWithin()	Copies array elements within the array, to and from specified positions.
find()	Returns the value of the first element in an array that satisfies a test in testing.
forEach()	Calls a function for each array element.
indexOf()	Search the array for an element and returns its position.
isArray()	Checks whether an object is an array.
pop()	Removes the last element of an array, and returns that element.
push()	Adds new elements to the end of an array, and returns the new length.
reverse()	Reverses the order of the elements in an array.
sort()	Sorts the elements of an array.

Program to make use of methods and property of Array Objects.

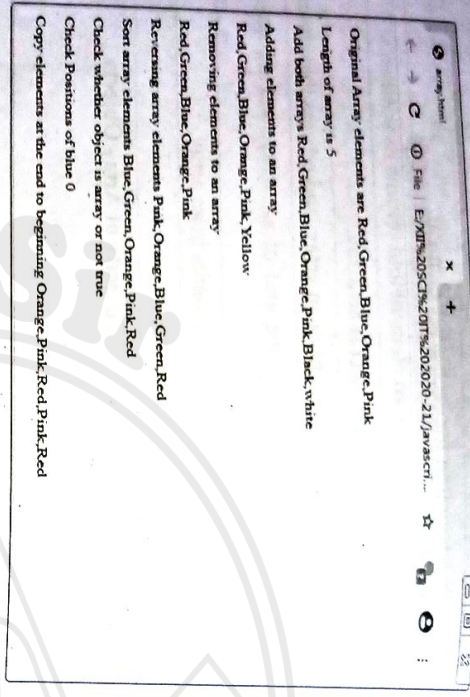
Coding :

```

<html>
<script type="text/javascript">
var color=["Red","Green","Blue","Orange","Pink"];
var color1=["Black","white"];
document.write("<br><br> Original Array elements are "+color);
document.write("<br><br> Length of array is "+color.length);
document.write("<br><br> Add both arrays "+color.concat(color1));
document.write("<br><br> Adding elements to an array ");
color.push("Yellow");
document.write("<br><br>");
document.write(color);
document.write("<br><br>Removing elements to an array ");
color.pop();
document.write("<br><br>"+color);
document.write("<br><br>Reversing array elements "+color.reverse());
document.write("<br><br> Sort array elements "+color.sort());
document.write("<br><br>Check whether object is array or not "+Array.isArray(color));
    
```

```
document.write("<br><br>Check Positions of blue "+color.indexOF("Blue"));
document.write("<br><br>Copy elements at the end to beginning
"+color.copyWithin(0,2));
</script>
</html>
```

Output :



Answer the Following

3.1 Introduction

1. Explain the features of JavaScript.

Ans. :

- JavaScript is light weight scripting language.
- No need of special software to run JavaScript Programs
- JavaScript is object oriented scripting language
- It can handle date and time very effectively.
- It is case sensitive language.

2. Explain difference between Client Side and Server Side Scripting.

Ans. : Client Side Scripting :

- (a) It is used at frontend which users can see from the browser.
- (b) Client side scripting does not need any server interaction.
- (c) Client Side scripting language involves languages such as HTML5, JavaScript etc.
- (d) Client side scripting is used for validation purpose.

Server Side Scripting :

- (a) It is used at the backend, where the source code is not visible or hidden at the client browser.
- (b) When a server side script is processed it communicates to the server.
- (c) Server side scripting language involves languages such as PHP, ASP.NET, Python etc.
- (d) Server side scripting is useful in customizing the web pages and implements the dynamic changes in the web site.

3.2 Switch case and Looping Structures

3. Explain Switch case.

Ans. :

JavaScript has decision control statement known as switch. The switch statement test the value of given expression against the list of case values and when the match is found a block of statement associated with that case is executed.

Syntax of switch case is :

```
switch(expression)
{
  case x:
    // code block
    break;
  case y:
    // code block
    break;
  default:
    // code block
}
```

4. Explain For loop with syntax.

Ans. :

The JavaScript for loop iterates the elements for the fixed number of times. It should be used if number of iteration is known. The syntax of for loop is given below.

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


5. Explain while loop with syntax.
 Ans.: The JavaScript while loop iterates the elements for the infinite number of times. It should be used if number of iteration is not known. The syntax of while loop is given below.

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

6. Explain Do while loop with syntax.
 Ans.: The JavaScript do while loop iterates the elements for the infinite number of times like while loop. But, code is executed at least once whether condition is true or false. The syntax of do while loop is given below.

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

7. Explain Break and Continue statement in JavaScript.

- Ans.:
 1. **Break statement:** The break statement is used to jump out of a loop. It breaks the loop and continues executing the code after the loop.
 2. **Continue statement:** The continue statement "jumps over" one iteration in the loop. It breaks iteration in the loop and continues executing the next iteration in the loop.

3.3 Objects in JavaScript

8. Explain DOM (Document Object Model).

Ans.: Every web page resides inside a browser window which can be considered as an object. A Document object represents the HTML document that is displayed in that window. The Document object has various properties that refer to other objects which allow access to and modification of document content. The way document content is accessed and modified is called the Document Object Model, or DOM.

9. Explain Methods and Property of DOM.

Property	Description
head	Returns the <head> element of the document
Title	Sets or returns title of the document.
URL	Returns full URL of the HTML document. body, img Returns <body>, elements respectively.

Method	Description
write()	Writes HTML expressions or JavaScript code to a document.
writeln()	Same as write(), but adds a newline character after each statement.
getElementById()	There are many ways of accessing form elements, of which the easiest is by getElementById() method. In which id property is used to find an element.

10. Explain alert, prompt and confirm methods of Window Object.

Method	Description
alert()	Displays the alert box containing message with ok button.
confirm()	Displays the confirm dialog box containing message with ok and cancel button.
prompt()	Displays a dialog box to get input from the user.

3.4 JavaScript Events

11. Explain onblur, onsubmit, onload, onfocus event handlers in JavaScript.

Event handler	Description
Onblur	It occurs when user leaves field or loses focus of an element.
Onfocus	It occurs when an element gets focus.
Onsubmit	It occurs when user clicks submit button.
onload	It occurs when page/image has been loaded.

3.5 JavaScript built-in Objects

12. Explain methods of String object (any 5) in JavaScript.

Method	Description
charAt()	Returns the character at the specified position (in Number).
indexOf()	Returns the index of the first occurrence of specified character in given string, or -1 if it never occurs, so with that index you can determine if the string contains the specified character.
substring()	Returns the characters you specified: (7,14) returns all characters between the 7th and the 14th.
trim()	The trim() method removes whitespace from both sides of a string
toLowerCase()	Converts a string to lower case

Practice JavaScript Programs

1. Program to print Addition, Subtraction, Multiplication and Division of two numbers. Accept numbers from user.

Coding :

```
<html>
<script type="text/javascript">
var a,b,res;
a=parselnt(prompt("Enter First Number"));
b=parselnt(prompt("Enter Second Number"));
res=a+b;
document.write("<br><br>Addition is "+res);
res=a-b;
document.write("<br><br>Subtraction is "+res);
res=a*b;
document.write("<br><br>Multiplication is "+res);
res=a/b;
document.write("<br><br>Division is "+res);
</script>
</html>
```

2. Program to print Addition, Subtraction, Multiplication and Division of two numbers using switch case. Accept numbers from user.

Coding :

```
<html>
<body>
<form name="frm1">
Enter First Number
<input type="text" name="t1"><br><br>
Enter Second Number
<input type="text" name="t2"><br><br>
Enter your choice between 1 - 4
<input type="text" name="t3"><br><br>
<input type="button" name="b1" value="Check" onClick="res()">
</form>
```

13. Explain methods of Math object (any 5) in JavaScript.

Ans. : **Description**

Method	Description
abs(x)	Returns the absolute value of a number.
cbt(x)	Returns the cube root of a number.
ceil(x)	Returns the next integer greater than or equal to a given number (rounding up).
max(x, y, ...)	Returns the highest-valued number in a list of numbers.
pow(x, y)	Returns the base to the exponent power, that is, xy.

14. Explain methods of Date object (any 5) in JavaScript.

Ans. : **Description**

Method	Description
getDate()	Returns the day of the month (from 1-31)
getSeconds()	Returns the seconds (from 0-59).
setMinutes()	Set the minutes of a date object.
setMonth()	Sets the month of a date object.
setTime()	Sets a date to a specified number of milliseconds after/before Jan 1, 1970.

15. Explain methods of Number object (any 4) in JavaScript.

Ans. :

Description

Method	Description
isInteger()	It determines whether the given value is a Integer
parseFloat()	It converts the given string into a floating point number.
parseInt()	It converts the given string into a integer number.
toFixed()	It returns the string that represents a number with exact digits after a decimal point.

16. Explain methods of Array object (any 5) in JavaScript.

Ans. :

Description

Method	Description
concat()	Joins two or more arrays, and returns a copy of the joined arrays
indexOf()	Search the array for an element and returns its position.
pop()	Removes the last element of an array, and returns that element.
push()	Adds new elements to the end of an array, and returns the new length.
reverse()	Reverses the order of the elements in an array.

```

</body>
<script type="text/javascript">
function res()
{
var a,b,c,r;
a=parseFloat(frm1.t1.value);
b=parseFloat(frm1.f2.value);
c=parseFloat(frm1.f3.value);
switch(c)
{
case 1:
r=a+b;
alert("Addition is "+r);
break;
case 2:
r=a-b;
alert("Substraction is "+r);
break;
case 3:
r=a*b;
alert("Multiplication is "+r);
break;
case 4:
r=a/b;
alert("Division is "+r);
break;
default:
alert("Invalid choice");
}
}
</script>
</html>

```

3. Program to display numbers from 1 to 50.

Coding :

```

<html>
<script type="text/javascript">
var i;
document.write("<br>Numbers from 1-50 are <br>");
for(i=1;i<=50;i++)
{
document.write("\t"+i);
}
</script>
</html>

```

4. Program to display Even numbers from 25 to 50.

Coding :

```

<html>
<script type="text/javascript">
var i;
document.write("<br>Even Numbers from 25-50 are <br>");
for(i=26;i<=50;i=i+2)
{
document.write("\t"+i);
}
</script>
</html>

```

5. Program to print Multiplication table of the entered number.

Coding :

```

<html>
<script type="text/javascript">
var n,i,m;
n=prompt("Enter a Number");
document.write("<br>Multiplication Table is <br>");
for(i=1;i<=10;i++)
{

```

```

m=n*i;
document.write(n+" x "+i+" = "+m+"<br><br>");
|
</script>
</html>
    
```

6. Program to print factorial of a number, accept number from the user.

Coding :

```

<html>
<script type="text/javascript">
var n,i,f=1;
n=prompt("Enter a Number");
for(i=n;i>=1;i--)
|
f=f*i;
|
document.write("<br>Factorial is "+f);
</script>
</html>
    
```

Exercise

Fill in the blanks

- _____ script resides on server computer.
Ans. : Server Side
- _____ statement is used to jump out of loop.
Ans. : Break
- _____ defines logical structure of document.
Ans. : DOM (Document Object Model)
- _____ property of window object returns Boolean value in- dictating whether window is closed or not.
Ans. : closed
- _____ event occurs when an element loses its focus.
Ans. : onblur

State whether given statement is true or false.
JavaScript is case sensitive language.

1. True
Ans. : True
2. Math.ceil() function is used to return the nearest integer less than or equal to given number.
Ans. : False
3. MAX_VALUE property of number object returns smallest possible value.
Ans. : False
4. getDate() method of Date object returns month in number.
Ans. : False
5. onkeydown event occurs when user moves mouse pointer.
Ans. : False

Multiple choice questions. Select one correct answer.

1. JavaScript is _____ language.
(a) Compiled (b) Interpreted
(c) Both a and b (d) None of the above
Ans. : (c)
2. Select correct method name of String object _____.
(a) charAt() (b) characterAt()
(c) valueAt() (d) lengthAt()
Ans. : (a)
3. _____ method displays message box with Ok and Cancel button.
(a) Confirm() (b) Alert()
(c) both a and b (d) None of these
Ans. : (a)
4. We can declare all types of variables using keyword _____.
(a) var (b) dim (c) variable (d) declare
Ans. : (a)
5. Trace output of following JavaScript code.
var str="Information Technology";
document.write(str.lastIndexOf("o"));
(a) 18 (b) 19 (c) 20 (d) 21
Ans. : (c)

Multiple choice questions. Select two correct answer.

1. Valid two methods of Date object are _____ and _____.
- (a) setTime()
(b) getValidTime()
(c) getTime()
(d) setValidTime()

Ans.: (a, c)

2. Properties of document object are _____ and _____.
- (a) URL
(b) title
(c) name
(d) status

Ans.: (a, b)

3. _____ and _____ are event / event handler used with text object in JavaScript.
- (a) onBlurr
(b) onMove
(c) onFocus
(d) onAction

Ans.: (a, c)

Multiple choice questions. Select three correct answers.

1. Select three correct methods of window object _____.
- (a) write()
(b) alert()
(c) writeln()
(d) close()
(e) open()
(f) charAt()

Ans.: (b, d, e)

2. JavaScript features are _____ and _____.
- (a) supports event based facilities
(b) is platform dependent language
(c) case insensitive scripting language
(d) provide inbuilt objects
(e) can handle date and time effectively
(f) requires special software to run

Ans.: (b, c, e)

3. Inbuilt objects in JavaScript are _____ and _____.
- (a) Time
(b) Date
(c) Inheritance
(d) Array
(e) Number
(f) function

Ans.: (b, d, e)

Explain the following.

1. What are similarities and differences between client side scripting and server side scripting.
- Ans.: Refer answer the following Q. 2.3.1.
2. Briefly explain features of JavaScript.
- Ans.: Refer answer the following Q. 1.3.1.
3. Explain switch case conditional statement in JavaScript with example.
- Ans.: Refer answer the following Q. 1.3.2.

Write event driven JavaScript program for the following.

1. Display Addition, subtraction, multiplication, division of two numbers, which were accepted from user.

Coding :

```
<html>
<script type="text/javascript">
var a,b,res;
a=parseln(prompt("Enter First Number"));
b=parseln(prompt("Enter Second Number"));
res=a+b;
document.write("<br><br>Addition is "+res);
res=a-b;
document.write("<br><br>Subtraction is "+res);
res=a*b;
document.write("<br><br>Multiplication is "+res);
res=a/b;
document.write("<br><br>Division is "+res);
</script>
</html>
```

2. Display number sequence from 100 to 150 in following format
(100 101 102.....150)

Coding :

```
<html>
<script type="text/javascript">
var i;
document.write("<br>Numbers from 100-150 are <br>");
for(i=100;i<=150;i++)
{
document.write("\t"+i);
}
</script>
</html>
```

3. Find and display factorial of given number.

Coding :

```
<html>
<script type="text/javascript">
var n=4,i,f=1;
```

```

for(i=n;i>=1;i--)
{
f=f*i;
}
document.write("<br>Factorial of 4 is "+f);
</script>
</html>
    
```

4. Accept any string from user and count and display number of vowels occurs in it

Coding :

```

<html>
<script type="text/javascript">
var n,i,ch,cnt=0;
n=prompt("Enter a String");
for(i=0;i<n.length;i++)
{
ch=n.charAt(i);
if(ch=='a' || ch=='A' || ch=='e' || ch=='E' || ch=='i' || ch=='I' ||
ch=='o' || ch=='O' || ch=='u' || ch=='U')
{
cnt=cnt+1;
}
}
document.write("Number od vowels in string are "+cnt);
</script>
</html>
    
```

Match the following

A	B
1. ceil()	(a) Writes HTML expression or JavaScript code to a document.
2. floor()	(b) Sets focus to current window.
3. write()	(c) Removes white spaces from both sides of string.
4. focus()	(d) Returns next integer greater than or equal to given number.
5. trim()	(e) Returns the next integer less than or equal to given number.

