

# React.js Interview Questions & Answers

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## 1. What is React.js?

React.js is an open-source JavaScript library developed by Facebook for building user interfaces, especially single-page applications.

## 2. What are the main features of React?

Declarative, Component-based, Virtual DOM, Unidirectional data flow, JSX support.

## 3. What is JSX?

JSX (JavaScript XML) is a syntax extension that allows writing HTML-like code inside JavaScript.

## 4. What is the difference between Virtual DOM and Real DOM?

Virtual DOM is a lightweight copy of the real DOM. React updates the Virtual DOM first, then efficiently updates the real DOM.

## 5. What are React components?

Components are independent and reusable UI blocks in React. They can be functional or class-based.

## 6. What is the difference between functional and class components?

Functional components are stateless and use hooks, while class components have state and lifecycle methods.

## 7. What are props in React?

Props (properties) are read-only inputs passed to components to make them dynamic.

## 8. What is state in React?

State is a built-in object that stores component data and can change over time.

## 9. What is the difference between state and props?

Props are read-only and passed from parent to child. State is mutable and managed within the component.

## 10. What is lifting state up in React?

Lifting state up means moving shared state to the closest common ancestor so multiple components can access it.

## 11. What is React Hooks?

Hooks are functions that let functional components use state and lifecycle features.

## **12. What are useState and useEffect hooks?**

useState is used to manage state, while useEffect is used to handle side effects like data fetching.

## **13. What is the difference between useEffect and componentDidMount?**

useEffect runs after every render by default, while componentDidMount runs once after initial render in class components.

## **14. What is useContext hook?**

useContext allows access to context values without using props drilling.

## **15. What is useReducer hook?**

useReducer is an alternative to useState for managing complex state logic using reducers.

## **16. What is useMemo hook?**

useMemo is used to memoize expensive computations and avoid recalculating on every render.

## **17. What is useCallback hook?**

useCallback returns a memoized version of a function to prevent unnecessary re-renders.

## **18. What is React Context API?**

Context API allows passing data through the component tree without using props drilling.

## **19. What is Redux?**

Redux is a state management library for JavaScript applications, often used with React.

## **20. What are the principles of Redux?**

Single source of truth, State is read-only, Changes are made using pure functions (reducers).

## **21. What is the difference between Redux and Context API?**

Redux is more powerful and suited for large apps, while Context API is simpler and best for small-scale state sharing.

## **22. What is a higher-order component (HOC)?**

A HOC is a function that takes a component and returns a new component with additional props or behavior.

## **23. What are controlled and uncontrolled components?**

Controlled components rely on state to manage form inputs, while uncontrolled components use refs.

## **24. What is reconciliation in React?**

Reconciliation is the process by which React updates the Virtual DOM and compares it with the real DOM to apply changes efficiently.

## **25. What is React Fiber?**

React Fiber is the new reconciliation algorithm introduced in React 16 to improve rendering performance.

## **26. What is the difference between React and Angular?**

React is a library focused on UI, while Angular is a full-fledged MVC framework.

## **27. What is the difference between React and Vue?**

React is backed by Facebook with unidirectional data flow, Vue is progressive and offers both one-way and two-way binding.

## **28. What are React fragments?**

Fragments let you group multiple elements without adding extra DOM nodes.

## **29. What are keys in React lists?**

Keys help React identify which list items have changed, been added, or removed.

## **30. What are portals in React?**

Portals allow rendering children into a DOM node outside the parent component hierarchy.

## **31. What are error boundaries?**

Error boundaries are React components that catch JavaScript errors in child components and display fallback UI.

## **32. What is React Router?**

React Router is a library used for navigation and routing in React applications.

## **33. What is lazy loading in React?**

Lazy loading is a technique where components are loaded only when needed to optimize performance.

## **34. What is suspense in React?**

Suspense lets components wait for something (like data fetching) before rendering fallback UI.

## **35. What is server-side rendering (SSR) in React?**

SSR is the process of rendering React components on the server and sending HTML to the client.

## **36. What is hydration in React?**

Hydration is the process where React attaches event handlers to existing server-rendered HTML.

## **37. What is Next.js?**

Next.js is a React framework for SSR, static site generation, and routing.

## **38. What is the difference between useRef and createRef?**

useRef persists the same reference across renders, createRef creates a new ref every time.

## **39. What is the difference between controlled and uncontrolled inputs?**

Controlled inputs are tied to component state, uncontrolled inputs use refs for DOM access.

## **40. What is prop drilling?**

Prop drilling occurs when props are passed through multiple nested components unnecessarily.

## **41. What are render props?**

Render props is a technique where a function is passed as a prop to determine what to render.

## **42. What is memo in React?**

React.memo is a higher-order component that memoizes functional components to prevent unnecessary re-renders.

## **43. What is PureComponent?**

PureComponent is a React class component that implements shouldComponentUpdate with a shallow prop and state comparison.

## **44. What are synthetic events in React?**

Synthetic events are React's cross-browser wrapper around native events.

## **45. What is the difference between stateful and stateless components?**

Stateful components manage state internally, while stateless components do not.

## **46. What is the difference between shallow rendering and deep rendering?**

Shallow rendering tests components without rendering children, deep rendering renders the full component tree.

## **47. What is the difference between mount and render?**

Render describes what to display, mounting is when React actually inserts components into the DOM.

#### **48. What are React dev tools?**

React DevTools is a browser extension for inspecting React component hierarchies.

#### **49. What are best practices in React development?**

Use functional components with hooks, keep components small, use keys in lists, use memoization for performance.

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