1)Which of the following methods is used to create reusable components in React?

a) render()

b) setState()

c) componentDidMount()

d) createComponent()

**Answer: d) createComponent()**

2)In React, which lifecycle method is invoked once the component is removed from the DOM?

a) componentWillUnmount()

b) componentWillUnmount()

c) componentWillUnmounted()

d) componentWillRemove()

**Answer: a) componentWillUnmount()**

3)What does the PureComponent class do in React?

a) It optimizes performance by avoiding unnecessary re-renders.

b) It allows using pure functions as components.

c) It ensures components are pure without side effects.

d) It enhances the functionality of regular components.

**Answer: a) It optimizes performance by avoiding unnecessary re-renders.**

4)In React, how do you pass data from a parent component to a child component?

a) Using props

b) Using state

c) Using context

d) Using refs

**Answer: a) Using props**

5)Which of the following is not a valid way to manage state in React?

a) Using this.state

b) Using setState()

c) Using props

d) Using useState()

**Answer: c) Using props**

6)What does the shouldComponentUpdate() method return?

a) True

b) False

c) Null

d) Undefined

**Answer: a) True**

7)What does React.Fragment do?

a) It creates a virtual DOM fragment.

b) It is a higher-order component.

c) It is used to group multiple elements without adding extra nodes to the DOM.

d) It represents a real DOM node.

**Answer: c) It is used to group multiple elements without adding extra nodes to the DOM.**

8)Which of the following lifecycle methods is invoked immediately after a component is mounted?

a) componentDidMount()

b) componentWillMount()

c) componentDidUpdate()

d) componentWillUpdate()

**Answer: a) componentDidMount()**

9)How do you prevent a component from rendering until its data is fetched in React?

a) Use async/await in the render method.

b) Use a loading state and conditionally render the component.

c) Use a callback function in setState().

d) Use setTimeout() to delay rendering.

**Answer: b) Use a loading state and conditionally render the component.**

10) What is the purpose of keys in React lists?

a) To uniquely identify list items for efficient rendering

b) To specify the order of list items

c) To assign custom properties to list items

d) To generate random values for list items

**Answer: a) To uniquely identify list items for efficient rendering**

11) Which of the following is NOT a way to optimize React performance?

a) Using shouldComponentUpdate()

b) Using memoization techniques

c) Minimizing the use of setState()

d) Increasing the use of higher-order components

**Answer: d) Increasing the use of higher-order components**

12) In React, what is the purpose of refs?

a) To reference DOM elements or React components directly

b) To manage state within functional components

c) To handle routing in a React application

d) To store metadata about components

**Answer: a) To reference DOM elements or React components directly**

13) What is the main benefit of using React Router?

a) It provides a centralized state management system.

b) It allows for efficient data fetching from APIs.

c) It enables client-side routing in a React application.

d) It optimizes rendering performance of React components.

**Answer: c) It enables client-side routing in a React application.**

14) Which of the following is true about React hooks?

a) They are only used in class components.

b) They allow functional components to use state and other React features.

c) They are deprecated in the latest version of React.

d) They are only used for styling components.

**Answer: b) They allow functional components to use state and other React features.**

15) What does the useMemo() hook do in React?

a) It memoizes the value returned by a function, avoiding unnecessary computations.

b) It updates the state of a component.

c) It creates a memoized version of a component.

d) It memoizes the props passed to a component.

**Answer: a) It memoizes the value returned by a function, avoiding unnecessary computations.**

16) In React, how can you optimize performance when dealing with large lists?

a) By using virtualization techniques like windowing

b) By increasing the size of the component's state

c) By nesting lists within lists

d) By using inline styles for each list item

**Answer: a) By using virtualization techniques like windowing**

17)What is the purpose of the useContext hook in React?

a) To manage forms and form state

b) To access context in functional components

c) To handle asynchronous operations

d) To create reusable components

**Answer: b) To access context in functional components**

18) What is the difference between controlled and uncontrolled components in React?

a) Controlled components use refs while uncontrolled components use state.

b) Controlled components rely on internal state managed by React, while uncontrolled components rely on DOM manipulation.

c) Controlled components can only be used with class components, while uncontrolled components can only be used with functional components.

d) There is no difference between controlled and uncontrolled components.