Ans.: 1.- d, 2.- e, 3.- a, 4.- b, 5.- c

Chapter at a Glance

4.1 IoT (Internet of Things)

Network of the physical devices and other items embedded with electronics, software, sensors, actuators and connectivity

Advantages

- Efficient resource utilization
- Minimum human effort
- Time saving
- Enhance data collection
- Improve, security

Disadvantages

- Privacy
- Complexity

Applications

- Smart Lighting
- Smart Thermostats
- smart locks
- Smart security camera
- Smart traffic signal , etc

4.2 Cloud computing

Is model for enabling, convenient on-demand network access to a shared pool of computing resources

Model of Cloud Computing

IaaS

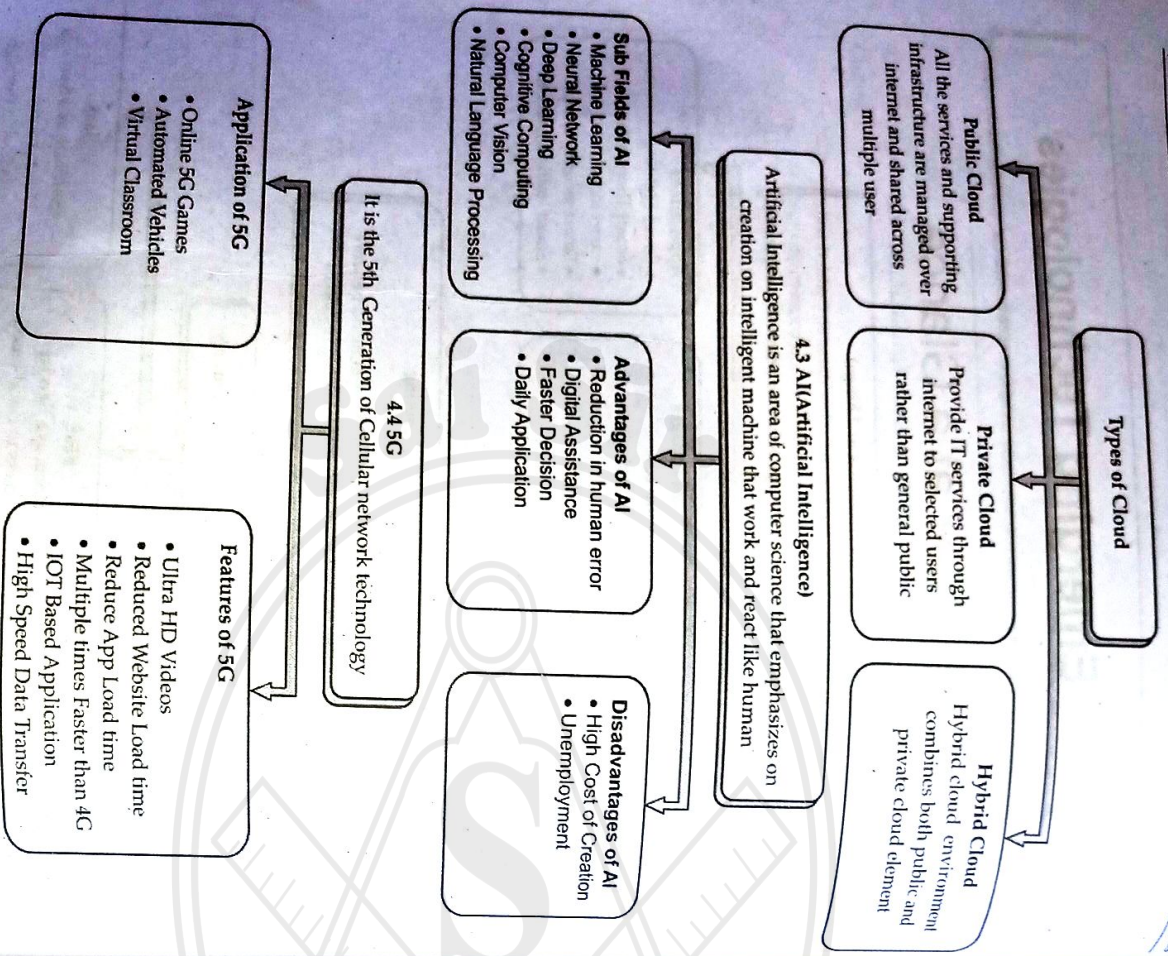
(Infrastructure as a Service)
Gives user access to storage, networking, servers and other computing resources via cloud

PaaS

(Platform as a Service)
Offers access to cloud-based environment in which user can develop, manage and deliver application

SaaS

(Software as a Service)
Delivers software and application through the internet



Fill in the Blanks

4.1 IoT (Internet of Things)

1. IoT stands for _____
Ans.: Internet of Things
2. The internet of things is the _____ of physical devices, vehicles, home appliances etc.
Ans.: network
3. IoT helps to _____ human efforts.
Ans.: reduce
4. _____ is the primary factor in automation which can save through IoT platform.
Ans.: Time
5. IoT devices can collect data from _____
Ans.: Environment
6. The data collected using IoT devices can be used to take _____
Ans.: decisions
7. _____ based security systems can make home or office environment secure.
Ans.: IoT
8. _____ Allows users to schedule, monitor and remotely control home temperatures.
Ans.: Smart thermostats
9. Illumination of light is controlled on the basis of day light is example of _____
Ans.: Smart Lighting
10. Smart Home is the application of _____ Technology.
Ans.: IoT

4.2 Cloud Computing

11. SaaS stands for _____
Ans.: Software as a Service
12. IaaS Stands for _____
Ans.: Infrastructure as a Service
13. PaaS Stands for _____
Ans.: Platform as a Service
14. _____ gives user access to storage, networking, servers and other computing resources via the cloud.
Ans.: IaaS

15. Instead of purchasing hardware outright, users pay for _____ on demand.

Ans.: IaaS
Amazon Web Services (AWS) is an example of _____.

16. Amazon Web Services (AWS) is an example of _____.

Ans.: IaaS
IaaS is Scalable depending on processing and storage needs.

17. In IaaS _____ is Scalable depending on processing and storage needs.

Ans.: Infrastructure
IaaS provides automated and scalable _____ that provide a high degree of control and flexibility for the user.

18. IaaS provides automated and scalable _____ that provide a high degree of control and flexibility for the user.

Ans.: Environment
PaaS provide a _____ with tools to test, develop and host application in the same environment.

19. PaaS provide a _____ with tools to test, develop and host application in the same environment.

Ans.: Platform
PaaS provide a platform with tools to test, develop and host application in the same environment.

20. _____ provide a platform with tools to test, develop and host application in the same environment.

Ans.: PaaS
PaaS enables organization to focus on development without having a worry about underlying infrastructure.

21. _____ enables organization to focus on development without having a worry about underlying infrastructure.

Ans.: Software
In _____ user do not install application on their local devices.

22. In _____ user do not install application on their local devices.

Ans.: SaaS
In SaaS the application reside on a remote cloud network accessed through the web or an _____.

23. In SaaS the application reside on a remote cloud network accessed through the web or an _____.

Ans.: API
In SaaS the application reside on a remote cloud network accessed through the _____ or an API.

24. In SaaS the application reside on a remote cloud network accessed through the _____ or an API.

Ans.: web
_____ vendors provide users with software and application via a subscription model.

25. _____ vendors provide users with software and application via a subscription model.

Ans.: SaaS
Users do not have to manage, install or upgrade software, _____ manage this.

26. Users do not have to manage, install or upgrade software, _____ manage this.

Ans.: SaaS providers
_____ is secure on cloud.

27. _____ is secure on cloud.

Ans.: Data
GitHub is an example of _____.

30. In _____ all the services and supporting infrastructure are shared across multiple users.

Ans.: public cloud
_____ is more efficient and inexpensive than other cloud solution.

31. _____ is more efficient and inexpensive than other cloud solution.

Ans.: public cloud
In _____ cloud all data is protected behind the firewall.

32. In _____ cloud all data is protected behind the firewall.

Ans.: Private
_____ solutions are preferred for enhanced security and privacy by the users.

33. _____ solutions are preferred for enhanced security and privacy by the users.

Ans.: Private cloud
_____ cloud environment combines both Public and Private element.

34. _____ cloud environment combines both Public and Private element.

Ans.: Hybrid
_____ cloud allows greater flexibility.

35. _____ cloud allows greater flexibility.

Ans.: Hybrid
Hybrid cloud allow greater _____.

36. Hybrid cloud allow greater _____.

Ans.: Flexibility
_____ computing solutions are inexpensive than the actual overall infrastructure set up for the I.T services.

37. _____ computing solutions are inexpensive than the actual overall infrastructure set up for the I.T services.

Ans.: Cloud
Cloud computing solutions are _____ than the actual overall infrastructure set up for the I.T services.

38. Cloud computing solutions are _____ than the actual overall infrastructure set up for the I.T services.

Ans.: Inexpensive
_____ computing solution are more reliable than in-house I.T infrastructure.

39. _____ computing solution are more reliable than in-house I.T infrastructure.

Ans.: Cloud
_____ computing solutions are more portable

40. _____ computing solutions are more portable

Ans.: Cloud

4.3 AI (Artificial Intelligence)

41. AI stands for _____

Ans.: Artificial Intelligence
_____ is an area of computer science that emphasizes on creation of intelligent machines that work and react like human.

42. _____ is an area of computer science that emphasizes on creation of intelligent machines that work and react like human.

Ans.: Artificial intelligence
Machine learning is a sub field of _____.

43. Machine learning is a sub field of _____.

Ans.: Artificial Intelligence
Deep Learning is a sub field of _____.

44. Deep Learning is a sub field of _____.

Ans.: Artificial Intelligence
_____ imitate the brain's array of interconnected neurons.

45. _____ imitate the brain's array of interconnected neurons.

Ans.: Neural networks

46. _____ is used for application like image and speech recognition.

Ans.: Deep Learning

47. _____ computing is about creating a "natural human-like interaction", including using the abilities to interpret speech and respond to it.

Ans.: Cognitive

48. _____ employs pattern recognition and deep learning to understand content of pictures and videos.

Ans.: Computer Vision

49. _____ involves analyzing and understanding human language and responding it.

Ans.: Natural Language Processing

50. Artificial Intelligence helps to _____ human errors.

Ans.: reduce

51. Chatbot are example of _____.

Ans.: Digital Assistance

4.4 5G

52. 5G Stands for _____.

Ans.: fifth generation

53. 5G is the next generation of _____ communication.

Ans.: wireless

54. _____ is the next generation of wireless communication.

Ans.: 5G

55. LTE stand for _____.

Ans.: Long Term Evolution

56. 5G technologies may use a variety of _____.

Ans.: Spectrum Bands

57. _____ is the faster method of data transfer.

Ans.: 5G

True or False

4.1 IoT(Internet of Things)

1. The internet of thing is the network of physical devices only.

Ans.: False

2. With the help of IoT devices can communicate and interact over the internet, and they can be remotely monitored and controlled.

Ans.: True

3. IoT helps to minimize the human efforts.

Ans.: True

4. Time is the primary factors in automation which can be saved through IoT platforms.

Ans.: True

5. The data collected using IoT devices is used for taking decisions.

Ans.: True

6. The designing, developing, maintaining and enabling the large technology to IoT system is easy.

Ans.: False

4.2 Cloud Computing

7. IaaS provide automated and static environment.

Ans.: False

8. In IaaS enterprises saves the cost of buying and maintaining their own hardware.

Ans.: True

9. PaaS provides a platform tools to test, develop and host application in the same environment.

Ans.: True

10. PaaS Do not provide collaborative work if teams works remotely.

Ans.: False

11. In SaaS a service provider delivers software and application through the internet.

Ans.: True

12. PaaS vendors provides users with software and application via a subscription model.

Ans.: False

13. SaaS provider manage, install and update the software.

Ans.: True

14. Public cloud are more efficient and inexpensive than private and hybrid cloud.

Ans.: True

15. In Private cloud all the services and supporting infrastructure is shared among across the multiple users.

Ans.: False

16. Private cloud is accessible to selected public rather than general public.

Ans.: True

17. Hybrid cloud allows greater flexibility.

Ans.: True

18. Cloud computing solution are inexpensive than the actual overall infrastructure.

Ans.: True

19. Cloud computing solution are not reliable than In-house I.T infrastructure.

Ans.: False

20. Cloud computing solutions are more portable.

Ans.: True

4.3 AI(Artificial Intelligence)

21. Artificial intelligence is an area of computer science that emphasizes on creation of intelligent machines that work and reach like human.

Ans.: True

22. Computer is programmed properly with artificial intelligence gives 100% accuracy.

Ans.: True

23. Chatbot are example of Digital Assistance

Ans.: True

24. AI helps to take faster decision as compare to humans.

Ans.: True

25. AI creates Unemployment.

Ans.: True

26. Creation cost is high in AI.

Ans.: True

4.4 5G.t

27. 4G is the next generation of wireless communication

Ans.: False

28. 5G technologies may use variety of spectrum brands.

Ans.: True

29. 5G is the fastest method of a data transfer.

Ans.: True

MCO (One Correct Answers)

4.1 IoT(Internet of Things)

1. The internet of things is the _____ of physical devices , vehicles , home appliances etc.

- (a) collection
- (c) relation

- (b) network
- (d) group

Ans.: (a) network

IoT helps to _____ human efforts.

- (a) remove
- (b) reduce
- (c) increase
- (d) stop

Ans.: (b) reduce

IoT device can collect data from _____.

- (a) environment
- (b) internet
- (c) books
- (d) documents

Ans.: (a) environment

4.2 Cloud Computing

4. SaaS Stand for _____.

- (a) Software as a Service
- (b) Software as a self
- (c) Software as Secure
- (d) Software as a Section

Ans.: (a) Software as a service

5. PaaS Stand for _____.

- (a) Platform as a Service
- (b) Platform as a self
- (c) Platform as Secure
- (d) Platform as a Section

Ans.: (a) Platform as a service

6. IaaS Stand for _____.

- (a) Infrastructure as a Service
- (b) Infrastructure as a self
- (c) Infrastructure as Secure
- (d) Infrastructure as a Section

Ans.: (a) Infrastructure as a service

7. In _____ cloud services and supporting infrastructure are shared across multiple users.

- (a) public
- (b) private
- (c) secure
- (d) hybrid

Ans.: (a) public

8. In _____ cloud services all the data is protected behind the firewall.

- (a) public
- (b) private
- (c) secure
- (d) hybrid

Ans.: (a) private

4.3 AI(Artificial Intelligence)

9. _____ imitate the brain's array of interconnected neurons.

- (a) Machine learning
- (b) Neural network
- (c) Deep learning
- (d) Computer vision

Ans.: (b) Neural network

10. _____ is about creating a "natural, human-like interaction".
- (a) Machine learning
(b) Neural network
(c) Cognitive computing
(d) Computer vision
- Ans.: (b) Cognitive computing

4.4 5G

11. _____ is the next generation of wireless communication.
- (a) 5G
(b) 4G
(c) 3G
(d) 6G

Ans.: (b) 5G

12. LTE stands for _____
- (a) Long Term Evolution
(b) Long Term Evolve
(c) Large Term Evolution
(d) Long Test Evolution
- Ans.: (b) Long Term Evolution

MCQ (Two Correct Answers)

4.2 Cloud Computing

1. Primary service models of cloud computing are _____.
- (a) SaaS
(b) Paas
(c) Faas
(d) Daas
(e) Caas
- Ans.: (a), (b)
2. Example of SaaS are _____.
- (a) Amazon Web Services
(b) Microsoft Azure VM
(c) GitHub
(d) Google's G Suit
(e) SAP

3. Example of SaaS are _____.
- (a) GitHub
(b) SAP
(c) Dropbox
(d) AWS
(e) Microsoft Azure VM

Ans.: (a), (c)

4. Following are the types of cloud.
- (a) Public Cloud
(b) Private Cloud
(c) Personal Cloud
(d) secure Cloud
- Ans.: (a), (b)

5. In SaaS the application reside on a remote cloud network accessed through the _____ or an _____.
- (a) web
(b) file
(c) API
(d) wifi
(e) Bluetooth
- Ans.: (a), (c)

4.3 AI(Artificial Intelligence)

6. Disadvantages of AI are _____.
- (a) Digital Assistance
(b) Faster Decisions
(c) Cost of creation
(d) Unemployment
(e) Daily application
- Ans.: (c), (d)

MCQ (Three Correct Answers)

4.1 IoT(Internet of Things)

1. Internet of Things (IoT) is the network of _____.
- (a) Physical devices
(b) sensors
(c) actuators
(d) wires
- Ans.: (a), (b), (c)
2. Advantages of IoT are _____.
- (a) Time saving
(b) Enhance data collection
(c) Improve security
(d) privacy
- Ans.: (a), (b), (c)

4.2 Cloud Computing

3. Primary service models of cloud computing are _____.
- (a) SaaS
(b) Paas
(c) Faas
(d) Iaas
- Ans.: (a), (b), (d)
4. Example of SaaS are _____.
- (a) Amazon Web Services
(b) Microsoft Azure VM
(c) Google Compute Engine
(d) Google's G Suit

Ans.: (a), (b), (c)

5. Example of SaaS are _____
 (a) GitHub (b) SAP (c) Dropbox (d) AWS

Ans.: (a), (b), (c)

6. Types of Cloud are _____
 (a) Public Cloud (b) Private Cloud
 (c) Personal Cloud (d) Hybrid Cloud

Ans.: (a), (b), (d)

Match the Following

4.1 IoT(Internet of Things)

A	B
1. Smart City	(a) Network of physical devices, sensors, connectivity ,etc
2. Internet Of Things	(b) IoT

Ans.: 1. = (b) 2. = (a)

4.2 Cloud Computing

A	B
1. Public Cloud	(a) Software as a Service
2. Iaas	(b) Shared across multiple users
3. Saas	(c) Infrastructure as a Service
4. Paas	(d) All data is protected behind the firewall
5. Hybrid Cloud	(e) Platform as a service
6. Private Cloud	(f) Allows greater flexibility

Ans.:

1. = (b) 2. = (c) 3. = (a) 4. = (e) 5. = (f) 6. = (d)

4.3 AI (Artificial Intelligence)

A	B
1. Artificial Intelligence	(a) imitate the brain's array of interconnected neurons
2. Machine Learning	(b) image and speech recognition
3. Neural Network	(c) creating a "natural, human-like interaction"
4. Deep Learning	(d) Area of Computer Science

A	B
5. Cognitive computing	(e) Analyze and understand human language
5. Computer Vision	(f) Digital assistance
6. Natural Language Processing	(g) Automates analytical model building
7. Chatbot	(h) OK Google
8. Google's	(i) understanding the content of pictures and videos

Ans.:

1. = (d) 2. = (g) 3. = (a) 4. = (b) 5. = (c)
 6. = (f) 7. = (e) 8. = (f) 9. = (h)

4.4 5G

A	B
1. 5G	(a) Long Term Evolution
2. LTE	(b) fifth generation

Ans.: 1. = (b) 2. = (a)

Answer Briefly

4.1 IoT (Internet of Things)

1. Define IoT with example.

Ans.:

Definition :

(i) IoT stands for Internet of Things, which is a way of connecting all the devices and objects around us into a common cloud network.

(ii) It helps in creating opportunities for more direct integration of the physical world into computer based systems.

(iii) It improves efficiency, reduces cost and human efforts.

(iv) IOT extends Internet connectivity beyond standard devices, like desktops, laptops, smart phones and tablets, to any range of traditionally dumb or non-internet enabled devices and everyday object.

(v) Following are some examples of IoT :

(vi) Smart lighting - Illumination of light is controlled on the basis of day light.

(vii) Smart thermostats - Allows users to schedule monitor and remotely control home temperatures.

- (viii) Smart locks and garage door openers, Password based or facial recognition based doors and locks.
- (ix) Smart security cameras – Security cameras that can identify known and unknown person and raise alarm, in case of security threat.
- (x) Smart traffic signals – Signal that can adjust their timing to accommodate commutes and holiday traffic and keep cars moving.

2. Explain advantages and disadvantages of IoT.

Ans. :

Advantages of IoT are as follows :

- (i) **Efficient resource utilization** : If we know the functionality and the way that how each device works, we definitely increase the efficient resource utilization.
- (ii) **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.
- (iii) **Time saving** : Time is the primary factors in automation which can be saved through IOT platform.
- (iv) **Enhance Data Collection** : IoT devices can collect data from environment like weather, sound, pollution etc. This data then can be used to take decisions.
- (v) **Improve security** : IoT based security systems helps in increasing security.

Disadvantages of IoT are as follows :

- (i) **Privacy** : IoT uses internet due to which personal data may get hack.
- (ii) **Complexity** : The designing, developing, maintaining of IoT system is quite complicated.

3. Give some application of IoT.

Ans. :

Following are some applications of IoT :

- (i) **Smart thermostats** - Allows users to schedule monitor and remotely control home.
- (ii) **Smart lighting** - Illumination of light is controlled on the basis of day light.
- (iii) **Smart locks and garage door openers**, Password based or facial recognition based doors and locks.
- (iv) **Smart security cameras** – Security cameras that can identify known and unknown person and raise alarm, in case of security threat.
- (v) **Smart traffic signals** – Signal that can adjust their timing to accommodate commutes and holiday traffic and keep cars moving.

