HTML

1.Why do we use semantic element instead element ?
In case of a element,we have to give an id as an attribute which tells what kind of content it is holding,either body or header or footer,etc.In case of a semantic element of HTML5,the name clearly tells what kind of content it is holding,that is,<header> element holds header related information,<footer> element holds footer related information.

2.What are Block-level Elements ?
A block-level element starts on a new line and takes up the full width available.

<h1> to <h6>
<p>
<form>
<header>
<footer>
<section>

3.What are Inline Elements ?
An inline element doesn't start on a new line and only takes up as much width as necessary.

<a>
<img>

4.What are the different modes of DOCTYPE declaration ?
Quirks mode and Almost Standards mode, and Full Standards mode.

5.How do I see which mode is used ?
In Firefox, select View Page Info from the context menu, and look for Render Mode.

6.What is the difference between web-garden and web-farm ?
Web-garden is a web hosting system.It is a multi processors setup,that is,it is a single server.
Web-farm is a web hosting system.web-farm is a group of two or more servers used to host the same site.web-farm increases the capacity of a web-site,and improves the availability by providing fail-over. web-farm is used for high-traffic and mission critical web sites.

7.What is XSS ?
XSS is cross site scripting,which enables attackers to inject client-side script into web pages viewed by other users.

8.What are the affects of XSS ?
The affects of XSS are information disclosures, content spoofing, and stolen credentials.

9.How many types of XSS ?
Three types of XSS,they are: persistent, non-persistent and DOM based.

10.What is Progressive enhancement ?
Progressive enhancement is the opposite of Graceful degradation.Progressive enhancement builds pages for all the browsers.
Progressive enhancement is more complicated as it takes more time and effort.
Google has encouraged the adoption of progressive enhancement to help our systems and a wider range of browsers see usable content and basic functionality when certain web design features are not yet supported.
net is a monthly print magazine that publishes content on web development and design.
net magazine chose progressive enhancement as #1 on its list of Top Web Design Trends for 2012.
Progressive enhancement was coined by Steven Champeon at South by SouthWest Interactive conference on March 11,2003 in Austin.
The core principles of Progressive enhancement are:
Basic content should be accessible to all web browsers
Basic functionality should be accessible to all web browsers
Enhanced layout is provided by externally linked CSS
Enhanced behavior is provided by externally linked Javascript
End-user web browser preferences are respected
Both Graceful degradation and Progressive enhancement consider how well a web site works in a variety of browsers on a variety of devices.The key is where they place their focus and how this affects the workflow.

11.What is Graceful degradation ?
Graceful degradation builds pages for the most modern browsers first and then converts them to work with less functional browsers.
Graceful degradation can be used more easily as a patch for an already existing product,it means harder maintenance later on,but requires less initial work.
Degrading gracefully means "looking back" whereas enhancing progressively means "looking forward".

12.When to use Graceful degradation ?
when you’re retrofitting an old product and when you don’t have time to change or replace it.
when the product you have is an edge case,for example very high traffic sites where every milliseconds of performance means a difference of millions of dollars.
when your product is so dependent on scripting that it makes more sense to maintain a “basic” version rather than enhancing one (such as Maps,email clients,feed readers)

13.When to use Progressive enhancement ?
when a new browser comes out or a browser extension becomes widely adopted,you can enhance to yet another level without having to touch the original solution - (Graceful degradation would require you to alter the original solution)

14.How do you ensure an application is faster ?
(i) By reducing the number of API calls,
(ii) By using minified versions (that is,not using the regular versions),
(iii) By reducing DOM lookups,
(iv) By unbinding the Event handlers,
(v) By using local variables.

15.What happens If DOCTYPE is not specified ?
DOCTYPE makes the browser render the page in “standard mode”.In standard mode,browser renders the page according to CSS specifications.
If DOCTYPE is not specified,then the browser renders the page in “quirks mode”.In quirks mode,browser renders the page but not according to CSS specifications,which means the style sheets may not be implemented as planned.

16.What is DOCTYPE sniffing or DOCTYPE switching ?
The process by which a browser chooses a rendering mode based on the DOCTYPE declaration is known as DOCTYPE switching.

17.What is minify ?
Minify means removing white space characters, new line characters, comments, and block delimiters.These types of characters are used to add readability to the code but they are not required for the code to execute properly.Minify speeds up the page loading.

18.What are HTML5 form elements ?
<datalist> element : specifies a list of pre-defined options for an input element.Users will see a drop-down list of pre-defined options as they input data.The list attribute of <input> element must refer to the id attribute of the <datalist> element.

<keygen> element :provides a secure way to authenticate users.it specifies a key-pair generator field in a form.when a form is submitted,two keys are generated one is private and the other is public.The private key is locally stored and the public key is sent to the server.The public key is used to authenticate the users in the future.

