Debug With Shubham Notes

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TCS Interview Q&A 2025

JavaScript

Ninja, Digital, Prime Role

JavaScript Interview Questions & Answers

1- What is JavaScript?
Answer: JavaScript is a client-side scripting language used to make web pages interactive.

2- var, let, const difference?
var: Function-scoped, hoisted
let: Block-scoped
const: Block-scoped, cannot be reassigned

3- What is hoisting?
Answer: Variables and function declarations are moved to the top of their scope before execution.

4- What is the DOM?
Answer: Document Object Model — JavaScript's way of interacting with and manipulating HTML elements.

5- What are events?
Answer: Actions that happen in the browser (like click, mouseover). JavaScript can respond to these.

6- Difference between '==' and '==='?
'==' allows type coercion, while '===' requires both type and value to be the same.

7- Arrow functions?

Arrow functions are a shorthand way to write functions using the => syntax.

```javascript
const add = (a, b) => a + b;
```

8- What is the 'this' keyword in JavaScript?

'this' refers to the object that is executing the current function.

9- What is hoisting in JavaScript?

Hoisting is JavaScript's default behavior of moving declarations to the top.

10- What is a callback function?

Answer: A function passed into another function as an argument, to be executed later.

11- What are closures?

A closure is a function that has access to its own scope, the outer function's scope, and the global scope.

EX-

```javascript
function outerFunction(outerVariable) {
  function innerFunction(innerVariable) {
    console.log(outerVariable);
    console.log(innerVariable);
  }
  return innerFunction;
}
const myClosure = outerFunction('Hello');
myClosure('World'); // Output: Hello, World
```

Explnation:

outerFunction takes outerVariable as an argument and returns innerFunction.

innerFunction has access to outerVariable even after outerFunction has finished executing.

When myClosure is called, it logs both outerVariable and innerVariable.

12- What is event bubbling in JavaScript?
Event bubbling is when an event triggers first on the innermost element and then propagates up to outer elements.
event.stopPropagation(); // used to stop bubbling

13- Explain the difference between synchronous and asynchronous JavaScript.
Synchronous: Executes line by line (blocking).
Asynchronous: Uses callbacks/promises/async-await to execute non-blocking code (e.g., API calls).

14- What is a promise in JavaScript?
A Promise is an object representing the eventual completion (or failure) of an asynchronous operation.

```
let promise = new Promise((resolve, reject) => {
  // async task
});
```

15- What is the use of the async/await keywords?
They are used to write asynchronous code that looks synchronous.

16- What is the difference between null and undefined?
null is an assignment value, while undefined means a variable has been declared but not assigned.

17- What is the event loop in JavaScript?
The event loop handles the execution of multiple chunks of code over time.

18 - What is the difference between call, apply, and bind?

call and apply invoke functions immediately; bind returns a new function.

19- What is event delegation?

A technique where a single event listener handles events from multiple child elements using event bubbling

20- What is the spread operator?

Expands elements of an array or object.

let arr = [1, 2];

let newArr = [...arr, 3];

21- What is destructuring?

Destructuring is a way to extract values from arrays or properties from objects.

22- What is the difference between map() and forEach()?

map() returns a new array.

forEach() just iterates, no return.

23- What is localStorage vs sessionStorage?

localStorage: Data persists until manually deleted.

localStorage allows saving key/value pairs in a web browser with no expiration.

sessionStorage: Data cleared when session/tab closes.

24- What are higher-order functions?

Functions that take other functions as arguments or return functions.

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25- What is JSON?
JSON is a format for storing and transporting data.

26- How does setTimeout() work?
The setTimeout() function in JavaScript schedules a function to be executed after a specified delay
```
setTimeout(() => alert("Hi"), 2000);
```

27- What are JavaScript data types?
Primitive: string, number, boolean, null, undefined, symbol, bigint
Non-primitive: object, array, function

28- What is a prototype?
A prototype is an object from which other objects inherit properties.

29- What is the difference between function declaration and expression?
A declaration is hoisted, an expression is not.

30- What is the use of the typeof operator?
typeof returns the type of a variable.

31- What are promises states?
Pending, Fulfilled, and Rejected.

32- What is a generator function?
A generator function can pause execution and resume later using yield.

33- What is the 'use strict' directive?
'use strict' helps catch common coding mistakes and prevents unsafe actions.

34- What is the difference between sync and async functions?
Sync functions block the thread, async functions do not

35- What is a Symbol in JavaScript?
Symbol is a primitive data type for unique identifiers.