4.2 Cloud Computing

Explain detail about Cloud Computing.

Ans. :

Cloud computing is the on-demand availability of computer system without direct active management by the user.

- (i) 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).
- (ii) **Infrastructure as a service (IaaS)** : IaaS provides automated and scalable environments that provide a high degree of control and flexibility for the user.
- (iii) **Platform as a service (PaaS)** : A service provider offers access to a cloud-based environment in which users can develop, manage and deliver applications.
- (iv) **Software as a service (SaaS)** : A service provider delivers software and applications through the internet or an API.
- (v) There are three basic types of deployment of cloud computing that are Public, Private and Hybrid.
- (vi) In public cloud, all the services and supporting infrastructure are managed off-site over the internet and shared across multiple users.
- (vii) Private cloud provides I.T services through the internet or a private network to selected users rather than to general public.
- (viii) Hybrid cloud environments combines both Public and Private cloud elements.

5. Explain models of Cloud Computing.

Ans. :

- (i) Cloud Computing is the on-demand availability of computer system without direct active management by the user.
- (ii) 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).
- (iii) **Infrastructure as a service (IaaS)**
 - IaaS provides automated and scalable environments that provide a high degree of control and flexibility for the user.
 - Instead of purchasing hardware, users pay for IaaS on demand.
 - **Examples** : Amazon web services (AWS), Microsoft Azure VM, Google Compute Engine (GCE)
- (iv) **Platform as a service (PaaS)**
 - A service provider offers access to a cloud-based environment in which users can develop, manage and deliver applications.

- PaaS provides a platform with tools to test, develop and host applications in the same environment
- **Examples :** Google App Engine
- **Software as a service (SaaS)**

- A service provider delivers software and applications through the internet or an API.
- Applications are accessible from almost any internet-connected device, from virtually anywhere in the world.
- **Examples :** Google's G suite, GitHub, Dropbox.

6. Explain types of Cloud Computing.

Ans. :

- There are three basic types of deployment of cloud computing that are Public, Private and Hybrid.
- 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 :** These are more efficient and inexpensive than private and hybrid cloud solutions.
- Private Cloud :** As the name suggests private cloud provides IT services through the internet or a private network to selected users rather than to general public.
- In private cloud data is protected behind the firewall.
- Private cloud solutions are preferred for enhanced security and privacy by the users.
- Hybrid Cloud :** Hybrid cloud environments combines both Public and Private cloud elements.
- Communication in hybrid cloud is done 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

7. Explain some benefits of Cloud Computing.

Ans. :

Benefits of Cloud Computing are as follows :

- Cost saving :** Cloud computing solutions are inexpensive than physical infrastructure.
- Reliable :** Cloud computing solutions are more reliable than In-house IT infrastructure.
- Mobility :** Cloud computing solutions are more portable because user can access data anytime, anywhere as required.

- Scalability :** Cloud computing is more scalable than physical storage.
- Automatic update :** Data on cloud gets updated automatically.

4.3 AI(Artificial Intelligence)

Give brief idea about AI.

Ans. :

- Artificial Intelligence is the study of making intelligent machine's that can perform operation like human being.
- AI is different from robotics, but related to some extent, in which machines sense their environment, perform calculations and do physical tasks either by themselves.

Different fields of AI are as follows :

- Machine learning** is the study of computer algorithms that improve automatically through experience.
- Neural networks** imitate the brain's array of interconnected neurons, and relay information between various units to find connections and derive meaning from data.
- Deep learning** utilizes really big neural networks and a lot of computing power to find complex patterns in data, for applications such as image and speech recognition.
- Natural language processing** involves analyzing and understanding human language and responding to it.

9. Define AI with sub fields of AI.

Ans. :

- Artificial intelligence (AI) is an area of computer science that emphasizes on creation of intelligent machines that work and react like humans.
- AI is different from robotics, but related to some extent, in which machines sense their environment, perform calculations and do physical tasks either by themselves or under the direction of people.
- Different fields of AI are as follows:-
- Machine learning is the study of computer algorithms that improve automatically through experience.
- Neural networks imitate the brain's array of interconnected neurons, and relay information between various units to find connections and derive meaning from data.
- Deep learning utilizes really big neural networks and a lot of computing power to find complex patterns in data, for applications such as image and speech recognition.

- (vii) Natural language processing involves analyzing and understanding human language and responding to it.
- (viii) Cognitive computing is about creating a "natural, human-like interaction", including using the ability to interpret speech and respond to it.
- (ix) Computer vision employs pattern recognition and deep learning to understand the content of pictures and videos, and to enable machines to use real-time images to make sense of what's around them.

10. What are the advantages and disadvantages of AI?

Ans. :

Advantages of Artificial Intelligence are as follows :

- (i) **Reduction in human error** : Computers if programmed properly with artificial Intelligence gives 100% accuracy as compared to task performed by human as there is always a chance for human mistakes.
- (ii) **Digital Assistance** : Some of the highly advanced organizations use digital assistants to interact with users which save the need for human resources. Example Chabot
- (iii) **Faster Decisions** : Using AI alongside other technologies, we can make machines take decisions faster than a human and carry out actions quicker.
- (iv) **Daily Applications** : Daily applications such as Apple's Siri, Window's Cortana, and Google's OK Google are frequently used in our daily routine whether it is for searching a location, taking a selfie, making a phone call, replying to a mail and many more.

Disadvantages of AI are as follows :

- (i) **High Costs of Creation** : As the machines used in AI based environments are very complex and high in price, it increases the cost for overall set up.
- (ii) **Unemployment** : As AI is replacing the majority of the repetitive tasks and other works with robots. This will reduce human interference but cause major problems in the employment standards.

4.4 5G

11. Explain concept of 5G.

Ans. :

- (i) 5G is the fifth generation of cellular network technology.
- (ii) 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).
- (iii) 5G technology may use a variety of spectrum bands, including millimeter wave (mmWave) radio spectrum, which can carry very large amounts of data at a short distance.

- (iv) The drawback of the higher frequencies is that they are more easily obstructed by the walls of buildings, trees and other foliage, and even changes in the weather.
- (v) The new 5G networks will be able to transmit very large amounts of data—but only a few blocks at a time.
- (vi) 5G networks are digital cellular networks, in which the service area covered by providers is divided into small geographical areas called cells.
- (vii) 5G can support up to a million devices per square kilometer, compared to 4G.

12. Explain features of 5G.

Ans. :

- (i) It is much faster than 4G.
- (ii) It reduces website load time.
- (iii) It enables high speed data transfer.
- (iv) It can stream high resolution videos easily.
- (v) It is more reliable than 4G.
- (vi) IoT based application are easy to build using 5G.

Exercise

Fill in the Blanks

- 1. IoT is Referred as _____.
- Ans. : Internet of Things
- 2. Smart Home is the application of _____ Technology.
- Ans. : IoT
- 3. Amazon is the _____ service provider.
- Ans : Saas

Match the Following

(1)

'A'	'B'
1. Smart City	(a) Software as a Service
2. Amazon Web Server	(b) Platform as a Service
3. Paas	(c) Cloud Computing
4. Saas	(d) IOT

Ans. : 1. - (d), 2. - (c), 3. - (b), 4. - (a)

State whether the following statement is True or False

1. PaaS provides a platform tools to test, develop and host application in the same environment.

Ans.: True

2. Cloud computing means to store and access data and programs over the internet.

Ans.: True

Answer Briefly

1. Give some application of IoT.

Ans.:

Following are some applications of IoT :

- (i) **Smart thermostats** - Allows users to schedule monitor and remotely control home.
- (ii) **Smart lighting** - Illumination of light is controlled on the basis of day light.
- (iii) **Smart locks and garage door openers**, Password based or facial recognition based doors and locks.
- (iv) **Smart security cameras** - Security cameras that can identify known and unknown person and raise alarm, in case of security threat.
- (v) **Smart traffic signals** - Signal that can adjust their timing to accommodate commutes and holiday traffic and keep cars moving.

2. Explain detail about Cloud Computing.

Ans.:

- (i) Cloud computing is the on-demand availability of computer system without direct active management by the user.
- (ii) 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).
- (iii) **Infrastructure as a service (IaaS)** : IaaS provides automated and scalable environments that provide a high degree of control and flexibility for the user.
- (iv) **Platform as a service (PaaS)** : A service provider offers access to a cloud-based environment in which users can develop, manage and deliver applications.
- (v) **Software as a service (SaaS)** : A service provider delivers software and applications through the internet or an API.
- (vi) There are three basic types of deployment of cloud computing that are **Public Private and Hybrid**.
- (vii) In public cloud, all the services and supporting infrastructure are managed off-site over the internet and shared across multiple users.

- (viii) Private cloud provides IT services through the internet or a private network to selected users rather than to general public.
- (ix) Hybrid cloud environments combines both Public and Private cloud elements.

3. Explain models of Cloud Computing.

Ans.:

- (i) Cloud Computing is the on-demand availability of computer system without direct active management by the user.

- (ii) 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).

- (iii) **Infrastructure as a service (IaaS)**

- IaaS provides automated and scalable environments that provide a high degree of control and flexibility for the user.
- Instead of purchasing hardware, users pay for IaaS on demand.

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

- (iv) **Platform as a service (PaaS)**

- A service provider offers access to a cloud-based environment in which users can develop, manage and deliver applications.
- PaaS provides a platform with tools to test, develop and host applications in the same environment

- **Examples** : Google App Engine

- (v) **Software as a service (SaaS)**

- A service provider delivers software and applications through the internet or an API.
- Applications are accessible from almost any internet-connected device, from virtually anywhere in the world.
- **Examples** : Google's G suite, GitHub, Dropbox.

4. Give brief idea about AI.

Ans.:

- (i) Artificial Intelligence is the study of making intelligent machine's that can perform operation like human being.
- (ii) AI is different from robotics, but related to some extent, in which machines sense their environment, perform calculations and do physical tasks either by themselves.

Different fields of AI are as follows :

- (iii) **Machine learning** is the study of computer algorithms that improve automatically through experience.

- (iv) **Neural networks** imitate the brain's array of interconnected neurons, and relay information between various units to find connections and derive meaning from data.
- (v) **Deep learning** utilizes really big neural networks and a lot of computing power to find complex patterns in data, for applications such as image and speech recognition.
- (vi) **Natural language processing** involves analyzing and understanding human language and responding to it.

5. Explain concept of 5G.

Ans. :

- (i) 5G is the fifth generation of cellular network technology.
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5

Chapter at

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5.1 Introduction to PHP

5.2 Server Side Scripting

5.3 Features of PHP

PHP Features :- Simple, Faster, Open Source, Platform Independent, Case Sensitive, Error reporting, Interpreted etc.

5.4 First Sample code of

PHP file extension. php, how to execute PHP program, how to save code in specific folder

PHP Case Sensitivity, PHP variables, rules for declaring variables, different variable scopes in PHP with examples

PHP Data Types :- String, Integer, Float, Boolean, Array, NULL Comments in PHP, Single line and multi-line comments,

Control structures in PHP :- If statement, if else statement.
Loop structure in PHP :- For, foreach with syntax and examples

5.5 PHP Arrays

Create an array, types of array, indexed array, multi-dimensional arrays, PHP associative arrays with syntax and examples.

5.7 PHP User Defined Functions

Function meaning, syntax, function arguments, returning a value to a function with examples

5.6 PHP String Functions

strlen(), strtolower(), trim(), ucwords(), str_replace(), str_word_count(), strpos(), substr_count()

5.8 PHP form Handling

Simple HTML form with php code, GET vs POST with examples, create database connection object, SQL statement and its execution, cookies and sessions in PHP.

Fill in the Blanks

5.2 Server Side Scripting

1. A is a Computer system that serves as a central repository of data and programs.
Ans.: Server
2. The server side environment that runs a scripting language is called
Ans.: Web Server
3. PHP is side scripting language.
Ans.: Server

5.3 Features of PHP

4. PHP is language, there is no need for compilation.
Ans.: Interpreted

5.4 First Sample code of PHP

5. PHP files have extension
Ans.: .php
6. keyword is used to display text on web page.
Ans.: echo
7. is a symbol or name that stands for a value.
Ans.: Variable
8. A variable starts with the sign followed by the name of the variable.
Ans.: \$
9. A variable declared outside a function has a scope and can only be accessed outside a function.
Ans.: Global
10. A variable declared within a function has a scope and can only be accessed within that function.
Ans.: Local
11. are the statements in PHP code, which are not visible in the output of the program.
Ans.: Comments
12. The statement allows programmer to make decision based on one more conditions.
Ans.: if

13. The statement allows programmer to make decision based on either this or that condition.
Ans.: if else
14. are used to execute the same block of code repeatedly as long as certain condition is satisfied.
Ans.: loop
15. loop works only on arrays.
Ans.: foreach
16. functions returns the length of a string.
Ans.: strlen()
17. functions counts the number of words in a string.
Ans.: str_word_count()
18. function reverses a string.
Ans.: strrev()
19. function searches for a specific text within a string.
Ans.: strpos()
20. function replaces some characters with some other characters in a string.
Ans.: str_replace()
21. function returns a part of a string.
Ans.: substr()
22. function converts a string to lowercase.
Ans.: strtolower()
23. function counts the number of times a substring occurs in a string.
Ans.: substr_count()
24. converts the first character of each word in a string to uppercase.
Ans.: ucwords()
25. functions removes whitespace and other predefined characters from both sides of a string.
Ans.: trim()

5.5 PHP String Functions

26. A is series of characters.
Ans.: string
27. A is a block of statements that can be used repeatedly in a program.
Ans.: function

5.6 PHP Arrays

28. An is a special variable which can hold more than one value at a time.

Ans.: array

29. An stores multiple values in single variable.

Ans.: array

30. The PHP functions is used to create an array variable.

Ans.: array()

31. There are types of arrays in PHP.

Ans.: Three

32. The arrays are the arrays with numeric index.

Ans.: Indexed

33. The arrays are the arrays with named keys.

Ans.: Associative

34. The arrays are the arrays containing one or more arrays.

Ans.: Multi-dimensional

35. The function is used to return the length of an array.

Ans.: count()

5.7 PHP User Defined Functions

36. A is a block of statements that can be repeatedly in a program.

Ans.: function

37. Information can be passed to functions through

Ans.: Arguments

38. are specified after the function name, inside the parentheses.

Ans.: Arguments

39. The statement is used to let a function return a value.

Ans.: return

5.8 PHP Form Handling

40. The form data is sent with the method.

Ans.: HTTP POST

41. is an array of variables passed via the URL parameters.

Ans.: \$_GET

42. is an array of variables passed via the URL parameters.

Ans.: \$_POST

43. Information sent from a form with method is visible to everyone.

Ans.: GET

44. method may be used for sending non sensitive data.

Ans.: GET

45. Information sent from a form with method is invisible to everyone.

Ans.: POST

46. method has no limits on the amount of information to send.

Ans.: POST

47. object helps to connect PHP code with any database server.

Ans.: PDO

48. method in PHP is used to check whether variable has value or not.

Ans.: isset()

49. A is a small text file that the server sends on the user's computer.

Ans.: Cookie

50. is used to identify user or its machine and track activities created on the user computer.

Ans.: Cookie

51. When browser requests server page are sent along with the request.

Ans.: cookie

52. is used to store user information on server to track user activities.

Ans.: session

53. helps web application to maintain user information on all the pages.

Ans.: Session

True or False

5.1 Introduction to PHP

1. PHP is widely used open source general purpose scripting language.

Ans.: True

2. PHP does not supports databases.

Ans.: False

3. PHP runs on client side.

Ans.: False

5.2 Server Side Scripting

4. The server side environment that runs a scripting language is termed web server.

Ans.: True

5. PHP hides the code from the user.

Ans.: True

5.3 Features of PHP

6. PHP is very difficult to use.

Ans.: False

7. There is no need of compilation for PHP code.

Ans.: True

8. PHP is faster than other scripting language.

Ans.: True

9. You need to pay for use of PHP.

Ans.: False

10. PHP is platform independent.

Ans.: True

11. PHP is case sensitive only at the time of variable declaration.

Ans.: True

5.4 First Sample code of PHP

12. The PHP code can also be embedded with HTML tags using `<? PHP and ?>`

Ans.: True

13. PHP files are saved with .html extension.

Ans.: False

14. echo keyword is used to display text on web page.

Ans.: True

15. Variables are used to store values.

Ans.: True

16. A variable starts with \$ sign, followed by name of variable.

Ans.: True

17. A variable name can start with a number.

Ans.: False

18. A variable name can contain only alpha-numeric characters and underscores.

Ans.: True

19. A variable declared outside a function has a GLOBAL SCOPE.

Ans.: True

20. A variable declared within a function has a LOCAL SCOPE.

Ans.: True

21. Variables can store data of different types.

Ans.: True

22. To check data type of variable `var _put ()` method is used.

Ans.: False

23. Comments are the non executable statement in PHP code.

Ans.: True

24. If statement allows to make decision based on one or more conditions.

Ans.: True

25. For each loop works only on arrays.

Ans.: True

26. `StrLength()` function returns the length of a string.

Ans.: False

27. `Str_word_count()` function counts the number of words in a string.

Ans.: True

28. `Strrev()` function reverses a string.

Ans.: True

29. `Strpos()` function returns a string.

Ans.: True

30. `Str_replace()` function replaces some characters with some other characters in a string.

Ans.: True

31. `Substr()` function returns a part of a string.

Ans.: True

32. `Strlower()` function converts a string to lower case.

Ans.: False

33. `Substr_count()` function counts the number of times a substring occurs in a string.

Ans.: True

34. `Ucwords()` function converts the first characters of each word in a string to uppercase.