**Answer: b) Controlled components rely on internal state managed by React, while uncontrolled components rely on DOM manipulation.**

19) Which of the following is true about React portals?

a) They enable communication between sibling components.

b) They are used to render components outside the DOM hierarchy of the parent component.

c) They are deprecated in React.

d) They are used for client-side routing.

**Answer: b) They are used to render components outside the DOM hierarchy of the parent component.**

20) How does React handle browser events?

a) React uses its own event system called SyntheticEvent.

b) React directly interacts with the browser's native event system.

c) React uses the EventEmitter library for event handling.

d) React doesn't handle browser events.

**Answer: a) React uses its own event system called SyntheticEvent.**

21) What is the purpose of the useCallback hook in React?

a) To memoize the output of a function to prevent unnecessary re-renders

b) To handle asynchronous operations within a component

c) To create reusable components

d) To manage forms and form state

**Answer: a) To memoize the output of a function to prevent unnecessary re-renders**

22) Which of the following methods is used to update the state based on the previous state in React?

a) setState()

b) prevState()

c) this.state.update()

d) this.setState()

**Answer: d) this.setState()**

23) What is the purpose of the useReducer hook in React?

a) To manage complex state logic within a component

b) To render a component conditionally

c) To perform side effects in a functional component

d) To create custom hooks

**Answer: a) To manage complex state logic within a component**

24)How can you handle errors in React components?

a) Using try-catch blocks in the render method

b) Using componentDidCatch() lifecycle method

c) Using throw statements in functional components

d) Using setState() to set an error flag

**Answer: b) Using componentDidCatch() lifecycle method**

25)What is the significance of React's context API?

a) It simplifies data passing between components without having to explicitly pass props through every level of the component tree.

b) It allows communication between different browser tabs.

c) It enhances the performance of React applications.

d) It provides a way to manipulate the DOM directly.

**Answer: a) It simplifies data passing between components without having to explicitly pass props through every level of the component tree.**

26)What does the act() function do in React testing?

a) It updates the component's state.

b) It triggers an action in the component.

c) It wraps code that performs updates to the React component tree in a synchronous manner.

d) It checks if a component has rendered correctly.

**Answer: c) It wraps code that performs updates to the React component tree in a synchronous manner.**

27)Which of the following statements about React's server-side rendering (SSR) is true?

a) SSR improves client-side performance.

b) SSR is not compatible with search engine optimization (SEO).

c) SSR sends fully rendered pages to the client instead of just HTML skeletons.

d) SSR is primarily used for client-side routing.

**Answer: c) SSR sends fully rendered pages to the client instead of just HTML skeletons.**

1. How can you optimize performance in React applications?

a) By using memoization techniques

b) By minimizing the use of inline styles

c) By increasing the component hierarchy depth

d) By using synchronous rendering

**Answer: a) By using memoization techniques**

1. What is the purpose of the useCallback() hook in React?

a) To memoize the result of a function

b) To manage side effects within a functional component

c) To create a new context provider

d) To handle asynchronous operations

**Answer: a) To memoize the result of a function**

1. What is the purpose of React's Error Boundary?

a) To catch errors occurring during the rendering of a component's children

b) To handle errors during API calls

c) To prevent errors from being thrown in a component

d) To trigger an error event for debugging purposes

**Answer: a) To catch errors occurring during the rendering of a component's children**

1. How can you update the state in React based on the previous state?

a) By directly modifying the state object

b) By using a global state management library

c) By passing the previous state to setState()