<output> element : represents the result of a calculation.

19.What is HTML Bootstrapping ?
To declare where our application sits in the DOM,typically the <html> element,we need to bind an ng-app attribute with the value of our module(that is, app).This tells Angular where to bootstrap our application.

20.What are meta tags ?
Meta tags provide meta data about the HTML document.Meta data will not be displayed on the page,but will be machine parsable.Meta data can be used by browsers for displaying the content or reloading a page.
Meta data can be used by search engines for keywords.
Meta data can be used by other web services.

21.Where can I define the meta tags ?
Meta tags are defined in the <head> element.

22.Do meta tags have an end tag?
In HTML,meta tag has no end tag.But in XHTML,meta tag must be provided with an end tag.

23.What kind of meta tags have you used ?
(i)Title tag: The text in the <title> tag will be seen at the top of your browser.
(ii)Meta Keywords Attribute: To define keywords for search engines.
(iii)Meta Description Attribute: To briefly describe the page.
(iv)Meta Robots Attribute: To tell the the search engine crawlers (that is,robots or bots) what they should do with the page.
(v)Meta http-equiv Attribute: To refresh the document.

24.What is the size of local storage in HTML5 ?
5MB

25.Do all HTML elements have end Tag ?
The elements which don't have an end tag are called as an "Empty elements".
The Empty elements are:

<input>
<img>
<meta>

26.What is an img map tag ?
The map tag is used to define an image with clickable areas.
The "name" attribute of map tag should match with the "usemap" attribute of img tag.
The "map element" contains a number of "area elements" that define the clickable areas in the image map.

27.What are the new features of HTML5 ?
(i)Semantic elements
(ii)Form elements
(iii)Media elements like Audio tag and Video tag : The additional features of Audio tag and Video tag are ; <embed> which is a container for third party applications.<track> which is for adding text tracks to media.<source> which is for audio or video from multiple sources.
(iv)Graphics like SVG element and Canvas element
(v)API's like Geolocation,Drag and Drop,Local storage,Application caching,Web workers,Web Sockets,and Web Storage.

28.What is HTML5 shiv ?
To enable the styling of HTML5 elements in versions of Internet Explorer prior to version 9,which do not allow unknown elements to be styled without Javascript,we use HTML5Shiv.

29.What is a Modernizr ?
Modernizr: is a JavaScript library used to detect HTML5 and CSS3 features in various browsers.

30.What are Web shims ?
Web shims: will automatically detect and polyfill the missing features,like semantic tags,canvas, web storage, geolocation, forms and multimedia,on the user's browser.

31.What is a selectivizr ?
Selectivizr: is a JavaScript utility that emulates(to work in the same way as another computer) CSS3 pseudo-classes and attribute selectors in Internet Explorer 6-8.

32.What is respond.js ?
respond.js : is a fast and lightweight polyfill for min / max -width CSS3 Media Queries for Internet Explorer 6-8.

33.When was HTML5 introduced ?
HTML5 was introduced on 28 october 2014

34.What is Canvas element ?
Canvas element is used to draw graphics using Javascript.
Canvas element isn't supported in older browsers.
The attributes of a canvas element are: id, width, and height.If the attributes width and height aren't specified,then the canvas element will initially be 300 px wide and 150 px height.
The default size of canvas is 300 px (width) x 150 px (height).
Canvas element has one method called getContext( ) which is used to obtain the rendering context and its drawing functions.
getContext( ) takes one parameter(that is,the type of context such as 2D).

35.What is video tag ?
```
<video  width  height  controls  auto play / loop / muted / poster / preload >
  <source  src  type>
</video>
```

36.What is audio tag ?
```
<audio  controls  autoplay / loop / muted / preload / >
  <source  src  type>
</audio>
```

preload = “none” - doesn’t buffer the media file
preload = “auto” - buffers the media file
preload = “metadata” - buffers only the metadata for the file

To check the current network state (that is,activity) of the audio or video,we use networkState property.
syntax: audio.networkState - for audio
video.networkState - for video
If networkSate = 0 - represents audio / video hasn’t yet been initialized.
If networkState = 1 - represents that audio / video is active and has selected a resource,but is not using the network
If networkState = 2 - represents browser is downloading data
If networkState = 3 - represents no audio / video source found

To halt the currently playing audio or video,use pause( ) method
syntax: audio.pause( ) - for audio
video.pause( ) - for video

To play the current audio or video,use play( ) method
syntax: audio.play( ) - for audio
video.play( ) - for video

To reload the audio or video,use load( ) method.
syntax: audio.load( ) - for audio
video.load( ) - for video

