

— HTML —

Q 1 <!Doctype html> is it a tag of html? If not, what is it and why do we use it ?

1 Ans:- No, **<!Doctype html>** is not a HTML tag, It a HTML5 declaration to the browser for knowing what kind of document it will be going to present in the browser.

Q 2 Explain Semantic tags in html? And why do we need it?

2 Ans:- **Sementic tags** in HTML are those tags where tags are described for what they can belongs to the browser and the developer making it easier for styling the content.

For example: some of the commonly used semantic tags that are used in HTML5 are

- **<header>**: It represents the introduction to the heading of the content or group of introductory content in the document of the webpage
- **<nav>**: It represents the navigation to the webpage or it can contain navigation links.
- **<aside>**: It represents some content related to the sorrounding content.
- **<article>**: It represents box content where it should reference its own independent from the rest of the site
- **<section>**: It represents
- **<footer>**: it representes

We use it for styling and align item in systemetic order or structre

Q 3 Differentiate between HTML tags and Element?

3 Ans:- Difference between **HTML Tags** and **Elements** are :

- **Tags** are called the starting and ending parts of element, whereas **Elements** are the content that are enclosed in between the tags.

For example:

- **Tags** have < starting symbol and > ending symbol, whereas **Element** consist of some expression or some kind of structure.

Q 4 Build Your Resume using HTML only ?

4 Ans:- [Link](#)

Q 5 Write HTML code so that it looks like the given images [Link](#)

5 Ans:- [Click to see the Answer](#)

Q 6 What are some of the advantages of HTML over its previous version?

6 Ans:- Here are some of the advantages of **HTML5** over its previous version

- It has a new multimedia tags which can support both video and audio by <video> and <audio> respectively.
- Tags are now more specifically defined like <header>, <section>, <article>, <footer>
- It can locate the geographical map of the client.
- Now it's easy declaration for document type ie, <!doctype html>
- It can detect incorrect syntax

Q 7 Create a simple Music player using HTML only

7 Ans:- [Music player link](#)

Q 8 What is the difference between <figure> tag and tag?

8 Ans:- Difference between <figure> and is that <figure> element is used to insert a photo in a document and inside there we can add more like <figcaption> for writing figure caption, whereas in we can insert only image by the attributes **src** for specifying the path for the image and **alt** for alternative text if the image that provided cannot be displayed for some reason.

Q 9 What is the difference between HTML tag and attribute and attribute and give example of some global attributes?

9 Ans:- Difference between html **Tag** and **Attribute** are that

Tags represents to an element that is used to define the structure or Element of the content of webpage. Tags are enclosed in <> brackets And contains a opening and a closing tag. They give instructions to the Browser and behaves as it is instructed.

for example -

```
<h1>This tag is automatically indicates that it is  
top-main-heading</h1>
```

And they define different type of element such
<heading>,<article>,<section>,<paragraph>,<footer> etc.

Attributes defines an additional information for HTML elements. Usually all elements can have attributes and can have value which are always specified in the start tag.

For example:

```

```

Global Attributes are those attributes that can be used in all elements. Like for example:

- **Id:** It specifies an unique id for all the elements
- **Title:** It defines some more information about an element .
- **Class:** It specifies more than one classnames for an element

Q10 Build a Table which looks like the given [Link](#)

