

## Beginner Level

### 1. What is React?

**Answer:** A JavaScript library for building user interfaces using reusable components, developed by Meta.

### 2. What are components in React?

**Answer:** Reusable pieces of UI. Two types:

- **Functional Components**
- **Class Components**

### 3. What is JSX?

**Answer:** JavaScript XML — a syntax extension that lets you write HTML-like code in JavaScript.

### 4. What is the virtual DOM?

**Answer:** A lightweight copy of the actual DOM. React uses it to detect changes and update only what's necessary.

### 5. What are props?

**Answer:** Short for "properties" — data passed from parent to child components.

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## Intermediate Level

### 6. What is state in React?

**Answer:** State is a built-in object used to store dynamic data that affects component rendering.

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

**Answer:**

- **Props:** Passed by parent, read-only.

- **State:** Managed within the component, can be changed with `setState` or `useState`.

## 8. What are hooks? Name a few.

**Answer:** Functions that let you use React features in functional components.

Examples:

- `useState()`
- `useEffect()`
- `useContext()`
- `useRef()`
- `useReducer()`

## 9. What is `useEffect` used for?

**Answer:** To perform side effects (like fetching data, subscriptions, timers) in functional components.

## 10. What is conditional rendering?

**Answer:** Rendering UI elements based on conditions using JavaScript expressions (`if`, `&&`, `? :`).

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## Advanced Level

### 11. What is the context API?

**Answer:** A way to pass data through the component tree without props drilling.

### 12. What is `useMemo` vs `useCallback`?

- `useMemo`: Memoizes **computed values**.
- `useCallback`: Memoizes **functions** to prevent unnecessary re-renders.

### 13. What are controlled vs uncontrolled components?

- **Controlled:** Form data is handled by React (`useState`).
- **Uncontrolled:** Uses `ref` to directly access the DOM.

### 14. What is reconciliation in React?

**Answer:** The process React uses to update the DOM efficiently using the virtual DOM diffing algorithm.

### 15. What is lazy loading in React?

**Answer:** Loading components only when they're needed using `React.lazy` and `Suspense`.



## Bonus Interview Challenges

- Build a counter with `useState`.
- Create a custom hook (e.g., `useFetch`).
- Explain React's rendering process.
- Optimize a component with `React.memo`.