37.What is the difference between Canvas and SVG ?
The main difference between Canvas and SVG is that Canvas works with two-dimensional whereas SVG works with two-dimensional and three-dimensional as well.
Canvas: Resolution dependent
SVG : Resolution independent
Canvas : No support for event handlers
SVG : Support for event handlers
Canvas : Low capability for text rendering
SVG : High capability for large rendering area such Google Maps
Canvas : Well suited for graphic-intensive games
SVG : Not suited for game applications

38.What is the difference between retainer mode and immediate mode ?
With the new features introduced in HTML5,we now can create graphics with either canvas-based or non-canvas-based known as “DOM-based” elements.
As one would expect,the canvas-based graphics is based on the canvas tag and the canvas API to draw the primitive shapes at pixel level inside the canvas.
DOM-based graphics implies that no <canvas> element is involved.DOM-based graphics is based primarily on elements.Each div element gets styled by CSS3 into different shapes.
A big difference between canvas-based and DOM-based graphics is that canvas-based graphic is “immediate mode” with draw-and-forget approach,while DOM-based graphic is considered “retainer mode” with all drawn objects getting saved.Each div drawn in DOM-based is treated as an object,which can be modified or reconfigured.
canvas-based animation requires clearing the canvas and re-drawing every shape in the canvas for each frame.DOM-

based animation re-draws only objects that get changed by re-configuring the properties of those objects only.

39.What does the attribute “defer” or “async” do when added to the <script> tag ?
The defer attribute specifies that the script is executed when the page has finished parsing.The defer attribute is only for external scripts,that is,the defer attribute should only be used if the “src” attribute is present.
The async attribute specifies that the script is executed asynchronously with rest of the page,that is,the script will be executed while the page continues the parsing.
If neither defer nor async attribute is present,then the script will be fetched and executed immediately,before the browser continues parsing the page.

40.What is a web worker ?
A web worker is a Javascript that runs in the background,independently of other scripts,without affecting the performance of the page.A web workers bring “Threading" to Javascript.

41.What are the types of a web worker ?
A web worker is of two types:
Dedicated worker and Shared worker
A worker is an object created using a constructor called worker( ), which runs a named Javascript file.This file contains the code that will run in the worker thread.A worker runs in a global context that is different from the current window.Thus,using the “window" shortcut to get the current global scope(instead of “self”) within a worker will return an error.
A worker is of two types,they are: Dedicated worker and Shared worker
A Dedicated worker is only accessible from the script that first spawned it,whereas a Shared worker can be accessed from multiple scripts.

The data is sent between a worker thread(that is,dedicated thread) and the main thread via a system of messages,that is,both worker thread and main thread send their messages using "postMessage( ) method”, and respond to messages using "on message" event handler.

A worker may in turn spawn a new worker,as long as the worker is hosted within the same origin as the parent page.

Spawning a dedicated worker :
var myWorker = new Worker (“worker.js”)

If you want to send a message to a dedicated worker or send a message from a dedicated worker,use postMessage( ) method.
If you want to respond when a message is received by a dedicated worker,use "on message" event handler.

If you want to terminate a worker thread which is running,use terminate( ) method
myWorker.termiate( )
If you do this,the worker thread, which is running ,will be killed immediately without completing its operations,and the “workers" in the worker thread close themselves by calling their own “close( )” method.

If a runtime error occurs in a worker thread,its "on error" event handler will be called.

A shared worker can be accessed by multiple scripts,that is,they are even accessible by different windows,iframes ,and other worker threads.

Spawning a shared worker :
var myWorker = new SharedWorker(“worker.js”)

The data is sent between a shared worker and the main thread via "a port connection”.This port connection needs to be started either implicitly using “on message” event handler or explicitly using “start( ) method” before any messages can be posted.

Apart from dedicated worker and shared worker,there is one more worker called service worker.A service worker acts as a proxy server that sits between web applications,and the browser and network.A service worker is intended to enable the creation of effective offline experiences,intercepting(stopping) network requests and taking appropriate action based on whether the network is available and updated assets reside on the server.

42.What is a web socket ?
HTML5 web socket represents the major upgrade in the history of web communications.Before web socket,the communication between a client and server relied only on HTTP.Now,the dynamic data can flow freely over web socket connections that are persistent(always on), full duplex(simultaneously bi-directional) and blazingly fast.

HTTP remains the protocol of choice for transferring "static html content”, but with web socket we can transfer “dynamic html content”.
With web socket,there is a persistent connection between the client and the server and both parties can start sending data at any time.

Web sockets are a bi-directional, full-duplex (bi-directional), persistent (always on) connection from a web browser to a server.once a web socket connection is established,the connection stays open until the client or server decides to close this connection.with this open connection,the client or server can send a message at any time to the other.This makes web programming entirely event driven,not just user initiated.web sockets are stateful.