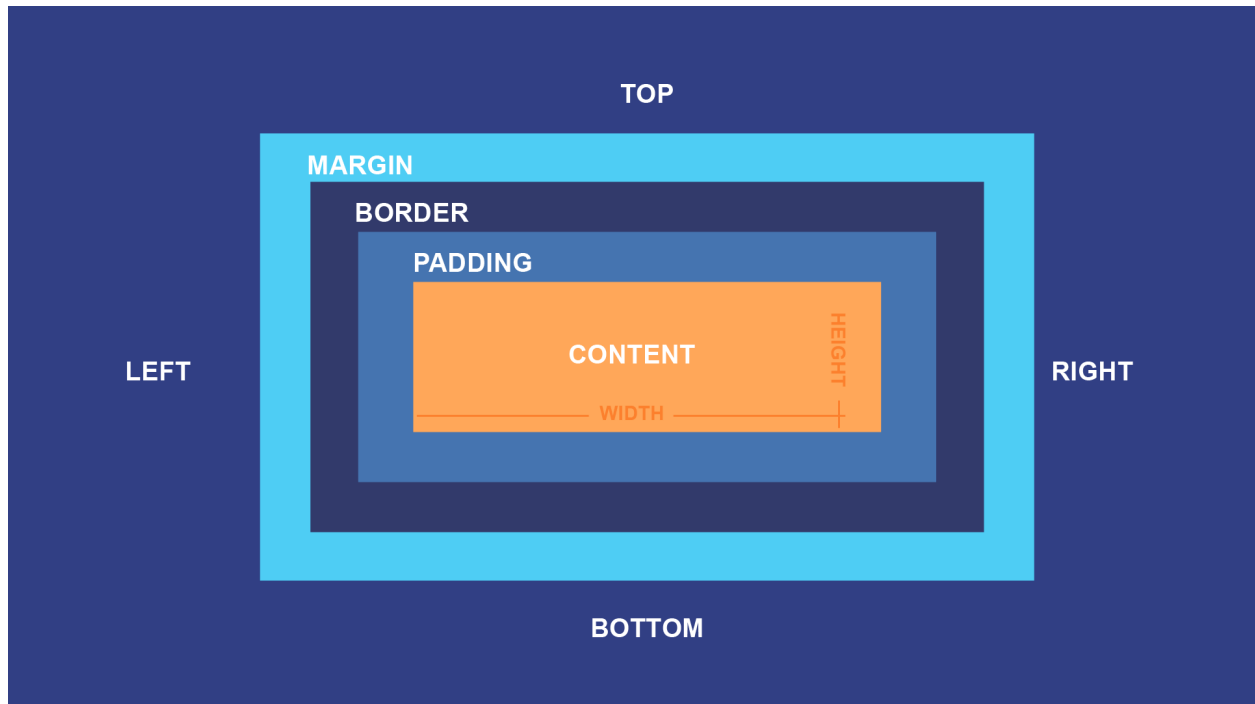
Ans:- [Click here for the answer](#)

— CSS —

Q 1 What is box Model in CSS & Which properties are part of it ?

1 Ans:- Box Model is a essential box model where it is wrapped around every box or you can say every html element. The very important thing we should know about box model is that it contains of 4 layer like - Margin, Border, Padding, and the Main content.

Here comes the desgine



Q 2 What are the different types of selectors in CSS & what are the advantages of them ?

2 Ans:- There are five type of CSS selector

1. **Id Selector:** It selects the element with a unique id attribute. It has an advantage to select one unique element and make changes within element with the (#)character.
2. **Class Selector:** It selects the element with a specific class attribute. It has the ability to select multiple attributes with specific class with the (.)character.
3. **Element Selector:** It selects all the HTML element with same style definition. It has the advantage to make changes to the HTML by selecting just the tag name
4. **Star Selector:** It can also called the star selector which selects all the HTML element with (*)character.
5. **Pseudo Element Selector:** It is used to style a targeted parts of an element. It has an advantage that like, It can style the first letter, or first line etc.

Q 3 What is VW/VH & How it is different from PX ?

3 Ans: **VH/VW** stands for viewport height and viewport width respectively and they are units of measurement that represent a percentage of viewport. They are dynamic and they adjust their size by the height and the width of the viewport. But in **PX** they represent a fixed number of pixel, does not matter what the size of the viewport is.

Q 4 what are the difference between Inline, Inline Block and block ?

4 Ans:- The difference between Inline, Inline Block and Block are

INLINE

- It applies within the content and do not take the whole width of the container.

INLINE BLOCK

- It has its own height and width of the element. And it respect the top and bottom margin/padding but with inline it is not. And it does not add line break after the element , by that the element it placed next to each other

BLOCK

- It's uses its own line and it starts on new line and the browser automatically add some space before and after the element
- It always stretches out to left and right .

Q 5 How border box is different from Content box ?