Ans.: True

35. trim() function adds white space and other pre defined characters from both sides of a string.
Ans.: True

5.5 PHP String Functions

36. A string is a series of characters.
Ans.: True
37. A function is a block of statements that can be used repeatedly in a program.
Ans.: True

5.6 PHP Arrays

38. Array can store multiple values at a time.
Ans.: True
39. In PHP, array() function is used to create a array.
Ans.: True
40. Syntax of creating array variable is a = arr (values).
Ans.: False
41. In PHP there are six types of arrays.
Ans.: False
42. An array with a numeric index is called indexed arrays.
Ans.: True
43. Multi-dimensional arrays are the arrays with named keys.
Ans.: False
44. Associative array contains one or more arrays.
Ans.: False
45. Array index always starts with zero.
Ans.: True
46. The len() function is used to return the length of an array.
Ans.: false
47. PHP can handle multiple levels of multi dimensional arrays.
Ans.: True
48. We can create our own functions in PHP.
Ans.: True

5.7 PHP User Defined Functions

49. A function is a block of statements that can be used repeatedly in a program.
Ans.: True
50. A function name cannot start with a number.
Ans.: True
51. Information can be passed to functions through methods.
Ans.: False
52. Arguments are specified after the function name, inside the parentheses.
Ans.: True
53. Return statement is used to return a value of a function.
Ans.: True

5.8 PHP Form Handling

54. The form data is sent with the HTTP Post method.
Ans.: True
55. The PHP superglobals \$_GET and \$_POST are used to collect form data.
Ans.: True
56. \$_GET and \$_POST superglobals which means that they are never accessible.
Ans.: False
57. \$_GET is an array of variables passed via the URL parameters.
Ans.: True
58. \$_POST is an array of variables passed via the HTTP POST method.
Ans.: True
59. Information sent from a form with GET method is not visible to everyone.
Ans.: False
60. GET has limits on the amount of information to send.
Ans.: True
61. GET should NEVER be used for sending passwords or other sensitive information.
Ans.: True
62. Information sent from a form with POST method is invisible to everyone.
Ans.: True
63. POST has limits on the amount of information to send.
Ans.: False

64. isset() method in PHP is used to check whether variable has value or not.
Ans.: True

65. A cookie is a small text file the client sends on the user's computer.
Ans.: False

66. When browser requests server page, cookies are sent along with the request.
Ans.: True

67. Cookies store visited page on browser to optimize search.
Ans.: True

68. Session is used to store user information on server to track user activities.
Ans.: True

69. Session helps web application to maintain user information on all the pages.
Ans.: True

70. PHP Data Object helps us to connect PHP code in Uniform Method of access to multiple databases.
Ans.: True

MCQ (One Correct Answers)

5.1 Introduction to PHP

1. is a widely used open source server side programming language which runs on various platforms.

- (a) Word (b) PHP (c) Excel (d) PowerPoint

Ans.: (b)

5.2 Server Side Scripting

2. A is a Computer system that serves as a central repository of data and programs.

- (a) Server (b) Network (c) Client (d) Object

Ans.: (a)

3. The server side environment that runs a scripting language is termed

- (a) Browser (b) Computer (c) Web server (d) Client

Ans.: (c)

5.3 Features of PHP

1. is a script executed on server which generate dynamic HTML pages.
(a) PHP (b) MS Word (c) MS Excel (d) Client
Ans.: (a)

5.4 First Sample code of PHP

5. The PHP code can also be embedded with HTML tags using

- (a) <[Php]> (b) <?php and ?>
(c) <=php> (d) <#php#>

Ans.: (b)

6. PHP files are saved with extension.

- (a) .html (b) .xml (c) .js (d) .php

Ans.: (d)

7. keyword is used to display text on web page.

- (a) echo (b) print (c) write (d) cin

Ans.: (a)

8. is a symbol or name that stands for a value.

- (a) Method (b) condition (c) Variable (d) Value

Ans.: (c)

9. A variable in PHP starts with the sign followed by name of the variable.

- (a) # (b) @ (c) = (d) \$

Ans.: (d)

10. PHP variable name cannot starts with a

- (a) Number (b) Character
(c) Alphanumeric (d) Dollar

Ans.: (a)

11. Correct method for declaring PHP variable is

- (a) # age (b) \$ age (c) @ age (d) age

Ans.: (b)

12. A variable declaration a function has a GLOBAL SCOPE.

- (a) inside (b) middle (c) outside (d) topside

Ans.: (c)

13. A variable declared a function has a LOCAL SCOPE
 (a) Inside (b) outside (c) between (d) within
 Ans.: (d)
14. PHP stores all variables in an array called \$GLOBAL[Index]
 (a) local (b) global (c) Static (d) within
 Ans.: (b)
15. To check data type of variable in PHP method is used.
 (a) var_dump() (b) var_del()
 (c) var_remove() (d) var_delete()
 Ans.: (a)
16. are the statements in PHP code which are not visible in the output of the program.
 (a) Methods (b) comments (c) Objects (d) values
 Ans.: (b)
17. How to add a single line comment in PHP?
 (a) // (b) # (c) \$ (d) @
 Ans.: (a)
18. How to a multiline comment in PHP?
 (a) // (b) # (c) \$ (d) /* and */
 Ans.: (d)
19. statement allows programmer to make decision, based on one or more conditions.
 (a) if (b) loop (c) variable (d) method
 Ans.: (a)
20. statement allows programmer to make decisions based on either this or that decision.
 (a) loop (b) if else (c) variable (d) method
 Ans.: (b)
21. are used to execute the same block of code repeatedly as long as a certain condition is satisfied.
 (a) Variable (b) Method (c) Object (d) loops
 Ans.: (d)
22. loop works only on arrays.
 (a) for next (b) for (c) foreach (d) forone
 Ans.: (c)

23. function returns the length of a string.
 (a) strev() (b) strlen() (c) strlen() (d) substr()
 Ans.: (b)
24. function counts the number of words in a string.
 (a) strlen() (b) str_word_count() (c) substr() (d) trim()
 Ans.: (b)
25. function reverses a string.
 (a) strev() (b) trim() (c) ucwords() (d) stripslashes()
 Ans.: (a)
26. function searches for a specific text within a string.
 (a) substr() (b) strev() (c) strpos() (d) str_replace()
 Ans.: (c)
27. function replaces some characters with same other character in a string.
 (a) strev() (b) str_replace() (c) trim() (d) strpos()
 Ans.: (b)
28. function returns a part of a string.
 (a) substr() (b) trim() (c) strev() (d) str_len()
 Ans.: (a)
29. function converts a string to lowercase.
 (a) ucwords() (b) strtolower() (c) strtolower() (d) trim()
 Ans.: (b)
30. function counts the number of times substring occurs in a string.
 (a) substr() (b) substr_count() (c) trim() (d) strlen()
 Ans.: (b)
31. function converts the first character of each word in a string to upper case.
 (a) substr() (b) strtolower() (c) trim() (d) ucwords()
 Ans.: (d)
32. function removes whitespace and other predefined characters from both sides of a string.
 (a) trim() (b) strlen() (c) stripslashes() (d) strev()
 Ans.: (a)

5.5 PHP String Functions

93. A is series of characters.
 (a) String (b) Number (c) Object (d) Value

- Ans.: (a)
 34. A is a block of statements that can be used repeatedly in a program.
 (a) function (b) class (c) method (d) variable

Ans.: (a)

5.6 PHP Arrays

35. is a variable which can hold more than one value at a time.
 (a) Array (b) Method (c) Object (d) Constant

- Ans.: (a)
 36. In PHP function is used to create array.

- (a) arr() (b) array() (c) value() (d) variable()

Ans.: (b)

37. Syntax of creating array variable is

- (a) @ a = array() (b) #a = arr()
 (c) = array() (d) \$a = array (values)

Ans.: (d)

38. There are types of arrays in PHP.

- (a) Two (b) One (c) Three (d) Four

Ans.: (c)

39. arrays are the arrays with a numeric index.

- (a) Associative (b) Indexed
 (c) Multi-dimensional (d) Normal

Ans.: (b)

40. arrays are the arrays with named keys.

- (a) Indexed (b) Associative
 (c) Dimensional (d) Normal

Ans.: (b)

41. arrays are arrays containing one or more arrays.

- (a) Multi-dimensional (b) Indexed
 (c) Associative (d) Numbered

Ans.: (a)

42. Array index always starts with

- (a) one (b) two (c) zero (d) four

Ans.: (c)

5.7 PHP User Defined Functions

43. A is a block of statements that can be repeatedly in a program.
 (a) function (b) condition (c) object (d) value

Ans.: (a)

44. Information can be passed to functions through

- (a) Condition (b) arguments (c) array (d) variable

Ans.: (b)

5.8 PHP Form Handling

45. The form data is sent with the method.

- (a) HTTP POST (b) FTP POST
 (c) STP POST (d) SMTP POST

Ans.: (a)

46. is an array of variables passed via the URL parameters.

- (a) \$_GET (b) #GET (c) _GET (d) @GET

Ans.: (a)

47. is an array of variables passed via the HTTP POST method.

- (a) \$POST (b) \$_POST (c) @_POST (d) #_POST

Ans.: (b)

48. Information sent from a form with method is visible to everyone.

- (a) POST (b) GET (c) HTTP (d) FTP

Ans.: (b)

49. Information sent from a form with method is invisible to everyone.

- (a) POST (b) GET (c) HTTP (d) FTP

Ans.: (a)

50. NEVER be used for sending sensitive information.

- (a) POST (b) HTTP (c) GET (d) FTP

Ans.: (c)

51. method in PHP is used to check whether variable has value or not.

- (a) outset() (b) inset()
 (c) noset() (d) isset()

Ans.: (d)

52. A is a small text file that the server sends on the user's computer.

- (a) Cookie
(b) session
(c) Presentation
(d) Method

Ans.: (a)

53. are sent along when browser requests server pages.

- (a) Cookie
(b) Session
(c) Method
(d) Server

Ans.: (a)

54. is used to store information on server to track user activities.

- (a) Cookie
(b) session
(c) Presentation
(d) Object

Ans.: (b)

55. helps web application to maintain user information on all the pages.

- (a) Session
(b) presentation
(c) Cookie
(d) object

Ans.: (a)

MCQ (Two Correct Answers)

5.1 Introduction to PHP

1. PHP runs on following platform.

- (a) Linux
(b) Excel
(c) Word
(d) Windows

Ans.: (a), (d)

2. PHP is compatible with following servers.

- (a) Unix
(b) XAMMP
(c) Linux
(d) Apache

Ans.: (b), (d)

5.2 Server Side Scripting

3. Programming languages for server side programming are

- (a) PHP
(b) Tally
(c) Excel
(d) Python

Ans.: (a), (d)

5.3 Features of PHP

4. Features of PHP are

- (a) Interpreted
(b) Open source
(c) Difficult
(d) Platform dependent

Ans.: (a), (b)

5.4 First Sample code of PHP

Popular PHP Frameworks are

- (a) Echo
(b) Laravel
(c) ServerSide
(d) Symfony

Ans.: (b), (d)

6. Variables are used for storing values such as and

- (a) Methods
(b) Numeric values
(c) Character Strings
(d) Functions

Ans.: (b), (c)

7. A variable starts with the sign followed by of the variable.

- (a) \$
(b) #
(c) name
(d) value

Ans.: (a), (c)

8. A variable declared a function has GLOBAL SCOPE and a variable declared a function has LOCAL SCOPE.

- (a) inside
(b) outside
(c) within
(d) between

Ans.: (b), (c)

9. Following are the data types used in PHP

- (a) Boolean
(b) Text
(c) Number
(d) Array

Ans.: (a), (d)

10. Control structures in PHP are

- (a) for
(b) if statement
(c) for each
(d) if else statement

Ans.: (b), (d)

11. Loop structure in PHP are

- (a) for
(b) for each
(c) if
(d) if else

Ans.: (a), (b)

12. Comments in PHP is possible in following ways.

- (a) //
(b) \\
(c) /* and */
(d) # and #/

Ans.: (a), (c)

13. Comments are of and type.

- (a) Single line
(b) No line
(c) Two line
(d) Multi-line

Ans.: (a), (d)

14. Following are the pre defined functions in PHP to manipulate string.

- (a) trim()
(b) substr()
(c) length()
(d) streverse()

Ans.: (a), (b)

5.7 PHP User Defined Functions

15. A function name can start with a or
- (a) symbol (b) Number (c) Letter (d) Underscore

Ans.: (c), (d)

5.8 PHP Form Handling

16. Form data can be submitted by or method.
- (a) Return (b) forward (c) GET (d) POST

Ans.: (c), (d)

17. The PHP super globals and are used to collect form data.

- (a) \$_GET (b) \$POST (c) \$GET (d) \$_POST

Ans.: (a), (d)

18. is an array of variables passed via URL parameters and is an array of variables passed via HTTP POST method.

- (a) \$GET (b) \$_GET (c) \$_POST (d) \$POST

Ans.: (b), (c)

19. has limits on the amount of information to send whereas has no limits on the amount of information to send.

- (a) Value (b) Method (c) GET (d) POST

Ans.: (c), (d)

MCO (Three Correct Answers)

5.1 Introduction to PHP

1. PHP runs on following platforms

- (a) Systems (b) Words (c) Linux (d) Excel
(e) Unix (f) Windows

Ans.: (c), (e), (f)

2. PHP is compatible with following servers.

- (a) XAMMP (b) Linux (c) Apache
(d) Unix (e) Lighthouse (f) Word

Ans.: (a), (c), (e)

5.2 Server Side Scripting

Programming languages for server side programming are

3. (a) PHP (b) Windows (c) Linux (d) Python
(e) Unix (f) Java and JSP

Ans.: (a), (d), (f)

5.3 Features of PHP

4. Features of PHP are

- (a) Difficult (b) Simple (c) Error Creating
(d) Platform Independent (e) Error Reporting
(f) Platform Dependent

Ans.: (b), (d), (e)

5.4 First Sample code of PHP

5. Variables are used for storing values such as, and

- (a) Character (b) Numeric (c) Objects (d) Methods
(e) Functions (f) Memory addresses

Ans.: (a), (b), (f)

6. The scope of variable in PHP are

- (a) Local (b) Regional (c) National (d) Global
(e) Static (f) International

Ans.: (a), (d), (e)

7. PHP data types are

- (a) Text (b) String (c) Number (d) Integer
(e) Empty (f) Boolean

Ans.: (b), (d), (f)

8. Following are the predefined functions in PHP to manipulate string

- (a) Lower() (b) stripslashes() (c) substr() (d) strlen()
(e) upper() (f) strlen()

Ans.: (b), (c), (d)

5.6

9. In PHP three types of arrays are
- (a) inside (b) multiple (c) indexed (d) associate
 (e) outside (f) multi-dimensional

Ans. : (c), (d), (f)

PHP Theory with Examples

5.1 Introduction to PHP

PHP (Hypertext Pre-processor) is a widely-used open source general-purpose scripting language. PHP runs on various platforms (Linux, Unix, Mac OS X, Windows etc.). PHP supports a wide range of databases. PHP is easy to learn and runs efficiently on the server side.

5.2 Server Side Scripting

A server is a computer system that serves as a central repository of data and programs and is shared by the clients. The server-side environment THAT runs a scripting language is termed web server. A user's request is fulfilled by running a script directly on the web server to generate dynamic html pages. This html is then sent to the client browser.

Few programming languages for server side programming are:-

- 1) PHP
- 2) Java and JSP
- 3) Python

5.3 Features of PHP

PHP is the most popular and frequently used worldwide server-side scripting language. Following are some of the features of PHP :

- **Simple** : It is very simple and easy to use, as compared to other scripting languages.
- **Interpreted** : It is an interpreted language, i.e. there is no need for compilation.
- **Open Source** : Open source means you need not pay for use of PHP. You can freely download and use.
- **Platform Independent** : PHP code will be run on every platform, Linux, Unix, Mac OS X, Windows.
- **Error Reporting** : PHP have some predefined error reporting constants to generate a warning or error notice.

5.4 First sample code of PHP

The PHP code usually enclosed in a special start and end processing instructions `<?php` and `?>` that allows us to move in to and out of PHP mode. All PHP files have `.php` simple example to display "Hello world" message on the web page

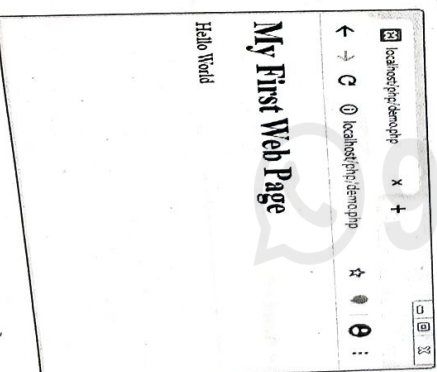
Coding :

```
<?DOCTYPE html>
<html>
<body>
<h1>My First Web Page</h1>
<?php
echo "Hello World";
?>
</body>
</html>
```

Steps to save and execute PHP programs:-

1. Type the above program and save it as "demo.php" using any text editor. (for eg Notepad, gedit).
2. Create a folder with your name (for example php).
3. Save the "demo.php" file in your folder.
4. Open browser and type in address bar `http://localhost/php/`. Click on demo.php.

Output :



PHP case sensitivity

In PHP, the variable names are case sensitive. However keywords, function and class names are not case sensitive. The **echo** keyword is not case sensitive.

PHP variables

Variable is a name that stands for a value. Variables are used to store values such as numeric and character values etc.

Rules for declaring PHP variables :

- A variable starts with the \$ sign, followed by the name of the variable
- A variable name must start with a letter or the underscore character
- A variable name cannot start with a number
- A variable name can only contain alpha-numeric characters and underscores (A-z, 0-9, and _)
- Variable names are case-sensitive (\$name and \$Name are two different variables)
- There are three different variable scopes in PHP :
 1. local
 2. global
 3. static

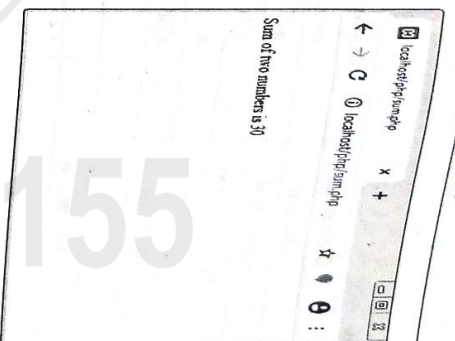
A variable declared outside a function has a GLOBAL SCOPE and can only be accessed outside a function (variable \$a). And a variable declared within a function has a LOCAL SCOPE and can only be accessed within that function (variable \$b). In some cases, if we want a local variable not to be deleted then the use of "static" keyword is must.

Example

PHP Program to print sum of two numbers.

Coding :

```
<?php
$a=10;
$b=20;
$c=$a+$b;
echo "<br><br>Sum of two numbers is $c";
?>
```

Output :**PHP Data Types**

Variables can store different types of data. PHP supports following data types :

- 1) String
- 2) Integer
- 3) Float
- 4) Boolean
- 5) Array
- 6) Null

Note : To check the data type of the variable var_dump() method is used.

Comments in PHP

Comments are the statement in PHP block which are not executed in the program. There are two types of comments, Single line comment and multi-line comments.

