

Question based on Lec 3 – JS & NOSQL

Single Answer

1. What is the primary advantage of React's one-way data flow?
 - a) It allows direct manipulation of the DOM.
 - b) It ensures predictable state changes and easier debugging.
 - c) It allows data to flow from child components to parent components.
 - d) It eliminates the need for state management libraries.
2. Which React Hook is specifically designed for managing side effects in functional components?
 - a) useState
 - b) useEffect
 - c) useReducer
 - d) useMemo
3. What is the difference between React.Fragment and <div> in JSX?
 - a) React.Fragment adds an extra DOM node, while <div> does not.
 - b) React.Fragment does not add extra nodes to the DOM, while <div> does.
 - c) Both are identical in functionality and behavior.
 - d) React.Fragment is used only for styling purposes.
4. Which of the following describes the purpose of React's reconciliation process?
 - a) To merge multiple states into one global state object.
 - b) To compare the Virtual DOM with the real DOM and apply updates efficiently.
 - c) To manage communication between parent and child components.
 - d) To handle asynchronous operations in React applications.
5. What is the purpose of the key prop in React lists?
 - a) To uniquely identify list items for efficient rendering during updates.
 - b) To pass data from parent components to child components in lists.
 - c) To style list items dynamically based on their index.
 - d) To bind event handlers to specific list items.
6. Which lifecycle method is called when a component is about to be removed from the DOM?
 - a) componentDidMount()
 - b) componentWillUnmount()
 - c) shouldComponentUpdate()
 - d) getDerivedStateFromProps()
7. What happens if you forget to include a dependency array in the useEffect Hook?
 - a) The effect will only run once after the component mounts.
 - b) The effect will run every time the component re-renders, potentially causing performance issues.
 - c) The effect will not run at all.
 - d) The effect will throw an error during runtime.
8. Which bundling tool provides built-in support for Hot Module Replacement (HMR)?
 - a) Webpack

- b) Babel
 - c) Rollup
 - d) ESLint
9. What is the difference between controlled and uncontrolled components in React?
- a) Controlled components manage their own state internally, while uncontrolled components rely on external state management libraries like Redux.
 - b) Controlled components rely on props for rendering, while uncontrolled components rely on refs for accessing DOM elements directly.
 - c) Controlled components use refs for input values, while uncontrolled components use state variables for input values.
 - d) Controlled components use Redux for state management, while uncontrolled components use Context API.
10. Which React feature allows developers to share logic across multiple functional components without duplicating code?
- a) Context API
 - b) Higher-Order Components (HOCs)
 - c) Custom Hooks
 - d) Render Props

Multiple Answer

11. Which of these are valid reasons to use React's Context API? (Select two correct answers.)
- a) To avoid prop drilling by sharing data across deeply nested components
 - b) To replace Redux entirely for all state management needs
 - c) To manage global state that is accessed by multiple unrelated components
 - d) To optimize performance by reducing unnecessary re-renders
12. Which React lifecycle methods are commonly used in class components? (Select three correct answers.)
- a) `componentDidMount()`
 - b) `componentWillUnmount()`
 - c) `getSnapshotBeforeUpdate()`
 - d) `useEffect()`
13. Which of these Hooks can be used to optimize performance in functional components? (Select two correct answers.)
- a) `useMemo`
 - b) `useReducer`
 - c) `useCallback`
 - d) `useContext`
14. What are advantages of using JSX over traditional JavaScript templates? (Select two correct answers.)
- a) JSX prevents cross-site scripting attacks by escaping JavaScript expressions automatically
 - b) JSX provides built-in support for fetching data from APIs
 - c) JSX allows embedding JavaScript logic directly into HTML-like syntax
 - d) JSX improves performance by reducing Virtual DOM updates

15. Which tools are commonly used alongside React for development and optimization? (Select three correct answers.)
- a) Babel
 - b) ESLint
 - c) Webpack
 - d) PostgreSQL

Fill in the Blanks

16. Reconciliation is the process where React compares the Virtual DOM with the previous version to determine which parts of the UI need updating.
17. In React, props refers to passing data from parent components to child components as immutable properties.
18. The useMemo Hook allows you to cache expensive calculations and recompute them only when dependencies change.
19. In JSX, you can conditionally render elements using logical operators like &&, ||, or ternary operators.
20. parcel is a bundling tool known for its minimal configuration requirements and fast build times.