5 Ans:- **Content box** has the default box sizing padding margin. For example if one element height is set to 50px then if i add 10px border to the element then the box border will be added to the container and the final box size will be of 60px. But

Border box it tell the browser that if any element value is set to 50px and the border is 10px then if the main content is set to 50px then it will shrink the element size to 40px and the border will be set 10px. It makes easier to size element.

Q 6 what is z-index and How does it function ?

6 Ans:- The **z-index** property specifies the stack order or arrange the element. An element which has greater stack will always be in the front of any element which have lower stack order.

For example [link](#)

Line no 55

Q 7 what is Grid & flex and difference between them ?

7 Ans:- difference between Grid and flexbox are

- **Flexbos** is a one-dimensional layout system that works along a sinlge axis (horizontal or vertical).
- It is used for arranging element within a container, controlling their aligment and order.
- **Flexbox** is used for arranging element along one axis.

Grid

- **Grid** is two -dimensional layout system that allows for precise control over both rows and columns of a grid.
- It provides a powerfull grid - based structure for creating complex layout
- Grid provides more extensive control over both rows and columns of a grid structure.

Q 8 difference between absolute and relative and sticky and fixed position explain with example.

8 ANS:- Absolute: element with absolute positioning are positioned absolutely relative to their nearest positioned ancestor. This means that they are removed from the normal flow of the document and can overlap other element

Relative: element with relative positioning are positioned relative to their normal position. This means that they can be moved around using top,right,bottom,left properties.

Sticky: element with sticky positioning start off positioned relatively, but they will stick to the top of the viewport whent the user scrolls past them.

Fixed: the default position. Element with static positioning flow normally with the rest of the document.

Example

[Link](#)

Q 9 Build a Periodic table as shown in the image .

9 ANS:- [Link](#)

Q 10 Build given layout using grid or flex see below image for reference.

10 ANS: [Link](#)

Q 11 build responsive layout both desktop and mobile and tablet, see below image for reference ?

11 Ans:- This is the link of the paytm code [paytm](#)

12 what are pseudo class in CSS & how its different from pseudo element ?

12 ANS:- Pseudo-classes and pseudo-elements are valuable tools in CSS.

Pseudo-classes target elements based on their state, like hovering over a button. Pseudo-elements, on the other hand, represent non-existent parts of elements, such as the first line of text. These additions allow for precise styling and customization. And also, pseudo-classes focus on state, while pseudo-elements are concerned with content. Mastering these concepts will enhance your CSS skills and empower you to create dynamic and engaging web designs.

— JAVASCRIPT —

1 Ans:- hoisting is a javascript term or you can say a mechanism where variable, classes function are declared before they executed. And they are moved to top of their scope.

2 Ans:- HOF(higher order function) are function that can take function as parameter and returns another function is called HOF. These are map(), foreach(), reduce() etc.

The difference between `.map()` and `.forEach()` is that `map()` create a new array from the element, whereas `forEach()` doesnot return new array but it loop through every single element of the array.

3 Ans:- Simply, `binds` creates a new function where 'this' has been bound to whatever was passed in, and `apply` calls the function immediately whereas `call` waits until later. `Bind` returns a copy of the original function whereas both `apply` and `call` modify the current function directly.

For example

```
function people (name) {
  console.log(`Hello there, My name is ${name} and i am ${this.age}
year old `)
}
const age = {
  age: 23
}
// this is .call() It Invokes a function by specifying the context
(this value) and passing arguments individually.
people.call(age, 'sameer')
// this is .apply() it Invokes a function with a specified context and
passes arguments as an array.
people.apply(age, ['pradip'])
// this is .bind() it creates a new function with a fixed context and
any specified arguments, without immediate invocation.
let peopleBio = people.bind(age);
peopleBio('jhon')
```

4 Ans:- Event Bubbling is a fundamental or a type of propagation where the event first trigger from the inner element to the outer element in nesting till it reaches the outermost DOM element.

Event Capturing like almost reverse of event bubbling that where the event is now first triggered by the outermost element and then triggers one the inner element in the nesting hierarchy till it reaches the innermost DOM element.