How to use Single line comment

```
// Single line comment
```

How to use Multi line comment

```
/* Multi
line
comment */
```

Operators in PHP are :

1. Arithmetic Operators

Operator	Definition	Example
+	Addition	a+b
-	Subtraction	a-b
*	Multiplication	a*b
/	Division	a/b
%	Modulus	a%b

2. Relational Operators

Operator	Definition	Example
>	Greater than	a>b
<	Less than	a=	Greater than or equal to	a>=b
<=	Less than or equal to	a<=b
==	Equal to	a=b

Control Structures in PHP

1. If statement in PHP:-

If statement allows the programmer to make decision based on one or more conditions, and execute statement accordingly.

Syntax :-

```
if(condition)
{
    Block of statements;
}
```

2. If else if statement in PHP:-

If else if statement allows the programmer to make decision based on either this or that conditions.

Syntax:-

```
if(condition)
{
    Block of statements;
}
```

```
else
{
    Block of statements;
}
```

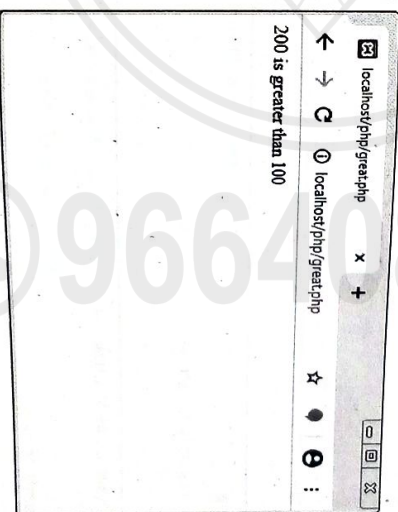
Example

PHP program to check and print greatest among two numbers.

Coding :

```
<?php
$a=100;
$b=200;
if($a>$b)
echo "$a is greater than $b",
else
echo "$b is greater than $a",
?>
```

Output:-



2. Loop Structure in PHP

Loops are used to execute the same block of code repeatedly as long as certain condition is satisfied.

Syntax For Loop

```
for(initialization;condition;increment)
{
    Statements of loop;
}
```

Example

PHP program to print numbers from 1 to 10 using for loop.

Coding :

```
<?php
for($i=1;$i<=10;$i++)
|
echo "<br>$i";
|
?>
```

Output:-



3. Foreach Loop

This loop works only for arrays.

Syntax:-

```
foreach($array as $value)
|
Statements of loop;
|
```

5.5 PHP String Functions

A string is a series of characters. Following are the predefined string functions in PHP.

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

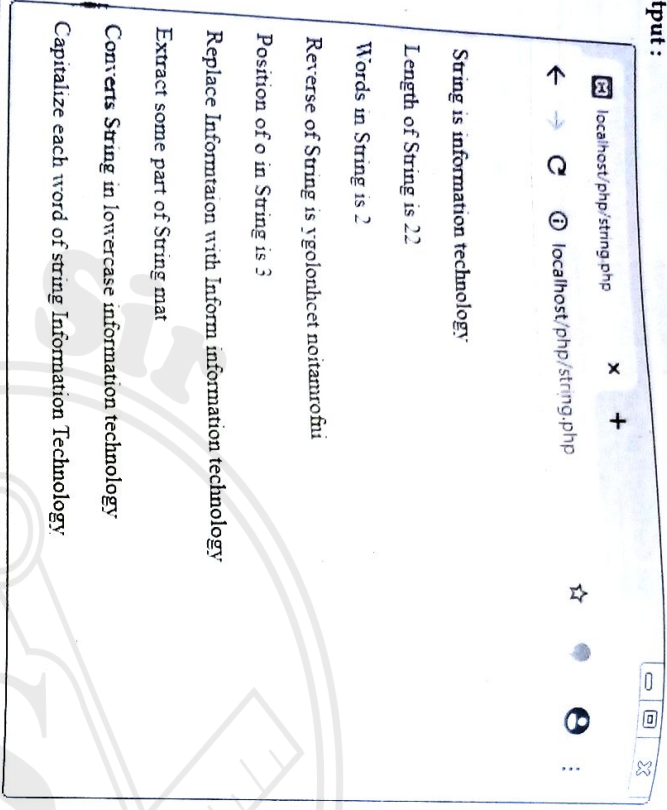
Example

PHP program to demonstrate string functions

Coding :

```
<?php
$a="information technology";
echo "<br><br>String is '$a';
echo "<br><br> Length of String is " . strlen($a);
echo "<br><br> Words in String is " . str_word_count($a);
echo "<br><br> Reverse of String is " . strrev($a);
echo "<br><br> Position of o in String is " . strpos($a, 'o');
echo "<br><br> Replace Information with Inform " . str_replace
("Information", "Inform", $a);
echo "<br><br> Extract some part of String " . substr($a, 5, 3);
echo "<br><br> Converts String in lowercase " . strtolower($a);
echo "<br><br> Capitalize each word of string " . ucwords($a);
?>
```


Output :



5.6 PHP Arrays

An array is a special variable, which can hold more than one value at a time.

Creating array in PHP :

In PHP, the array() function is used to create an array.

Syntax is:-

```
$x=array(values)
```

There are three types of arrays:

Indexed Arrays: - Arrays with a numeric index. Index always start with zero (0).

Syntax is: - \$x=(value1,value2,... value n)

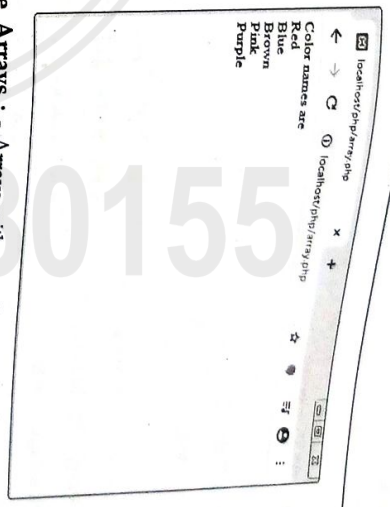
PHP program to print the name of colors store in array variable.

Coding

```
<?php
$x=array("Red","Blue","Brown","Pink","Purple");
echo "Color names are <br>"
```

```
foreach($x as $value)
{
    echo "$value <br>";
}
?>
```

Output :



Associative Arrays : - Arrays with named index. This uses name key instead of index to identify record/value.

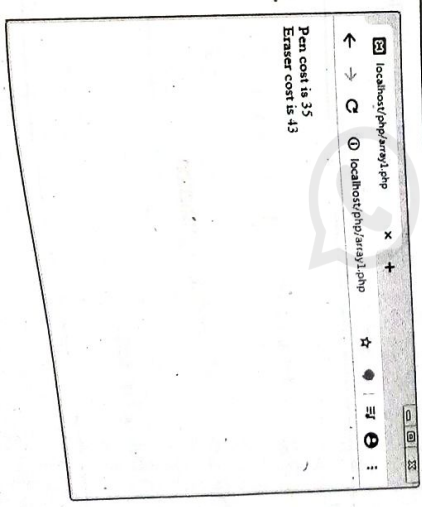
Syntax : - \$x={key1>= value1, key2>= value2, Key n>= value n}

PHP program to print the cost of product store in array variable.

Coding :

```
<?php
$p = array("Pen"=>"35", "Ball"=>"37", "eraser"=>"43");
echo "<br>Pen cost is '$p[Pen]";
echo "<br>Eraser cost is '$p[eraser]";
?>
```

Output :



Multi-dimensional Arrays : - Arrays containing one or more arrays.
 PHP program to print the information about cars sold and cars in stock.

Coding :

```
<?php
$scars = array
(
    array("Volvo",22,18),
    array("BMW",15,13),
    array("Saab",5,2),
    array("Land Rover",17,15)
);
echo $scars[0][0].": In stock: ".$scars[0][1].": sold: ".$scars[0][2].":<br>";
echo $scars[1][0].": In stock: ".$scars[1][1].": sold: ".$scars[1][2].":<br>";
echo $scars[2][0].": In stock: ".$scars[2][1].": sold: ".$scars[2][2].":<br>";
echo $scars[3][0].": In stock: ".$scars[3][1].": sold: ".$scars[3][2].":<br>";
?>
```

5.7 PHP User Defined Functions

A function is a block of statements that can be used repeatedly in a program.

Syntax is :

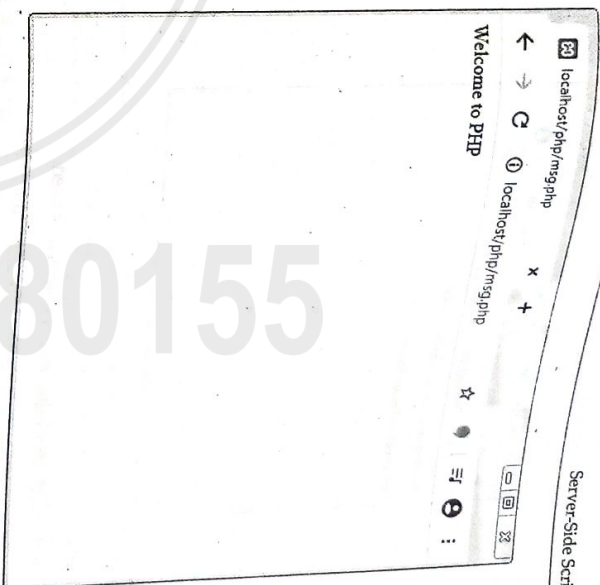
```
function functionname()
{
    statements;
}
```

PHP program to print message "Welcome to PHP" using function.

Coding :

```
<?php
function msg() // declaring a function
{
    echo "Welcome to PHP"; //defining function
}
msg(); // calling function
?>
```

Output :



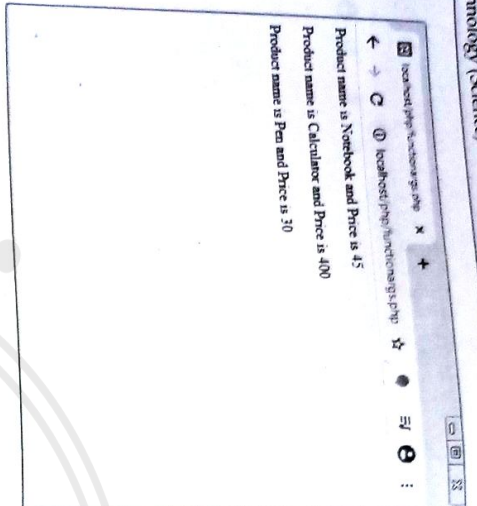
PHP Function Arguments

Information can be passed to function through arguments. Arguments are specified after function name.

PHP program to print Name and Price of the product by passing arguments to function.

Coding :

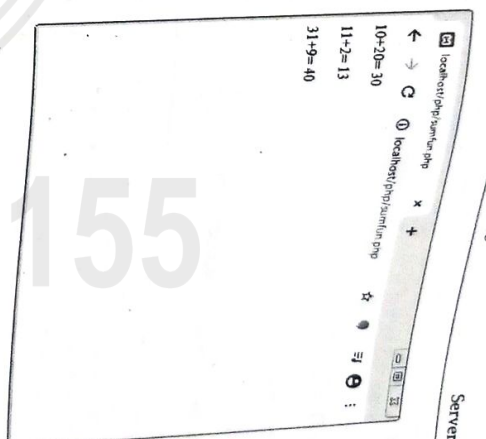
```
<?php
function pr($n,$price)
{
    echo "Product name is $n and Price is $price <br><br>";
}
pr("Notebook",45);
pr("Calculator",400);
pr("Pen",30);
?>
```

Output :**Returning Value :**

To let a function return a value, return statement is used.
PHP program to print sum of two numbers using function.

Coding :

```
<?php
function sum(int $a,int $b)
{
    $c=$a+$b;
    return $c;
}
echo "10+20= " .sum(10,20). "<br><br>";
echo "11+2= " .sum(11,2). "<br><br>";
echo "31+9= " .sum(31,9). "<br><br>";
?>
```

Output :**5.8 PHP Form Handling**

Create a HTML form with two input fields to accept number from the user and a button to print addition of two numbers.

Coding :

```
Form.html
<html>
<body>
<form action="add.php" method="post">
    Enter First Number
    <input type="text" name="t1"><br><br>
    Enter Second Number
    <input type="text" name="t2"><br><br>
    <input type="submit" value="Add">
</form>
</body>
</html>
```

```

add.php
<?php
    $i1=$_GET["i1"];
    $i2=$_GET["i2"];
    $c=$i1+$i2;
    echo "<br><br>Sum of two numbers is '$c'";
?>

```

Output :



The PHP superglobals \$_GET and \$_POST are used to collect form data.

GET vs POST

Both GET and POST are treated as superglobals which means that they are always accessible regardless of scope. It can be accessed from any function, class or file without having to do anything special.

Example to create admission form for student. Accept name and gender from the student. Create a college database and create table student having the fields name and gender.

Steps to create database and Table :

- 1) For database creation → open postgres sql terminal → create database college; and press enter.
- 2) For Table creation → create table student(name text, gender Boolean); press enter, table will be created.

Now type code in admission.php

```

<!DOCTYPE html>
<html>
<body>
<h1 align="center">Admission Form</h1>
<form method="post">
<label>Enter Name</label>
<input type="text" name="name" id="id_name"><br><br>
<label>Gender</label>
<input type="radio" name="gender" id="id_gender" value="male">Male<br><br>
<input type="radio" name="gender" id="id_gender" value="female">Female<br><br>
<input type="radio" name="gender" id="id_gender" value="other">Other<br><br>
<input type="submit" name="submit" value="submit" id="id_submit">
</form>
</body>
</html>
<?php
    $servername="pgsql:host=localhost;dbname=college";
    $username="postgres";
    $password="1axmi";
    $conn=new PDO($servername,$username,$password);
    if(isset($_POST['submit']))
    {
        $name=$_POST['name'];
        $gender=$_POST['gender'];
        $sql="INSERT INTO student(name,gender) VALUES ('".$name."','".$gender."')";
        $conn->exec($sql);
        echo "New record added successfully";
    }
?>

```

Answer the following**5.2 Server Side Scripting****1. Explain Server Side Scripting?****Ans. :**

- (i) A server is a computer system that serves as a central control of data and programs shared by clients.
- (ii) The server side environment that runs a scripting language is termed as web server.
- (iii) A user's request is fulfilled by running a script directly on the web server.
- (iv) It is used to provide interactive web sites.
- (v) Programming language for server side programming are PHP, Python JSP.

5.3 Features of PHP**2. Explain features of PHP (any 5).**

Ans. : PHP is most popular and frequently used worldwide server side scripting language. Following are features of PHP :

- (i) **Simple :** It is very simple and easy to use, as compared to other scripting languages.
- (ii) **Interpreted :** It is an interpreted language, i.e. there is no need for compilation.
- (iii) **Faster :** It is faster than other scripting language e.g. JSP and ASP.
- (iv) **Open Source :** Open source means you need not pay for use of PHP. You can freely download and use.
- (v) **Platform Independent :** PHP code will be run on every platform, Linux, Unix, Mac OS X, Windows.

5.4 First sample code of PHP**3. Explain how to save and execute PHP program.****Ans. :**

- (i) Type the PHP code using any text editor (Notepad).
- (ii) Save with .php extension in appropriate folder.
- (iii) Go to browser and type `http://localhost/php/first.php`
- 4. What is a variable?

Ans. :

- (i) Variable is a symbol or name that contains value.
- (ii) Variables are used for storing values such as numbers or characters.
- (iii) The stored values can be used in any part of the program.

What are the rules for declaring PHP variables?**Ans. :**

following are the rules for declaring variables in PHP.

- (i) A variable starts with the \$ sign, followed by the name of the variable.
 - (ii) A variable name must start with a letter or the underscore character.
 - (iii) A variable name can only contain alphanumeric characters and underscores (A-z, 0-9, and _).
 - (iv) Variable names are case-sensitive (\$age and \$AGE are two different variables).
- 6. Explain variable scopes in PHP.**

Ans. :

There are three different variables scopes in PHP :

- local
- global
- static.
- (i) A variable declared outside a function has a **GLOBAL SCOPE** and can only be accessed outside a function.
- (ii) A variable declared within a function has a **LOCAL SCOPE** and can only be accessed within that function.
- (iii) If we want a local variable not to be deleted then we have to use of static keyboard.

7. Explain PHP data types.**Ans. :**

- (i) **String:** - A string is a sequence of characters. A string can be any text inside quotes. You can use single or double quotes.
- (ii) **Integer:** - An integer data type is a non-decimal number between -2,147,483,648 and 2,147,483,647.
- (iii) **Float (floating point numbers) :** - A float (floating point number) is a number with a decimal point or a number in exponential form.
- (iv) **Boolean :** A Boolean represents two possible states: TRUE or FALSE.
- (v) **Array:** - An array stores multiple values in one single variable.
- (vi) **NULL:** - Null is a special data type which can have only one value: NULL. A variable of data type NULL is a variable that has no value assigned to it.

8. Explain Single line and multi line comments in PHP.**Ans. :**

- (i) A comment in PHP code is a line that is not executed as a part of the program.
- (ii) Its only purpose is to be read by someone who is looking at the code.

(iii) PHP supports several ways of commenting: Single line comment and multi line comment.

(iv) Single line comment can be written in two ways, they are :-
 // This is a single-line comment
 # This is also a single-line comment

(v) Multi line comment can be written as:-
 /* This is a multiple-lines comment block that spans over multiple lines */

9. Explain PHP If statement with syntax.

Ans. :

if statement - executes some code if one condition is true.

Syntax of if statement is

```
if (condition) {
    code to be executed if condition is true;
}
```

10. Explain PHP If else statement with syntax.

Ans. :

The if...else statement executes some code if a condition is true and another code if that condition is false.

Syntax of if else is

```
if (condition) {
    code to be executed if condition is true;
} else {
    code to be executed if condition is false;
}
```

11. Explain PHP for loop with syntax.

Ans. :

(i) Loops are used to execute the same block of code again and again, as long as a certain condition is true.

(ii) The for loop is used when you know in advance how many times the script should run.

Syntax

```
for (init counter, test counter, increment counter) {
    code to be executed for each iteration;
}
```

12. Explain PHP foreach with syntax.

Ans. :

The foreach loop works only on arrays, and is used to loop through each key/value pair in an array.

Syntax

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

5.5 PHP String Functions

13. Explain String functions used in PHP (any 5).

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

5.6 PHP Arrays

14. Explain how to create arrays in PHP with syntax.

Ans. :

(i) An array stores multiple values in one single variable

(ii) In PHP the array() function is used to create an array.

(iii) Syntax to create array is :- \$a=array(value).