d) By using the prevState() method

**Answer: c) By passing the previous state to setState()**

1. Which of the following is NOT a valid type of ref in React?

a) Forwarding ref

b) Mutable ref

c) Callback ref

d) Legacy ref

**Answer: b) Mutable ref**

1. What does the shouldComponentUpdate() method return?
2. True b)False

**Answer: a) True**

1. What is the purpose of the useLayoutEffect() hook in React?

a) To perform side effects after the component has rendered

b) To trigger layout changes in the DOM

c) To perform side effects synchronously after DOM mutations

d) To synchronize state across multiple components

**Answer: c) To perform side effects synchronously after DOM mutations**

1. In React, what is the purpose of the contextType property?

a) To specify the type of context a component consumes

b) To define the default context for a component

c) To access context within a class component

d) To declare the context provider for a component

**Answer: c) To access context within a class component**

1. What does React.memo() do?

a) It memoizes the result of a component rendering

b) It creates a memoized version of a component

c) It optimizes the performance of React applications

d) It converts a functional component into a class component

**Answer: b) It creates a memoized version of a component**

1. What is the purpose of the useImperativeHandle() hook in React?

a) To interact with a child component imperatively

b) To handle imperative DOM operations

c) To manage imperative state changes

d) To synchronize state across components

**Answer: a) To interact with a child component imperatively**

1. Which of the following is NOT a valid React synthetic event?

a) onClick

b) onSubmit

c) onLoad

d) onDragStart

**Answer: c) onLoad**

1. What is the significance of the key prop in React lists?

a) It specifies the order of list items

b) It identifies each list item uniquely for efficient updates

c) It provides a unique identifier for the list itself

d) It controls the animation of list transitions

**Answer: b) It identifies each list item uniquely for efficient updates**

1. How can you conditionally apply styles to a React component?

a) By using the style prop and passing a conditional object

b) By using the class prop and passing a conditional class name

c) By directly modifying the CSS file

d) By using inline styles within the JSX

**Answer: a) By using the style prop and passing a conditional object**

1. What is the purpose of the forwardRef() function in React?

a) To create a reference to a DOM element

b) To forward props to a child component

c) To access the parent component from a child component

d) To create a higher-order component

**Answer: b) To forward props to a child component**

1. Which of the following lifecycle methods is invoked just before a component is unmounted? a) componentWillUnmount

b) componentDidUpdate

c) componentWillMount

d) componentDidUnmount

**Answer: a) componentWillUnmount**

1. How can you prevent a component from re-rendering unnecessarily in React?

a) By using the shouldComponentUpdate lifecycle method

b) By setting the shouldUpdate prop to false

c) By calling the preventDefault() function

d) By using the useMemo() hook

**Answer: a) By using the shouldComponentUpdate lifecycle method**

1. What is the purpose of the useRef() hook in React?

a) To create a reference to a DOM element

b) To manage state within functional components

c) To fetch data from an API

d) To handle routing within a React application

**Answer: a) To create a reference to a DOM element**

1. In React, what is the significance of the aria-\* attributes?

a) They control the layout of a component

b) They provide accessibility information to assistive technologies

c) They define custom event handlers for components

d) They trigger animations within a component

**Answer: b) They provide accessibility information to assistive technologies**

1. What is the purpose of React's dangerouslySetInnerHTML attribute?

a) To render raw HTML within a component

b) To create dynamic event handlers

c) To manage the component's internal state

d) To apply styles to a component

**Answer: a) To render raw HTML within a component**

1. Which of the following statements is true about server-side rendering (SSR) in React?

a) SSR improves client-side performance by offloading rendering tasks to the server

b) SSR is mainly used for rendering static content

c) SSR reduces initial page load time but may increase subsequent rendering time

d) SSR is incompatible with search engine optimization (SEO)

**Answer: c) SSR reduces initial page load time but may increase subsequent rendering time**

1. What is the purpose of React.Fragment?

a) To create a virtual DOM fragment

b) To group multiple elements without adding extra nodes to the DOM

c) To define a reusable component

d) To optimize the rendering performance of React components

**Answer: b) To group multiple elements without adding extra nodes to the DOM**

1. How can you handle errors in React components?

a) By using try-catch blocks within the render method

b) By throwing errors directly in the component

c) By using componentDidCatch() lifecycle method

d) By setting an error state using setState()

**Answer: c) By using componentDidCatch() lifecycle method**

1. What is the purpose of React's useLayoutEffect() hook?
   1. To perform side effects after rendering

b) To schedule a callback function for the next render

c) To handle layout changes in the DOM

d) To perform side effects synchronously after DOM mutations

**Answer: d) To perform side effects synchronously after DOM mutations**