Example [Link](#)

5 ANS:- currying is a technique in function programming that transforms a function that takes multiple arguments into a sequence of functions, each taking a single argument. This can be useful for making functions more reusable and for working with functions that have a large number of arguments.

```
function add(a, b) {  
  return a + b;  
}  
  
function curriedAdd(a) {  
  return function(b) {  
    return add(a, b);  
  };  
}  
  
const add10 = curriedAdd(20);  
const result = add10(20);  
console.log(result); // 40
```

7 Ans:- A promise is an object that may produce a single value some time in the future with either a resolved value or a reason that it's not resolved. It will be in one of the 3 possible states: fulfilled, rejected, or pending.

Fulfilled - The state of a promise when it has successfully resolved.

Rejected - The state of promise when it fails to resolve for some error occurred during the promised operation

Pending - The very initial state when a promise is created and it is still in progress and has not been resolved or rejected.

8 Ans:- 'This' keyword refers to the current execution context or the object on which a method is called.

```
Const data = {  
  Name: 'ujjal'  
  Height: 6,  
  Bio : function() {  
    console.log(`Hey, my name is ${this.name} my  
height is ${this.height} ft tall.`)  
  };  
  data.bio();  
}
```

10 ANS:- Debouncing in JavaScript delays function execution until a specified time has passed since the last call. It improves web application performance by preventing excessive function calls.

Example [Link](#)

11 ANS:- Closure is a combination of a function and lexical environment within which where the function was declared. I.e, it is an inner function that has access to the outer or enclosing function's variables.

In the below example,

The makeCounter function creates a closure called increment. The increment function has access to the variable counter, which was declared in the outer scope of the makeCounter function.

This means that the increment function can be used to increment the value of counter even though the increment function is defined within the makeCounter function.

```
function makeCounter() {
```

```
var counter = 0;

function increment() {
  counter++;
  return counter;
}

return increment;
}
```

12 ANS:- [Answer Link](#)

REACT

Q1 what is React and what are the advantage of it?

Ans:- React is a lightweight javascript framework used for building user interfaces. Its advantages is that it a modular design type framework, it uses components based architecture that is used by developer to create reusable component for the user interface so that it's easy to maintain the app.

Q2 what is virtual DOM in React and what are the advantage of it?

Ans:- React uses a virtual DOM concepts which is like a simply exactly copy of the actual DOM like a virtual DOM, so whenever we change anything in the state of any element a new virtual DOM is created and it make changes to the original DOM and updated the element

It has some advantages like whenever there is change in the state or props of a component, It creates a new virtual DOM and make changes and it applies only to the necessary changes to the real DOM hence minimizing the time and updates.

Q 3 Explain LifeCycle of React Component?

Ans: LifeCycle simply means that it a series or stages of method that components goes through. It goes through four stages

1. Initialization
2. Mounting

3. Updating
4. Unmounting

Q 4 what is the different between functional components and class components ?

Ans:- Functional components is simply a clean javascript functions that accepts the props as argument and returns JSX and it is widely used now everywhere and While **Class Components** are combination of multiple functional, It require to extends from react and it has more complex syntax compared to functional components but nowadays it's widely deprecated.

Q 5 what are the hooks in React & Can we use Hooks in Class Components ?

Ans:- Hooks allows to use state and other react feature. Mostly we used useState, useEffect, useContext but also there are other hooks like useCallback, useDebugValue etc. And no we can not use hooks in class components.

Q 6 what are the LifeCycle method and the advantages of it?

Ans:-

Q 7 Whatt's useState Hook & Advantages of it ?

Ans:- It is a function that allows to add state to the components. Hooks takes an initial value as an argument and returns an array with two element the current state value and function to update that state By convention we can use array destructuring to assign names to these elements

Q 8 Explain useEffect & Advantages of it ?

Ans:- useeffect hook is a hook that allows to perform side effects in a functional component . side effects like API calls, or other operation that does an impact outside the component.it takes two argument a callback function and an array of dependencies. The callback function will be executed whenever any of the dependencies change.

Its advantages are resuability, performance.

Q 9 Explain Context Api and create a minor project on it - Create dashboard and with button on clicking on that change theme to dark and light.

Q 9 ANS:-