15. Explain types of Arrays in PHP.

Ans. :

In PHP, there are three types of arrays:

(i) **Indexed arrays** - Arrays with a numeric index. For example:- \$cars = array("Volvo", "BMW", "Toyota");

(ii) **Associative arrays** - Arrays with named keys. For example :- \$age = array("Peter"=>"35", "Ben"=>"37", "Joe"=>"43");

- (iii) **Multidimensional arrays** - Arrays containing one or more arrays. For example,

```
$cars = array
(
    array("Volvo",22,18),
    array("BMW",15,13),
    array("Saab",5,2),
    array("Land Rover",17,15)
);
```

5.7 PHP User Defined Functions

16. Explain how to declare user defined function in PHP.

Ans. :

- A function is a block of statements that can be used repeatedly in a program.
- A function will not execute automatically when a page loads.
- A function will be executed by a call to the function.
- A user-defined function declaration starts with the word function :

Syntax

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

17. Explain PHP function arguments.

Ans. :

- Information can be passed to functions through arguments. An argument is just like a variable.
- Arguments are specified after the function name, inside the parentheses. You can add as many arguments as you want, just separate them with a comma.
- Example is :-

```
<?php
function familyName($fname) {
    echo "$fname Refsnes.<br>";
}
familyName("Jani");
familyName("Hege");
familyName("Stale");
familyName("Kai Jim");
familyName("Borge");
?>
```

5.8 PHP Form Handling

Explain difference between GET and POST.

Ans. :

- Both GET and POST are treated as superglobals which means that they are always accessible regardless of scope.
 - It can be accessed from any function, class or file without having to do anything special.
 - `$_GET` is an array of variables passed via the URL parameters.
 - `$_POST` is an array of variables passed via the HTTP POST method.
- Explain isset() method in PHP.

Ans. :

- isset() method is used in PHP to check whether variable has value or not.
- This helps us to know if the button is clicked or not.

20. Short note on Cookies and Session in PHP.

Ans. :

- Cookies:-**
- A cookie is often used to identify a user.
- A cookie is a small file that the server embeds on the user's computer.
- Each time the same computer requests a page with a browser, it will send the cookie too.
- With PHP, you can both create and retrieve cookie values.

(b) **Session**

- Session is used to store user information on server to track user activities.
- It helps in web application to maintain user information on all the pages.
- For example, if you login to gmail account, the session helps to access youtube account also.

PHP Extra Programs for Practice

1. Write a PHP code which calculates and prints addition, subtraction, multiplication, division of two numbers using form.

Ans. :

Coding :-

```
<html>
<body>
<form method="post">
  Enter First Number
  <input type="text" name="first"><br><br>
  Enter Second Number
  <input type="text" name="second"><br><br>
  <input type="submit" name="submit" value="Submit">
</form>
</body>
</html>
<?php
if(isset($_POST['submit']))
{
    $first = $_POST['first'];
    $second = $_POST['second'];
    $sum = $first+$second;
    $sub = $first-$second;
    $mul = $first*$second;
    $div = $first/$second;
    echo "<br><br>The Addition is: ".$sum;
    echo "<br><br>The Subtraction is: ".$sub;
    echo "<br><br>The Multiplication is: ".$mul;
    echo "<br><br>The Division is: ".$div;
}
?>
```

2. Write a PHP code which calculates and prints area and circumference of a circle.
Hint (area= $3.14 \times r^2$ and $c=2 \times 3.14 \times r$) using form.

Ans. :

Coding :

```
<html>
<body>
<form method="post">
  Enter Radius
  <input type="text" name="radius"><br><br>
  <input type="submit" name="submit" value="Submit">
</form>
</body>
</html>
<?php
if(isset($_POST['submit']))
{
    $p=3.14;
    $radius = $_POST['radius'];
    $a = $p*$radius*$radius;
    $c = $p*2*$radius;
    echo "<br><br>The Area of circle is: ".$a;
    echo "<br><br>The Circumference of circle is: ".$c;
}
?>
```

3. Write a PHP code which calculates square of a number using form.

Ans. :

Coding :

```
<html>
<body>
<form method="post">
  Enter a Number
  <input type="text" name="sq"><br><br>
  <input type="submit" name="submit" value="Square">
</form>
</body>
</html>
```



```

</form>
</body>
</html>
<?php
    if(isset($_POST['submit']))
    {
        $sq = $_POST['sq'];
        $$=$sq*$sq;
        echo "<br><br>The Square of number is: ".$sq;
    }
?>

```

4. Write a PHP code which calculates cube of a number using form.

Ans. :

```

<html>
<body>
<form method="post">
    Enter a Number
    <input type="text" name="sq"><br><br>
    <input type="submit" name="submit" value="Cube">
</form>
</body>
</html>
<?php
    if(isset($_POST['submit']))
    {
        $sq = $_POST['sq'];
        $$=$sq*$sq*$sq;
        echo "<br><br>The Cube of number is: ".$sq;
    }
?>

```

5. Write a PHP code to check and print greatest among two numbers using form and function.

Ans. :

Coding :

```

<html>
<body>
<form method="post">
    Enter First Number
    Enter Second Number
    <input type="text" name="s1"><br><br>
    <input type="text" name="s2"><br><br>
    <input type="submit" name="submit" value="Greatest">
</form>
</body>
</html>
<?php
    function grt()
    {
        if(isset($_POST['submit']))
        {
            $f = $_POST['f'];
            $s = $_POST['s'];
            if($f>$s)
                echo "<br><br>The greater number is " . $f;
            else
                echo "<br><br>The greater number is " . $s;
        }
    }
    grt();
?>

```

6. Write a PHP code to check and print greatest among three numbers using form.

Ans.:

Coding:

```

<html>
<body>
<form method="post">
Enter First Number
<input type="text" name="f"><br><br>
Enter Second Number
<input type="text" name="s"><br><br>
Enter Third Number
<input type="text" name="t"><br><br>
<input type="submit" name="submit" value="Greatest 3">
</form>
</body>
</html>
<?php
function grt()
{
if(isset($_POST['submit']))
{
    $f = $_POST['f'];
    $s = $_POST['s'];
    $t = $_POST['t'];
    if($f>$s && $f>$t)
    echo "<br><br>The greater number is " . $f;
    else
    {
        if($s>$f && $s>$t)
        echo "<br><br>The greater number is " . $s;
    }
    else
    {
        if($t>$f && $t>$s)
        echo "<br><br>The greater number is " . $t;
    }
}
}
    
```

7. Write a PHP code to check and print whether the number is Odd or Even using form.

Ans.:

Coding:

```

<html>
<body>
<form method="post">
Enter a Number
<input type="text" name="f"><br><br>
<input type="submit" name="submit" value="Even Odd">
</form>
</body>
</html>
<?php
if(isset($_POST['submit']))
{
    $f = $_POST['f'];
    if($f%2==0)
    echo "<br><br>The number is Even number";
    else
    echo "<br><br>The number is Odd number";
}
?>
    
```

8. Write a PHP code to check and print whether the number is positive, negative or Zero using form.

Ans. :

Coding :

```
<html>
<body>
<form method="post">
Enter a Number
<input type="text" name="f"><br><br>
<input type="submit" name="submit" value="Positive Negative Zero">
</form>
</body>
</html>
<?php
if(isset($_POST['submit']))
{
    $f = $_POST['f'];
    if($f>0)
    echo "<br><br>The number is Positive number";
    else
    if($f<0)
    echo "<br><br>The number is Negative number";
    else
    echo "<br><br>The number is Zero";
}
}
?>
```

9. Write a PHP code to print even numbers between 1-20.

Ans. :

Coding :

```
<?php
for($i=2;$i<=20;$i=$i+2)
{
```

```
echo "<br>".$i;
}
?>
```

10. Write a PHP code to input a number and print the factorial of a number.

Ans. :

Coding :

```
<html>
<body>
<form method="post">
Enter a Number
<input type="text" name="f"><br><br>
<input type="submit" name="submit" value="Factorial">
</form>
</body>
</html>
<?php
$fc=1;
if(isset($_POST['submit']))
{
    $f = $_POST['f'];
    for($i=$f;$i>=1;$i--)
    {
        $fc=$fc*$i;
    }
    echo "<br><br>The Factorial is "$fc;
}
?>
```

11. Write a PHP code to print multiplication table of a number.

Ans. :

Coding :

```
<html>
<body>
<form method="post">
```

Enter a Number

```
<input type="text" name="f"><br><br>
<input type="submit" name="submit" value="Table">
</form>
</body>
</html>
<?php
if(isset($_POST['submit']))
{
    $f = $_POST['f'];
    for($i=1;$i<=10;$i++)
    {
        $m=$f*$i;
        echo "<br><br>".$f." x ".$i." = ".$m;
    }
}>
```

12. Write a PHP code to check whether the number is prime number or not.

Ans. :

Coding :

```
<html>
<body>
<form method="post">
Enter a Number
<input type="text" name="f"><br><br>
<input type="submit" name="submit" value="Prime number">
</form>
</body>
</html>
<?php
    $p=1;
    if(isset($_POST['submit']))
    {
        $f = $_POST['f'];
```

```
for($i=2;$i<=$f;$i++)
{
    if($f%$i==0)
        $p=0;
}
if($p==1)
    echo "<br><br>Number is Prime Number";
else
    echo "<br><br>Number is not a Prime Number";
}>
```

13. Write a PHP code to count the number of words in the given string.

Ans. :

Coding :

```
<?php
$a="Hypertext Preprocessor";
echo "<br><br>String is ".$a;
echo "<br><br>Words in String is ".str_word_count($a);
?>
```

14. Create a website with two PHP webpage in which each webpage is connected. The first page of the website contains two form fields for taking 'name' and 'password' from users. On onclick event, details of forms should be displayed on second web page.

Ans. :

Coding :

```
Form.html
<html>
<body>
<form action="wc.php" method="post">
Enter Name
<input type="text" name="name"><br><br>
Enter Password
<input type="password" name="pass"><br><br>
<input type="submit" name="submit" value="Submit">
```

```
</form>
</body>
</html>
wc.php
<html>
<body>
Welcome
<?php
echo $_POST["name"];?><br><br>
Your Password is
<?php
echo $_POST["pass"];
?>
```

Exercise

Fill in the blanks

1. PHP is _____ scripting language.

Ans.: Server

2. PHP is _____ language i.e. there is no need for compilation.

Ans.: interpreted

3. A variable starts with _____ sign followed by variable name.

Ans.: \$

4. An _____ is a variable, which can hold more than one value at a time.

Ans.: array

5. Information can be passed to functions through _____.

Ans.: arguments

State True/False

1. PHP is platform dependent scripting language.

Ans.: False

2. \$_POST is an array of variables passed via the URL parameters.

Ans.: False

A function is a block of statements that can be used repeatedly in a program.

3. Ans.: True

PHP cannot be embedded along with HTML tags.

4. Ans.: False

GET should NEVER be used for sending sensitive information.

5. Ans.: True

Ans.: True

Multiple Choice Question (1 correct)

1. The program file of PHP have _____ extension.

- (a) .asp
- (b) .php
- (c) .js
- (d) .txt

Ans.: (b)

2. A variable declared _____ a function has global scope.

- (a) outside
- (b) anywhere
- (c) inside
- (d) none

Ans.: (a)

3. The _____ function returns a part of a string.

- (a) trim()
- (b) ucwords()
- (c) substr()
- (d) strpos()

Ans.: (c)

Multiple Choice Question. (2 correct)

1. The _____ & _____ are valid datatype in PHP.

- (a) Double
- (b) Varchar
- (c) Integer
- (d) Array
- (e) BigInt

Ans.: (c,d)

2. Single line comment in PHP is possible using _____.

- (a) //
- (b) /* */
- (c) #
- (d) <!-->
- (e) \$

Ans.: (a,b)

Multiple Choice Question. (3 correct)

1. In PHP, three types of arrays are _____.
- (a) Indexed (b) Simple
(c) Associative (d) Multidimensional
(e) Complex (f) General

Ans. : (a,c,d)

2. The scope of variable can be _____.
- (a) local (b) global (c) universal
(d) static (e) final (f) outside

Ans. : (a,b,d)

Brief Questions

1. Explain any two features of PHP?

Ans. : Refer answer the following Q1 5.3

2. What are the rules to declare variable in PHP?

Ans. : Refer answer the following Q3 5.4

3. What is server sidescripting?

Ans. : Refer answer the following Q1 5.2

4. List the supported datatypes in PHP

Ans. : Refer answer the following Q5 5.4

5. Explain any two string manipulation function.

Ans. : Refer answer the following Q1 5.5

Write Programs for the following

1. Write a PHP code which calculates square of any number using form.

Ans. : Refer PHP Extra programs for practice Program No 3

2. Write a PHP code to count no. of words in the given string.

Ans. : Refer PHP Extra programs for practice Program No 13

3. Create a website with two PHP webpage in which each webpage is connected.

The first page of the website contains two form fields for taking 'name' and 'password' from users. On onclick event, details of forms should be displayed on second webpage.

Ans. : Refer PHP Extra programs for practice Program No 14

6

E-Commerce & E-Governance

Chapter at a Glance

6.1 Introduction to E-Commerce

6.2 Definition of E-Commerce

Advantages of E-commerce: -
Global scope, anytime shopping,
cost saving, public services.

Disadvantages of E-commerce: -
Setup cost, security, goods
delivery, physical presence.

Types of E-commerce: -
Business to Consumer, Business to
Business, Consumer to Consumer,
Consumer to Business

6.3 E-Commerce
Trade cycle

Meaning, Phases of Trade cycle are
Pre-sales, Execution, Settlement, After-Sales

6.4 Forms of
E-Commerce

M-commerce, Social Commerce.

6.7 E-governance

Advantages of E-Governance, Types of E-Governance
are Government to Citizen, Government to Business,
Government to Government, Government to Employee.

6.4 Modes of
Payment

Credit cards, Mobile Payments,
Bank Transfers, E-Wallets.

6.6 E-Commerce
Technology

Concept of Electronic Data Interchange (EDI)

6.8 Security measures
in E-Commerce

Encryption, types of encryption i.e.
Symmetric and Asymmetric,
Digital Signature, Digital Certificate.

Fill in the Blanks

6.1 Introduction

1. E-commerce stands for
2. is nothing but buying and selling of goods.

Ans.: Commerce

6.2 Definition of E-Commerce

3. is the process of buying and selling of goods and services using electronic medium.

Ans.: Electronic Commerce

4. is also referred as paperless exchange of business information.

Ans.: Electronic Commerce

5. Commerce focuses on the exchange of products and services through personal interactions.

Ans.: Traditional

6. Commerce has limited business hours.

Ans.: Traditional

7. Commerce is limited to a particular geographical location.

Ans.: Traditional

8. Modes of payment in commerce include cash, cheques and credits cards.

Ans.: Traditional

9. In Commerce scope is local.

Ans.: Traditional

10. Commerce trading activities are online via the internet and can be considered automatic.

Ans.: Electronic

11. Commerce is 24 x 7, it can be done anytime day and night.

Ans.: Electronic

12. In Commerce modes of payment are bank transfer, credit card, e-wallet etc.

Ans.: Electronic

13. In Commerce scope is global.

Ans.: Electronic

14. B2C stands for

Ans.: Business to Consumer

15. In model business sells its product directly to a customer.

Ans.: B2C (Business to Consumer)

16. B2B stands for

Ans.: Business to Business

17. In model business sells its products to an intermediate buyer.

Ans.: B2B (Business to Business)

18. C2C stands for

Ans.: Consumer to Consumer

19. In model, consumer helps consumer to sell their assets by publishing their information on the website.

Ans.: C2C (Consumer to Consumer)

20. C2B Stands for

Ans.: Consumer to Business

21. In model, consumers have products or services of value that can be consumed by businesses.

Ans.: C2B (Consumer to Business)

6.3 E-Commerce Trade cycle

22. A is the series of exchanges between a customer and supplier that takes place when a commercial exchange is executed.

Ans.: Trade Cycle

23. The phase of Trade cycle consist of two steps like search and negotiate.

Ans.: Pre-sales

24. The phase of Trade cycle consists of Order and Delivery.

Ans.: Execution

25. The phase of Trade Cycle consist of Invoice and Payment.

Ans.: Settlement

26. The phase of Trade Cycle consist of warranty and After Sale Services.

Ans.: After sales

6.4 Modes of Payment

27. transfer is used when money is sent from one bank account to another.

Ans.: Bank

28. is a type of electronic card which is used for transactions made online through a computer or a smartphone.

