💻 JavaScript Interview Questions and Answers (1–50)

1. What is JavaScript?

Answer: JavaScript is a lightweight, interpreted programming language used to create dynamic and interactive effects within web browsers.

2. Is JavaScript the same as Java?

Answer: No. Despite similar names, Java and JavaScript are completely different languages.

3. What are the data types in JavaScript?

Answer: String, Number, Boolean, Null, Undefined, Object, Symbol, BigInt.

4. What is a variable in JavaScript?

Answer: A variable stores data that can be used and modified later.

5. What are the ways to declare variables?

Answer: Using `var`, `let`, and `const`.

6. What is the difference between `let`, `var`, and `const`?

Answer:

- `var` is function-scoped, hoisted.
- `let` is block-scoped, not hoisted.
- `const` is block-scoped and cannot be reassigned.

7. What is hoisting in JavaScript?

Answer: JavaScript's behavior of moving declarations to the top of the scope before code execution.

8. What is a function in JavaScript?

Answer: A reusable block of code designed to perform a particular task.

9. What is an arrow function?

Answer: A shorter syntax for writing functions:

```
const sum = (a, b) => a + b;
```

10. What is the difference between == and ===?

Answer: == compares values with type coercion, === compares values and types.

11. What are JavaScript objects?

Answer: Key-value pairs used to store collections of data.

12. How do you create an object in JavaScript?

Answer:

```
const person = { name: "John", age: 30 };
```

13. What is the DOM?

Answer: Document Object Model – a tree structure representing the HTML of a webpage.

14. How do you select elements in the DOM?

Answer: Using methods like `getElementById`, `querySelector`, `getElementsByClassName`.

15. What is an array in JavaScript?

Answer: A collection of elements stored in a single variable.

16. How do you loop through an array?

Answer: Using `for`, `forEach`, `map`, `for...of`.

17. What is a callback function?

Answer: A function passed into another function to be executed later.

18. What is an event in JavaScript?

Answer: An action (like click, hover) to which JavaScript can respond.

19. What is event bubbling?

Answer: Events propagate from child to parent in the DOM.

20. What is event delegation?

Answer: Handling events at a higher level in the DOM instead of directly on elements.

21. What is JSON?

Answer: JavaScript Object Notation – a lightweight data format used for exchanging data.

22. What are template literals?

Answer: A way to include expressions in strings using backticks:

```
`Hello, ${name}`
```

23. What is a promise in JavaScript?

Answer: An object that represents the eventual result of an asynchronous operation.

24. What is async/await?

Answer: Syntactic sugar for handling promises in an easier, more readable way.

25. What are closures in JavaScript?

Answer: A function that remembers its outer scope even after the outer function has closed.

26. What is `this` keyword?

Answer: Refers to the object it belongs to; its value depends on the context.

27. What is the difference between `null` and `undefined`?

Answer:

- `null`: intentional absence of value
- `undefined`: variable declared but not assigned

28. What is a higher-order function?

Answer: A function that takes another function as an argument or returns a function.

29. What is the difference between `map()` and `forEach()`?

Answer: `map()` returns a new array, `forEach()` doesn't return anything.

30. How do you handle exceptions in JavaScript?

Answer: Using `try...catch` blocks.

31. What is NaN in JavaScript?

Answer: Not-a-Number – result of an undefined or unrepresentable math operation.

32. What is the difference between synchronous and asynchronous code?

Answer:

- Synchronous: Code runs one line at a time.
- Asynchronous: Code can run in the background, allowing other code to execute.

33. What are spread and rest operators?

Answer:

- Spread: Expands elements – `...arr`
- Rest: Gathers arguments – `(...args)`

34. What is destructuring?

Answer: Extracting values from arrays or properties from objects into variables.

35. What are the different types of errors in JavaScript?

Answer: SyntaxError, ReferenceError, TypeError, RangeError.

36. What are JavaScript classes?

Answer: Syntax to create objects and deal with inheritance using `class` and `constructor`.

37. What is inheritance in JavaScript?

Answer: One object gets access to another object's properties and methods via prototype chain or class syntax.

38. What is a module in JavaScript?

Answer: A file containing code that can be imported/exported to/from other files using `import`/`export`.

39. What is a debounce function?

Answer: Limits how often a function is called by waiting a certain time before re-executing.

40. What is throttling?

Answer: Limits a function to run once every specified period.

41. What is the difference between localStorage and sessionStorage?

Answer:

- `localStorage`: persists even after the browser is closed
- `sessionStorage`: clears when the tab is closed

42. What is the use of `typeof` operator?

Answer: Returns the data type of a variable.

43. What is a generator function?

Answer: A special function that can be paused and resumed using `function*` and `yield`.

44. What is the purpose of `use strict`?

Answer: Enforces stricter parsing and error handling in JavaScript code.

45. What is the difference between deep copy and shallow copy?

Answer:

- Shallow copy: references nested objects
- Deep copy: duplicates all levels

46. How do you deep clone an object?

Answer: Using `JSON.parse(JSON.stringify(obj))` or structured cloning.

47. What is memoization?

Answer: Caching results of expensive function calls to optimize performance.

48. What is the event loop?

Answer: A process that handles asynchronous operations by pushing them into the call stack when ready.

49. What is Web API in JavaScript?

Answer: Browser-provided APIs like `fetch`, `DOM`, `localStorage`, etc.

50. What are the new features in ES6?

Answer: `let`, `const`, arrow functions, classes, promises, template literals, destructuring, default parameters, and more.