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The differences between HTTP and Websockets are :
Web sockets are stateful whereas HTTP is stateless
Web sockets transfer dynamic html content whereas HTTP transfers static html content

43.What is a web storage ?
HTML local storage provides two objects for storing data on the client:
window.localStorage - stores data with no expiration date,which means the data will not be deleted when the browser is closed,and will be available the next day,week or year

window.sessionStorage - stores data for one session,which means the data will be deleted when the browser is closed.

44.What is a data attribute ?
A data attribute assigns custom data to an element.It stores sensitive or private data that is exclusive to a page or an application.

45.What is the difference in caching between HTML5 and the old HTML ?
The important feature of HTML5 is the application cache which creates an offline version of a web application and stores website files such as HTML files,CSS files,and Javascript locally.This feature speeds up the website performance.

46.What is Charset Attribute ?
The Charset Attribute is used to display an HTML page correctly.The Charset Attribute is specified in the <meta> tag.
<meta charset = “UTF-8” >

47.What is the difference between Unicode and UTF-8 ?
Unicode is character set.Character set translates characters to numbers.
UTF -8 (Unicode Transformation Format) is encoding.Encoding translates characters to numbers and then numbers to binary.

48.what are the drag events ?

Event	On Event Handler	Description
drag	ondrag	Fired when an element or text selection is being dragged.
dragend	ondragend	Fired when a drag operation is being ended (for example, by releasing a mouse button or hitting the escape key). (See Finishing a Drag.)
dragenter	ondragenter	Fired when a dragged element or text selection enters a valid drop target. (See Specifying Drop Targets.)
dragexit	ondragexit	Fired when an element is no longer the drag operation's immediate selection target.
dragleave	ondragleave	Fired when a dragged element or text selection leaves a valid drop target.
dragover	ondragover	Fired when an element or text selection is being dragged over a valid drop target (every few hundred milliseconds).
dragstart	ondragstart	Fired when the user starts dragging an element or text selection. (See Starting a Drag Operation.)
drop	ondrop	Fired when an element or text selection is dropped on a valid drop target. (See Performing a Drop.)

49.what are the steps to add drag and drop functionality to an application ?
(i)Identify what is draggable
(ii)Define the drag's data
(iii)Define the drag image
(iv)Define the drag effect
(v)Define a drop zone
(vi)Handle the drop effect
(vii)Drag end

50.what are the interfaces of HTML drag and drop ?
(i)DragEvent
(ii)DataTransfer
(iii)DataTransferItem
(iv)DataTransferItemList

DragEvent interface is a DOM event that represents a drag and drop interaction
DataTransfer object is used to hold the data that is being dragged during a drag and drop operation.It may hold one or more data items,each item of one or more data types.
DataTransferItem object represents one drag data item.
DataTransferItemList object is a list of DataTransferItem objects representing items being dragged.

51.How to make an element draggable ?
use draggable = “true” on an element in order to make an element draggable.
By default when the draggable elements are dragged,only the “form” elements such as “input” will be able to accept them as a drop.

52.what is Hammer.JS ?
Hammer.JS is used along with the HTML5 Drag and Drop API
Hammer. JS helps you add support for touch gestures to your page,and remove the 300ms delay from clicks.

53.what is navigator ?
navigator.geolocation.getCurrentPosition( ) : requests the user’s current location
navigator.geolocation.watchPosition( ) : requests the current position,but also continues to monitor position and invoke the specified callback when the user’s position changes
navigator.geolocation.clearWatch( ) : stops watching the user’s location.The argument to this method should be the number returned by the corresponding call to watchPosition( )

54.what is window.history.forward( ) and window.history.backward( ) ?
window.history.forward( ) : To move forward through the user’s history,that is,
window.history.back( ) : To move backward through the user’s history

55.What are the advantages of Application Cache ?
(i)Offline browsing - Depending on the size of your site, users can navigate some or all of your site when they're offline.
(ii)Speed - Cached resources are stored locally, so that they load faster.
(iii)Reduced server load - The browser will only download resources from the server that have changed.
(iv)No coding required - The AppCache takes care of everything for you without the need for any coding, whether JavaScript, or any other programming language. All that's required is the inclusion of a plaintext Manifest File.

56.How to use Application Cache ?
To make use of Application Cache, simply include the "manifest" attribute on the document's HTML tag.

```
<html manifest="GoodFoodTalks.appcache">
        ...
</html>
```

57.What is a Manifest File ?
A Manifest File is a list of all the files the application has to download and store and also a set of rules how the

application should behave when it (the application) reaches an unavailable resource.

58.What does a Manifest File contain ?
A Manifest File contains :
(i)A title “CACHE MANIFEST” at the top of the Manifest File
(ii)CACHE - contains a list of files which are explicitly cached after they are downloaded for the first time.
(iii)NETWORK - contains a list of files to be served to the user when user is connected to the internet
(iv)FALLBACK - contains a list of files to be served to the user when the user is not connected to the internet

59.Events in Application Cache :