Ans.: E-Wallet

6.5 Forms of E-commerce

29. is the buying and selling of goods and services through wireless handheld devices such as smartphones and tablets.
Ans. : M-Commerce (Mobile Commerce)
30. Commerce is a form of electronic, commerce that involves social media that supports social interaction.
Ans. : Social
31. Commerce is the use of networking websites such as facebook, Instagram and Twitter as vehicles to promote and sell products and services.
Ans. : Social

6.6 E-Commerce Technology

32. EDI stands for
Ans. : Electronic Data Interchange
33. is the electronic interchange of business information using a standardized format
Ans. : EDI (Electronic Data Interchange)
34. The is a process which allows one company to send information to another company electronically rather than a paper.
Ans. : EDI (Electronic Data Interchange)
35. Business entities conducting business electronically are called
Ans. : Trading Partners
36. E-wallet is a type of account in which a user-can store money for any future online transaction.
Ans. : Prepaid
37. is computer-to-computer interchange of strictly formatted documents via telecommunication or physically transported on electronic storage media.
Ans. : EDI (Electronic Data Interchange)

6.7 E-governance

38. signifies the implementation of information technology in the government processes and function.
Ans. : E-Governance
39. E-Governance is of types.
Ans. : 4 (Four)
40. G2C stands for
Ans. : Government-to-Citizen

41. The refers to the government services which enable citizens to get access to wide variety of public services.
Ans. : G2C (Government to Citizen)
42. G2B stands for
Ans. : Government to Business
43. The is the exchange of services between Government and Business Organization.
Ans. : G2B (Government to Business)
44. The consists of many services exchanged between business sectors and government.
Ans. : G2B (Government to Business)
45. G2G stands for
Ans. : Government to Government
46. The refers to the interaction between different government departments, organizations and agencies.
Ans. : G2G (Government to Government)
47. The E-Governance which provides safe and secure inter-relationship between domestic and foreign government is
Ans. : G2G (Government to Government)
48. G2E stands for
Ans. : Government to Employee
49. The is the internal part to G2G sector.
Ans. : G2E (Government to Employee)
50. The governance aims to bring employees together and improve knowledge sharing.
Ans. : G2E (Government to Employee)

6.8 Security measures in E-Commerce

51. is widely used on the internet to protect user information being sent between a browser and a server.
Ans. : Encryption
52. converts plain text into Cipher text.
Ans. : Encryption
53. converts Cipher text into plain text.
Ans. : Decryption
54. A is also known as an electronic signature.
Ans. : Digital Signature
55. A guarantees the authenticity of an electronic document.
Ans. : Digital Signature

56. A is an electronic password that allows a person to exchange data securely over the Internet using public key infrastructure.
Ans.: Digital Certificate

57. is also known as a public key certificate or identity certificate.
Ans.: Digital Certificate

58. PKI stands for
Ans.: Public Key Infrastructure

True or False

6.1 Introduction

1. E-Commerce stands for Electronic commerce.
Ans.: True

2. Commerce is an important part of business.
Ans.: True

3. Commerce means buying and selling of goods and services.
Ans.: True

6.2 Definition of E-Commerce

4. E-Commerce is a process of buying and selling of goods or services using Internet.
Ans.: True

5. E-Commerce focuses on the exchange of products and services through personal interactions.
Ans.: False

6. Traditional Commerce is manual.
Ans.: True

7. E-Commerce trading activities are online via the internet.
Ans.: True

8. Traditional Commerce is limited to business hours.
Ans.: True

9. E-Commerce is 24 x 7.
Ans.: True

10. E-Commerce provides face to face interaction.
Ans.: False

11. Traditional Commerce is limited to a particular geographical location.
Ans.: True

12. E-Commerce is local.
Ans.: false

13. Modes of payments in E-commerce are bank transfer, e-wallet etc.
Ans.: True

14. Goods and delivery of services is instant with Traditional commerce.
Ans.: True

15. Traditional Commerce's Scope is global.
Ans.: false

16. E-Commerce reduces paper work.
Ans.: True

17. E-commerce increases the cost of searching a product.
Ans.: False

18. E-commerce does not allow intermediaries.
Ans.: True

19. Set-up cost of E-Commerce is expensive.
Ans.: True

20. In B2C Model business sells its products to an intermediate buyer who then sells product to the final customer.
Ans.: False

21. In B2C model business sells its product directly to customer.
Ans.: True

22. In C2C model, consumer helps consumer to sell their assets by publishing their information on website.
Ans.: True

23. OLX, Quikr, online auction are the examples of B2B model.
Ans.: False

24. In C2B model consumers have products or services of value that can be consumed by businesses.
Ans.: True

25. Types of E-commerce are B2B, C2B, C2C etc.
Ans.: True

6.3 E-Commerce Trade cycle

26. Trade Cycle is the series of exchanges between a customer and supplier that take place when a commercial exchange is executed.
Ans.: True

27. Execution phase consists of two steps like search and negotiate.
Ans.: False

28. The execution phase consists of Order and Delivery.
Ans.: True

29. The After sales phase consists of Invoice and Payment.

Ans.: False

30. Invoice means customer will receive a bill for purchased product.

Ans.: True

31. After sales phase consists of warranty and after sales services.

Ans.: True

32. Settlement means customer will do complaints about the performance of product and get maintenance service from supplier.

Ans.: False.

6.4 Modes of Payment

33. Credit cards are most common way for customers to pay online.

Ans.: True

34. Mobile payment apps are UPI, Paytm, Paypal etc.

Ans.: True

35. Bank transfer cannot be used when money is sent from one bank account to another.

Ans.: False

36. NEFT, IMPS etc. are the examples of Bank transfer.

Ans.: True

37. E-Wallet is electronic card which is used for transactions made online through a computer or smartphone.

Ans.: True

38. E-wallet is a type of post paid account.

Ans.: False

39. State bank Buddy, Paytm wallets are examples of E-wallets.

Ans.: True

6.5 Forms of E-commerce

40. Some common forms of E-commerce are C2B, B2B, C2C etc.

Ans.: False

41. M-Commerce is buying and selling of goods and services through smartphones and tablets.

Ans.: True

42. M-Commerce enables users to access online shopping by using a desktop computer.

Ans.: False

43. The applications of M-Commerce are mobile banking, E-bill payment, online auctions etc.

Ans.: True

44. Social Commerce is a form of electronic commerce that involves online media that supports social interaction.

Ans.: True

6.6 E-Commerce Technology

45. EDI stands for Electronic Data Information.

Ans.: False

46. EDI is the non-electronic interchange of business information using a standardised format.

Ans.: False

47. EDI is a process which allows one company to send information to another electronically rather than paper.

Ans.: True

48. EDI is paperless exchange of electronic information.

Ans.: True

49. Business entities conducting business electronically are called trading partners.

Ans.: True

50. Two most common documents exchanged using EDI are purchase orders and invoices.

Ans.: True

6.7 E-governance

51. E-Governance is the implementation of information technology in the government processes and function.

Ans.: True

52. E-Governance delivers SMART governance.

Ans.: True

53. Types of E-Governance are B2B, B2C, C2C.

Ans.: False

54. The G2C refers to the government services which enable citizens to get access to wide variety of public services.

Ans.: True

55. License renewals and paying tax are the examples of G2C.

Ans.: True

56. The G2B is the internal part of G2G sector.

Ans.: False

57. G2B provides access to relevant forms needed to comply.

Ans.: True

58. The G2G refers to the interaction between different government departments, organizations and agencies.

Ans.: True

59. In G2G type of e-governance, government agencies can share the same database using online communication.

Ans.: True

60. The G2E is the internal part of G2G sector.

Ans.: True

61. Checking balance of holiday is example of G2E.

Ans.: True

62. Reviewing salary payment records, applying for leave is the example of G2C.

Ans.: False

63. Digital India is a campaign launched by the Government of India in order to make Government's Services available to citizens electronically.

Ans.: True

64. e-mitra project, e-Seva project, CET are the examples of successful implementation of E-Governance.

Ans.: True

6.8 Security measures in E-Commerce

65. Encryption is used to protect user information being sent between browser and a server.

Ans.: True

66. Encryption converts plain text into coded form of data.

Ans.: True

67. Conversion of plain text into Cipher text is called decryption.

Ans.: False

68. Decryption converts Cipher text into plain text.

Ans.: True

69. Encryption is of two types Symmetric and Asymmetric.

Ans.: True

70. Digital Signature is also known as electronic signature.

Ans.: True

71. Digital Signature is also known as public key certificate.

Ans.: False

72. Digital Signature is on electronic passwords that allows organization to exchange data securely over the Internet using PKI.

Ans.: True

MCCQ (One Correct Answers)

6.1 Introduction

1. E-Commerce stands for

- (a) Engage Commerce
- (b) Evolve Commerce
- (c) Electronic Commerce
- (d) Easy Commerce

Ans.: (c)

6.2 Definition of E-Commerce

2. is the process of buying and selling of goods and services using electronic medium.

- (a) E-Commerce
- (b) Digital Certificate
- (c) E-Governance
- (d) Digital Signature

Ans.: (a)

3. Commerce focuses on the exchange of products and services through personal interactions.

- (a) E-Governance
- (b) Electronic
- (c) Digital Signature
- (d) Traditional

Ans.: (d)

4. Commerce has limited to business hours.

- (a) Traditional
- (b) Electronic
- (c) Digital
- (d) E-governance

Ans.: (a)

5. Commerce provides face to face interaction.

- (a) Electronic
- (b) Traditional
- (c) Digital
- (d) Web hasting

Ans.: (b)

6. In Commerce scope is local.

- (a) Electronic
- (b) Divisional
- (c) Digital
- (d) Traditional

Ans.: (d)

7. Commerce has no time limits, it is available 24 x 7.

- (a) Electronic
- (b) Divisional
- (c) Traditional
- (d) Digital

Ans.: (a)

8. In Commerce trading activities are online via the internet.
 (a) Digital (b) Traditional
 (c) Electronic (d) Divisional

Ans.: (c)

9. In Commerce scope is a global.
 (a) Digital (b) Electronic
 (c) Traditional (d) Divisional

Ans.: (b)

10. Commerce reduces the paper work and lower the transaction cost.
 (a) Electronic (b) Divisional
 (c) Traditional (d) local

Ans.: (a)

11. application provides users with more options to compare and select the cheaper and better option.
 (a) Z-Commerce (b) G - Commerce
 (c) E-Commerce (d) V-Commerce

Ans.: (c)

12. Commerce allows the customers and the business to be in touch directly without any intermediaries.
 (a) Traditional (b) Electronic (c) Divisional (d) Digital

Ans.: (b)

13. In model business sells its product directly to a customer.
 (a) C2B (b) B2C (c) B2B (d) C2C

Ans.: (b)

14. In model, business sells its products to an intermediate buyer who then sells the product to the final customer.
 (a) C2B (b) B2C (c) B2B (d) C2C

Ans.: (c)

15. In model, consumer helps consumer to sell their assets by publishing their information on the website.
 (a) C2B (b) B2C (c) B2B (d) C2C

Ans.: (d)

16. On-line auction is example of model.
 (a) C2B (b) B2C (c) B2B (d) C2C

Ans.: (d)

17. In model consumers have products or services of value that can be consumed by businesses.
 (a) C2B (b) B2B (c) C2C (d) B2C

Ans.: (a)

6.3 E-Commerce Trade cycle

18. A is the series of exchanges between a customer and supplier that takes place when a commercial exchange is executed.
 (a) EDI (b) Trade Cycle
 (c) Encryption (d) Decryption

Ans.: (b)

19. phase of Trade cycle consist of two steps like search and negotiate.
 (a) Presale (b) Execution (c) Settlement (d) After sales

Ans.: (a)

20. phase of Trade cycle consists of Order and Delivery.
 (a) Presale (b) Execution (c) Settlement (d) After sales

Ans.: (b)

21. In phase of Trade Cycle the customer sends an order for the selected product and receives delivery of the product.
 (a) Presale (b) After sales (c) Execution (d) Settlement

Ans.: (c)

22. The phase of Trade Cycle consist of warranty and After Sale Services.
 (a) Presale (b) Execution (c) Settlement (d) After sales

Ans.: (d)

23. services means customer will do complaints about the performance of product and get maintenance service from the suppliers.
 (a) Presale (b) After sales (c) Execution (d) Settlement

Ans.: (b)

6.4 Modes of Payment

24. offer a quick solution for customers to purchase on e-commerce website.
 (a) Mobile Payments (b) Digital Signature
 (c) Cost Payments (d) Cheque Payments

Ans.: (a)

25. Apps the BHIM, UPI, paytm are the examples of
- (a) cheque payment
 - (b) cash payment
 - (c) EDI
 - (d) Mobile payments

Ans.: (d)

26. is used when money is sent from one bank account to another.

- (a) EDI
- (b) Bank Transfer
- (c) Digital Signature
- (d) Trade Cycle

Ans.: (b)

27. NEFT, IMPS are the examples of

- (a) Credit Card
- (b) Trade Cycle
- (c) Debit Card
- (d) Bank Transfer

Ans.: (d)

28. is a type of electronic card which is used for transactions made online through a Computer or a smart-phone.

- (a) E-Wallets
- (b) E-Book
- (c) E-Pocket
- (d) E-Draw

Ans.: (a)

29. State Bank Buddy, paytm wallets are the examples of

- (a) E-Book
- (b) E-Pocket
- (c) E-Wallet
- (d) E-Draw

Ans.: (c)

30. E-wallet is a type of account in which a user can store money for any future online transaction.

- (a) Pre-paid
- (b) Cash-paid
- (c) Bank paid
- (d) Cheque paid

Ans.: (a)

6.5 Forms of E-commerce

31. is the buying and selling of goods and services through wireless handheld devices such as smartphones and tablets.

- (a) Trade Cycle
- (b) M-Commerce
- (c) Social Commerce
- (d) EDI

Ans.: (b)

32. enables users to access online shopping platforms without using desktop computer.

- (a) M-Commerce
- (b) EDI
- (c) T-Commerce
- (d) Trade Cycle

Ans.: (a)

33. Mobile banking, E-bill payment, ticket booking are the examples of
- (a) EDI
 - (b) Trade Cycle
 - (c) M-Commerce
 - (d) Digital Certificate

Ans.: (c)

34. Commerce is a form of electronic commerce that involves social media that supports social interaction.

- (a) Social
- (b) National
- (c) Local
- (d) Divisional

Ans.: (a)

35. Commerce is a subset of electronic commerce that involves social media like facebook, Instagram and Twitter.

- (a) Local
- (b) Divisional
- (c) National
- (d) Social

Ans.: (a)

6.6 E-Commerce Technology

36. EDI stands for

- (a) Easy Data Interchange
- (b) Economic Data Interchange
- (c) Electronic Data Interchange
- (d) Enable Data Interchange

Ans.: (c)

37. is the electronic interchange of business information using a standardized format.

- (a) EDI
- (b) Trade Cycle
- (c) Digital Signature
- (d) Digital Certificate

Ans.: (a)

38. is a process which allows one company to send information to another company electronically rather than a paper.

- (a) Trade Cycle
- (b) EDI
- (c) Social Commerce
- (d) Mobile Commerce

Ans.: (b)

39. Business entities conducting business electronically are called

- (a) Global partners
- (b) Local partners
- (c) Visiting partners
- (d) Trading partners

Ans.: (d)

6.7 E-governance

40. is the implementation of information technology in the government processes and functions.
- (a) E-Governance (b) E-Commerce
(c) Social Commerce (d) M-Commerce
- Ans.: (a)
41. The type of e-governance refers to the government services which enable citizens to get access to wide variety of public services.
- (a) G2E (b) G2C (c) G2B (d) G2G
- Ans.: (b)
42. License renewals and paying tax can be done through type of E-Governance.
- (a) G2E (b) G2G (c) G2C (d) G2B
- Ans.: (c)
43. The type of E-governance is the exchange of services between government and business organizations.
- (a) G2C (b) G2B (c) G2G (d) G2E
- Ans.: (b)
44. The type of E-governance refers to the interaction between different government departments, organizations and agencies.
- (a) G2C (b) G2B (c) G2G (d) G2E
- Ans.: (c)
45. In type of E-governance, government agencies can share the same database using on line communication.
- (a) G2C (b) G2B (c) G2G (d) G2E
- Ans.: (c)
46. The type of E-governance is the internet part of G2G sector.
- (a) G2C (b) G2B (c) G2G (d) G2E
- Ans.: (d)
47. type of E-Governance provides facilities to employers like applying for leave, reviewing salary payment record and checking balance of holiday.
- (a) G2C (b) G2B (c) G2G (d) G2E
- Ans.: (d)

6.8 Security measures in E-Commerce

48. is used on the internet to protect user information being sent between a browser and a server.
- (a) Encryption (b) Decryption
(c) Digital Signature (d) Digital Certificate
- Ans.: (a)
49. converts plain text into Cipher text.
- (a) Decryption (b) Encryption
(c) Digital Signature (d) Digital Certificate
- Ans.: (b)
50. converts Cipher text into plain text.
- (a) Decryption (b) Encryption
(c) Digital Signature (d) Digital Certificate
- Ans.: (a)
51. is of two types symmetric and Asymmetric.
- (a) Encryption (b) Private key
(c) Public key (d) Decryption
- Ans.: (a)
52. A is also known as an electronic signature.
- (a) Digital Certificate (b) Digital Signature
(c) Cryptography (d) EDI
- Ans.: (b)
53. PKI stands for
- (a) Public Key Infrastructure (b) Personal Key Certificate
(c) Publish Key Certificate (d) Person Key Certificate
- Ans.: (a)
54. is also known as Public key certificate or identify certificate.
- (a) EDI (b) Digital Certificate
(c) Trade Cycle (d) Digital Signature
- Ans.: (b)
55. A is an electronic password that allows organization to exchange data securely over the Internet using PKI.
- (a) Digital Signature (b) EDI
(c) Trade Cycle (d) Digital Certificate
- Ans.: (d)

MCQ (Two Correct Answers)**6.2 Definition of E-Commerce**

1. E-Commerce is also referred as paperless exchange of business information using

- (a) EDI (b) Electronic Fund Transfer
(c) Private Key (d) Public Key

Ans.: (a), (b)

2. Advantages of E-Commerce are

- (a) Security (b) Global scope
(c) Cost saving (d) High setup cost

Ans.: (b), (c)

3. Disadvantages of E-Commerce are

- (a) High set up cost (b) Late delivery
(c) Public serves (d) Any time shopping

Ans.: (a), (b)

4. Types of E-Commerce are

- (a) B2C (b) C2B (c) G2G (d) G2E

Ans.: (a), (b)

5. Examples of B2C model are

- (a) Linux (b) Flipkart (c) Amazon (d) Window

Ans.: (b), (c)

6. Examples of C2C model are

- (a) Network provider (b) OLX
(c) EDI (d) Quikr

Ans.: (b), (d)

6.3 E-Commerce Trade cycle

7. Following are the phases of Trade cycle.

- (a) Pre-sales (b) EDI (c) Trade Cycle (d) Execution

Ans.: (a), (d)

8. Pre-sales consists of two steps and

- (a) Order (b) Delivery (c) Search (d) Negotiate

Ans.: (c), (d)

9. The execution phase consists of and

- (a) Order (b) Delivery (c) Search (d) Negotiate

Ans.: (a), (b)

10. The settlement phase consist of and

- (a) Order (b) Invoice (c) Search (d) Payment

Ans.: (b), (d)

11. The After sales phase consists of and

- (a) Order (b) Delivery (c) warranty (d) After sale service

Ans.: (c), (d)

6.4 Modes of Payment

12. Modes of payments are

- (a) M-Commerce (b) Mobile Payments
(c) E-Commerce (d) E-Wallets

Ans.: (b), (d)

13. Examples of Mobile payments apps are

- (a) BHIM (b) EDI (c) Paytm (d) Trade Cycle

Ans.: (a), (c)

14. Examples of Bank Transfers are

- (a) EDI (b) NEFT (c) IMPS (d) Cash Transfer

Ans.: (b), (c)

15. Examples of E-Wallets are

- (a) Paytm Wallets (b) State Bank Buddy
(c) EDI (d) Trade Cycle

Ans.: (a), (b)

6.5 Forms of E-commerce

16. Common forms of E-commerce are

- (a) Local Commerce (b) M-Commerce
(c) National Commerce (d) Social Commerce

Ans.: (b), (d)

17. Application of M-Commerce are

- (a) E-bill payment (b) Local Commerce
(c) Mobile Banking (d) Social Commerce

Ans.: (a), (c)

18. Social Commerce is the use of networking websites such as
 vehicles to promote and sell products and services. 88

- (a) G-mail
- (b) Google Docs
- (c) Facebook
- (d) Twitter

Ans.: (c), (d)

