

Basic

1. What is JavaScript?

Answer: JavaScript is a scripting language used to create dynamic and interactive web pages.

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

Answer: `var` has function scope, `let` and `const` have block scope, and `const` cannot be reassigned.

3. What are primitive data types?

Answer: Number, string, boolean, null, undefined, symbol, and bigint.

4. What is the difference between `==` and `===`?

Answer: `==` compares values, `===` compares values and data types.

5. What is hoisting?

Answer: Hoisting moves variable and function declarations to the top of their scope.

6. What is a closure?

Answer: A closure is a function that remembers variables from its outer scope.

7. What is synchronous and asynchronous code?

Answer: Synchronous code blocks execution; asynchronous code runs without blocking.

8. What is a callback function?

Answer: A function passed as an argument to another function.

9. What is a promise?

Answer: An object that handles asynchronous operations.

10. What is **async** and **await**?

Answer: Syntax used to handle promises in a readable way.

◆ React (Frontend)

11. What is React?

Answer: React is a JavaScript library for building user interfaces.

12. What is a component in React?

Answer: A reusable piece of UI.

13. Difference between functional and class components?

Answer: Functional components use hooks; class components use lifecycle methods.

14. What is JSX?

Answer: JSX allows writing HTML inside JavaScript.

15. What are props?

Answer: Props are data passed from parent to child components.

16. What is state in React?

Answer: State is mutable data managed within a component.

17. Difference between state and props?

Answer: State is changeable; props are read-only.

18. What is `useState`?

Answer: A hook used to manage state in functional components.

19. What is `useEffect`?

Answer: A hook used for side effects like API calls.

20. What is Virtual DOM?

Answer: A lightweight copy of the real DOM for faster rendering.

21. What is controlled component?

Answer: A component whose form data is controlled by state.

22. What is conditional rendering?

Answer: Rendering components based on conditions.

23. Why are keys used in React?

Answer: To uniquely identify list items.

24. What is lifting state up?

Answer: Moving state to a parent component to share data.

25. What is an uncontrolled component?

Answer: A component that uses refs instead of state.

◆ Node.js & Express (Backend)

26. What is Node.js?

Answer: A JavaScript runtime for executing code outside the browser.

27. Why is Node.js single-threaded?

Answer: It uses an event loop for handling multiple requests efficiently.

28. What is npm?

Answer: Node Package Manager for installing libraries.

29. What is Express.js?

Answer: A web framework built on Node.js.

30. Difference between Node.js and Express.js?

Answer: Node.js is a runtime; Express.js is a framework.

31. What is middleware?

Answer: Functions that run between request and response.

32. What are HTTP methods?

Answer: GET, POST, PUT, DELETE.

33. Difference between GET and POST?

Answer: GET fetches data; POST sends data.

34. What is a REST API?

Answer: An API that follows REST principles.

35. What are request and response objects?

Answer: Objects representing client request and server response.

36. What is CORS?

Answer: A security feature for cross-origin requests.

37. How do you handle errors in Express?

Answer: Using `try-catch` or error middleware.

38. What is an environment variable?

Answer: A secure way to store sensitive data.

39. What is JWT?

Answer: JSON Web Token used for authentication.

40. How does authentication work in MERN?

Answer: User logs in, server returns JWT, client stores token.

◆ MongoDB & Database

41. What is MongoDB?

Answer: A NoSQL document-based database.

42. Difference between SQL and NoSQL?

Answer: SQL uses tables; NoSQL uses documents.

43. What is a collection?

Answer: A group of documents in MongoDB.

44. What is Mongoose?

Answer: An ODM library for MongoDB.

45. What is a schema?

Answer: Structure definition of data.

46. Difference between `find()` and `findOne()`?

Answer: `find()` returns array; `findOne()` returns object.

47. What is indexing in MongoDB?

Answer: A way to improve query performance.

48. What is CRUD?

Answer: Create, Read, Update, Delete operations.

49. How do you connect MongoDB with Node.js?

Answer: Using Mongoose `connect()` method.

50. What is ObjectId?

Answer: A unique identifier for MongoDB documents.