6.6 E-Commerce Technology

19. Two common documents can be exchanged using EDI are

- (a) Purchase orders
- (b) DOCS
- (c) Trading
- (d) Invoices

Ans.: (a), (d)

6.7 E-governance

20. Advantages of E-governance are

- (a) Increase of overall cost
- (b) Decrease convenience
- (c) High transparency
- (d) Reduced corruption

Ans.: (c), (d)

21. Type of E-Governance are

- (a) B2C
- (b) C2C
- (c) G2E
- (d) G2G

Ans.: (c), (d)

22. G2C type of E-governance provides services like And

- (a) License renewals
- (b) Paying tax
- (c) Trade Cycle
- (d) EDI

Ans.: (a), (b)

23. G2E type of E-governance provides Online facilities to employees.

- (a) License renewals
- (b) Salary payment record
- (c) Booking Tickets
- (d) applying for leave

Ans.: (b), (d)

24. Examples of successful implementation of E-Governance projects are and

- (a) e-seva
- (b) e-Mitra
- (c) e-tax
- (d) e-friend

Ans.: (a), (b)

6.8 Security measures in E-Commerce
 Encryption is of two types and

- 25. (a) Plaintext
- (b) symmetric
- (c) Coded text
- (d) asymmetric

Ans.: (b), (d)

26. Encryption consists of two processes and

- (a) EDI
- (b) Trade cycle
- (c) Encryption
- (d) Decryption

Ans.: (c), (d)

27. Encryption converts text into text.

- (a) Plain
- (b) Cipher
- (c) Random
- (d) General

Ans.: (a), (b)

28. Decryption converts text into text.

- (a) Cipher
- (b) Plain
- (c) Random
- (d) General

Ans.: (a), (b)

29. Following are the security measure in E-commerce.

- (a) EDI
- (b) Trade cycle
- (c) Digital signature
- (d) Digital certificate

Ans.: (c), (d)

MCQ (Three Correct Answers)

6.2 Definition of E-Commerce

1. Advantages of E-Commerce are

- (a) Global scope
- (b) Local scope
- (c) Cost saving
- (d) Time restriction
- (e) Anytime shopping
- (f) Involve intermediaries

Ans.: (a), (c), (e)

2. Disadvantages of E-Commerce are

- (a) Global scope
- (b) Expensive
- (c) Cost saving
- (d) Lack of personal touch
- (e) Anytime shopping
- (f) Late deliveries

Ans.: (b), (d), (f)

3. Types of E-Commerce are
- (a) B2C (b) G2E (c) B2B
(d) G2G (e) G2C (f) C2C

Ans. : (a), (c), (f)

6.3 E-Commerce Trade cycle

4. Following are the phases of Trade Cycle.

- (a) C2B (b) Presale (c) Execution (d) Settlement
(e) B2C (f) C2C

Ans. : (b), (c), (d)

6.4 Modes of Payment

5. Following are the Modes of Payment

- (a) Presale (b) Execution
(c) Settlement (d) Mobile payments
(e) Bank transfer (f) E-wallets

Ans. : (d), (e), (f)

6. Examples of Mobile payment apps are

- (a) BHIM (b) Trade Cycle (c) EDI
(d) UPI (e) Google pay (f) Google Docs

Ans. : (a), (d), (e)

6.5 Forms of E-commerce

7. Applications of M-Commerce are

- (a) Ticket booking (b) RTGS (c) NEFT
(d) E-Bill payment (e) IMPS (f) Online auctions

Ans. : (a), (d), (f)

8. Social Commerce is the use of networking websites such as and as vehicles to promote and sell products and services.

- (a) Facebook (b) Instagram (c) Twitter (d) Gmail
(e) Google Docs (f) Google pay

Ans. : (a), (b), (c)

6.8 Security measures in E-Commerce

9. Types of E-Governance are

- (a) G2C (b) G2G (c) C2B
(d) B2B (e) C2C (f) G2E

Ans. : (a), (b), (f)

10. Advantages of E-Governance are

- (a) Increased convenience (b) No transparency
(c) Reduction in overall cost (d) Increase in cost
(e) Expanded reach of government (f) More corruption

Ans. : (a), (c), (e)

11. Examples of successful implementation of E-Governance projects are

- (a) e-Mitra (b) B2B (c) C2B (d) e-Seva
(e) C2G (f) CFT

Ans. : (a), (d), (f)

6.8 Security measures in E-Commerce

12. Security measure in E-Commerce are

- (a) EDI (b) Trade Cycle
(c) Encryption (d) Digital Signature
(e) E-commerce (f) Digital Certificate

Ans. : (c), (d), (f)

Match the Following

6.2 Definition of E-Commerce

(1)	A	B
(1)	Traditional Commerce	(a) Scope is Global
(2)	E-Commerce	(b) Sells products to an intermediate buyer
(3)	B2C	(c) Helps consumer to sell their assets by publishing information on website
(4)	B2B	(d) Scope is local
(5)	C2C	(e) Consumers have products or services of value that can be consumed by business
(6)	C2B	(f) Sells products directly to a customer

Ans. : (1) - (d), (2) - (a), (3) - (f), (4) - (b), (5) - (c), (6) - (e)

6.3 E-Commerce Trade cycle

(1)

	A	B
(1) Presale	(a) Consists of Order and Delivery	
(2) Execution	(b) Consists of Warranty and After sales	
(3) Settlement	(c) Consists of Invoice and Payment	
(4) After sales	(d) Consists of Search and negotiate	

Ans. : (1) – (d), (2) – (a), (3) – (c), (4) – (b)

6.4 Modes of Payment

(1)

	A	B
(1) Credit cards	(a) Money sent from one bank to another	
(2) Mobile payments	(b) Type of prepaid account in which user can store money	
(3) Bank transfer	(c) Cards used by customers to pay online	
(4) E-Wallets	(d) Forms of E-commerce	
	(e) Offers quick solution for customers to purchase on e-commerce websites	

Ans. : (1) – (c), (2) – (e), (3) – (a), (4) – (b)

6.5 Forms of E-commerce, 6.6 E-Commerce Technology

(1)

	A	B
(1) M-Commerce	(a) Form of E-commerce that involves social media that supports social interaction	
(2) Social Commerce	(b) Electronic interchange of business information	
(3) EDI	(c) Buying and selling of goods and services through smart phones and tablets	

Ans. : (1) – (c), (2) – (a), (3) – (b)

6.7 E-governance

(1)

	A	B
(1) G2C	(a) Exchange of services between Government and Business organizations	
(2) G2B	(b) Is the internet part of G2G sector	
(3) G2G	(c) Refers to the interaction between different government departments, organization and agencies.	
(4) G2E	(d) Refers to government services which enable citizens to access wide variety of public services.	

Ans. : (1) – (d), (2) – (a), (3) – (c), (4) – (b)

6.8 Security measures in E-Commerce

(1)

	A	B
(1) Encryption	(a) Also known as electronic signature	
(2) Decryption	(b) Converts plain text into cipher text	
(3) Digital Signature	(c) Is a electronic password	
(4) Digital Certificate	(d) Converts chipper text into plain text	

Ans. : (1) – (b), (2) – (d), (3) – (a), (4) – (c)

Answer the Following

6.2 Definition of E-Commerce

1. Define E-Commerce.

Ans. :

- (i) E-Commerce is defined as the process of buying and selling of goods or services using an electronic medium such as Internet.
- (ii) E-commerce is also referred as a paperless exchange of business information using EDI, E-mail, Electronic fund transfer etc.

2. Explain Advantages and Disadvantages of E-Commerce.

Ans. :

Advantages of E-Commerce :

- (i) **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.

(ii) **Electronic transaction** : E-commerce reduces the paper work and significantly lower the transaction cost.

(iii) **Anytime shopping** : The great advantage of E-Commerce is the convenience. A customer can shop 24 x 7.

(iv) **No intermediaries** : Electronic commerce also allows the customer and the business to be in touch directly, without any intermediaries.

Disadvantages of E-Commerce :

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

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

(iii) **Goods Delivery** : There may arrive some problem with fulfillment 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.

3. Difference between Traditional Commerce and E-Commerce.

Ans. :

Traditional Commerce	E-commerce
Traditional commerce focuses on the exchange of products and services through personal interactions so it is manual.	E-commerce trading activities are online via the internet.
Traditional commerce is limited to business hours.	E-commerce is 24 x 7, it can be done anytime day and night.
Traditional commerce provides face to face interaction.	E-commerce can be termed as screen to face interaction.
Traditional commerce is limited to a particular geographical location.	E-commerce is global and has no physical limitation.
Modes of payment in traditional commerce include cash, cheques and credit cards.	In E-commerce modes of payments are bank transfer, credit card, e-wallet, mobile payment and many more.
Goods and delivery of services is instant with traditional commerce.	In E-commerce delivery of goods or services takes some time.
Traditional Commerce's scope is local.	E-commerce's scope is global.

4. Explain type of E-Commerce.

Ans. :

Types of E-Commerce are as follows :

(i) **Business to Consumer (B2C) :**

- (a) In B2C model, business sells its products directly to customer.
- (b) Customer can view and choose to order the products shown on the website.
- (c) The website will send notification and organization will dispatch the product to customer.
- (d) Examples Amazon, Flipkart etc.

(ii) **Business to Business (B2B) :**

- (a) In B2B model, business sells products to an intermediate buyer.
- (b) Buyer then sells the product to final customer.
- (c) Example Tata communications.

(iii) **Consumer to Consumer (C2C) :**

- (a) In C2C model, consumer helps consumer to sell their assets like cars, bikes, rent a room etc by publishing their information on websites.
- (b) Example OLX, Quikr online auction.

(iv) **Consumer to Business (C2B) :**

- (a) In C2B model, consumers have products or services of value that can be consumed by businesses.
- (b) For example A blog can be written by an author for a business to improve sale of product ebay.

6.3 E-Commerce Trade cycle

5. Explain phases of Trade Cycle.

Ans. :

A trade cycle is the series of exchanges, between a customer and supplier that take place when a commercial exchange is executed. A general trade cycle consists of following phases:

(i) **Pre-Sales** : It consist of two steps like Search and Negotiate. Customer search for required website for product to be purchased. In Negotiate step customer agrees supplier who offers good quality product at cheaper price and then customer agrees the terms forwarded by supplier.

(ii) **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.

- (iii) **Settlement** : This phase consist of Invoice (if any) and Payment. Invoice means customer will receive a bill for purchased product and after confirmation of received product, customer will pay for the same.
- (iv) **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. After sale services means customer will do complaints (if any) about the performance of product and get maintenance service from the supplier.

6.4 Modes of Payment

6. Explain various Modes of Payment.

Ans. :

- (i) **Credit Cards** : Credit cards are the most common ways for customers to pay online. Merchants can reach out to an international market with credit cards by integrating a payment gateway into their business.
- (ii) **Mobile Payments** : Mobile payments offer a quick solution for customers to purchase on e-commerce websites. Examples are apps like Paytm, Google Pay, BHIM etc.
- (iii) **Bank Transfers** : Bank transfer is used when money is send from one bank account to another. Transferring money from bank account is fast and safe then cash withdrawal. Example NEFT, IMPS etc.
- (iv) **E-wallets** : E-wallet is a type of electronic card which is sued for transactions made online through a computer or smart phone. It is a type of prepaid account in which user can store money for future transaction. Examples are State Bank Buddy, Paytm Wallets.

6.5 Forms of E-commerce

7. Write Short notes on :

- (i) M-commerce (Mobile Commerce)
(ii) Social Commerce

Ans. :

- (i) **M-commerce (Mobile Commerce)** :
- (a) M-commerce is buying and selling of goods and services through wireless devices such as smart phones and tablets.
- (b) M-Commerce enables the user to access online shopping platforms without using desktop computers.
- (c) Applications of M-Commerce are Mobile banking, E-bill payment, ticket booking etc.

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

6.6 E-Commerce Technology

8. Short note on Electronic Data Interchange (EDI).

Ans. :

- Electronic Data Interchange (EDI)**
- (i) EDI is the electronic interchange of business information using a standardized format.
- (ii) It is a process which allows one company to send information to another company electronically rather than on paper.
- (iii) Business entities conducting business electronically are called trading partners.
- (iv) In EDI, two most common documents which are exchanged are purchase order and invoices.

6.7 E-governance

9. What is E-Governance?

Ans. :

- (i) E-Governance signifies the implementation of Information Technology in the Government processes.
- (ii) The basic purpose of E-Governance is to simply processes for all, i.e. government, citizens, businesses etc. at all levels.
- (iii) E-Governance delivers SMART (S-Simple, M-Moral, A-Accessible, R-Responsive, T-Transparent Government).
10. List the advantages of E-Governance.

Ans. :

Advantages of E-Governance are :

1. Improves delivery and efficiency of government services
2. Improved government interactions with business and industry

3. Citizen empowerment through access to information
4. More efficient government management
5. Less corruption in the administration
6. Increased transparency in administration
7. Greater convenience to citizens and businesses
8. Cost reductions and revenue growth
9. Increased legitimacy of government
10. Improved relations between the public authorities and civil society
11. Explain types of E-Governance.

Ans. :

E-Governance is of 4 types depending on the specific types of services :

1. Government to Citizen (G2C) :

- (i) The Government to citizen refers to the government services which enable citizens to get access to wide variety of public services.
- (ii) Most of the government services fall under G2C.
- (iii) A citizen can have access to the services anytime from anywhere.
- (iv) Services like license renewals and paying tax are essential in G2C.
- (v) It also focuses on geographic land barriers.

2. Government to Business (G2B) :

- (i) G2B is the exchange of services between Government and Business organizations.
- (ii) G2B provides access to relevant forms needed to comply.
- (iii) The G2B consists of many services exchanged between business sectors and government.
- (iv) It aims at eliminating of paper work, cost and establish transparency in the business environment while interacting with government.

3. Government to Government (G2G) :

- (i) The Government to Government refers to the interaction between different government departments, organizations and agencies.
- (ii) In G2G government agencies can share the same database using online communication.
- (iii) The government departments can work together.
- (iv) G2G services can be at the local level or international level.
- (v) It provides safe and secure inter relationship between domestic or foreign government.

4. Government to Employee (G2E) :

- (i) The Government to Employee is the internal part of G2G sector.
- (ii) G2E aims to bring employees together and improvise knowledge sharing.
- (iii) G2E provides online facilities to the employees like applying for leave, reviewing salary payment record and checking the balance of holiday.
- (iv) This sector provides human resource training and development.
- (v) Examples of successful implementation of E-governance are e-Mitra, e-Seva project, CET (Common Entrance Test).

6.8 Security measures in E-Commerce

Explain process of Encryption.

12. Ans. :

- (i) Encryption is widely used on the internet to protect user information being sent between a browser and a server.
 - (ii) This includes passwords, payment information and other personal information that should be considered private.
 - (iii) Encryption converts Plain text into Cipher text means non readable form of data.
 - (iv) Decryption is opposite of encryption i.e. it converts Cipher text into Plain text.
 - (v) **Encryption is of two types : Symmetric and Asymmetric.**
13. Write short notes on :

- (a) Digital Signature
- (b) Digital Certificate

Ans. :

(a) Digital Signature :

- (i) Digital Signature is also known as electronic signature.
- (ii) Digital Signature guarantees the authenticity of an electronic document or message in digital communication and uses encryption technique to provide proof of original and unmodified documentation.
- (iii) Digital Signatures are used in E-commerce, financial transactions.
- (iv) This is the direct transfer of information between two partners.

(b) Digital Certificate :

- (i) Digital Certificate is an electronic record "password" that allows a person, organization to exchange data securely over the internet using the public key infrastructure (PKI).
- (ii) It is also known as public key certificate or identity certificate.
- (iii) Using Digital Certificate information is transferred between two authorized partners who have digital certificates issued by supreme authority.

Exercise

Fill in the blanks.

- E-Commerce's scope is
Ans.: global
- A customer can do shopping online using type of E-Commerce.
Ans.: B2C
- The phase consist of Order and Delivery.
Ans.: execution
- E-wallet is a type of account in which a user can store his/her money for any future online transaction.
Ans.: prepaid
- EDI is exchange of information.
Ans.: electronic
- The type of e-governance refers to the government services which enable citizens to get access to wide variety of public services.
Ans.: G2C
- The e-governance which provides safe and secure inter-relationship between domestic or foreign government is
Ans.: G2G

State True/False.

- G2C type of E-commerce deals with Business and Customer.
Ans.: False
- The lack of a personal touch can be a disadvantage for many types of services and products in E-commerce.
Ans.: True
- Checking the balance of holiday is an example of G2C.
Ans.: False
- E-commerce provides more options to compare and select the cheaper and better options.
Ans.: True
- M-commerce can be used through desktop computer.
Ans.: False

Multiple Choice Question. (1 correct answer)

- Invoice and payment are included in phase of trade cycle.
- (a) Presale (b) execution (c) settlement (d) After sale
Ans.: (c)
 - License renewal is an example of e-governance.
(a) G2C (b) G2B (c) G2G (d) G2E
Ans.: (a)

Multiple Choice Question. (2 correct answer)

- Encryption consist of two processes and
(a) encryption (b) signature (c) decryption
(d) digitization (e) security
Ans.: (a, c)
- Social commerce is a subset of electronic commerce that involves social media like and
(a) Facebook (b) Instagram (c) gmail
(d) whatsapp (e) software
Ans.: (a, b)

Match the following.

A	B
1. M-commerce	(a) Coded form of data
2. Cipher Text	(b) B2B
3. EDI	(c) E-bill payment
4. Wholesaler-to	(d) Paperless exchange of information
5. License renewal services	(e) G2G
6. Online facility to employees like leave	(f) G2C
7. Government agencies share same database	(g) G2E

Ans.: 1-c, 2-a, 3-d, 4-b, 5-f, 6-g, 7-e

Answer in brief.

1. Explain phases of trade cycle.

Ans. : Refer 6.3, Q. 1

2. Explain M-Commerce.

Ans. : Refer 6.5, Q. 1

3. Describe process of encryption.

Ans. : Refer 6.8, Q. 1

4. What is E-governance.

Ans. : Refer 6.7, Q. 1

5. List out advantages of E-commerce.

Ans. : Refer 6.2, Q.2

6. Which are the different types of e-governance?

Ans. : Refer 6.7, Q. 3

7. State two examples of G2E services.

Ans. : Refer 6.7, Q. 3

8. Write any four advantages of e-governance.

Ans. : Refer 6.7, Q. 2

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