1.What does React's Virtual DOM do?

a) It directly updates the browser DOM

b) It maintains a lightweight copy of the browser DOM for efficient updates

c) It replaces the browser DOM with a simulated DOM environment

d) It disables DOM manipulation in favor of direct state changes

2. What is the purpose of the key attribute in React?

a) It defines a unique identifier for a component within an array

b) It sets the initial state of a component

c) It specifies the encryption key for secure communication

d) It controls the visibility of a component

3. What does the useState hook do in React?

a) It provides access to browser cookies

b) It creates a state variable and a function to update it

c) It manages routing in a React application

d) It fetches data from an external API

4. What is the purpose of the useEffect hook in React?

a) To perform side effects in function components

b) To handle user input events

c) To create reusable custom hooks

d) To manage component styling and layout

5. What is Redux used for in React applications?

a) It's a routing library for managing navigation

b) It's a state management library for managing application state

c) It's a styling library for creating responsive designs

d) It's a testing framework for React components

6. What is the purpose of the React Router library in a React application?

a. To manage and synchronize state across multiple components

b. To create animations and transitions between React components

c. To handle client-side routing and navigation

d. To manage global application state in a Redux-like manner

7. What is the purpose of React Hooks?

a. To manipulate the DOM directly

b. To manage state and side effects in functional components

c. To create class components

d. To handle routing in React applications

8. Which of the following statements about React hooks is false?

a) Hooks are functions that let you use React state and lifecycle features within functional components.

b) useState() is a hook that allows you to add state to functional components.

c) useEffect() is a hook used for data fetching and side effects in functional components.

d) Hooks can only be used in class components.

9. In React, what is the purpose of the render() method?

a) To initialize state.

b) To perform side effects.

c) To render JSX to the DOM.

d) To update the component's state.

10. Which method is used to manually update the state of a component?

a) this.setState()

b) this.updateState()

c) this.modifyState()

d) this.changeState()

11. What is the purpose of the spread operator (...) in ES6 JavaScript?

a) To merge multiple arrays into a single array

b) To create a shallow copy of an object or array

c) To access the prototype of an object

d) To destructure objects into individual elements

12. What is the purpose of the "let" keyword introduced in ES6?

a) To declare global variables

b) To declare variables that are block-scoped

c) To declare constant variables

d) To declare variables that cannot be reassigned

13. What is the purpose of the "map" method introduced in ES6 for arrays?

a) To filter elements in an array based on a condition

b) To iterate over each element of an array and apply a function to it, returning a new array

c) To add elements to the beginning or end of an array

d) To sort the elements of an array

14. Consider the following React component:

* **import React, { Component } from 'react';**
* **class MyComponent extends Component {**
* **render() {**
* **return (**
* **<div><h1>Hello, {this.props.name}!</h1></div>**
* **);**
* **}**
* **}**

How would you pass the prop "name" to this component when rendering it?

a) <MyComponent name="World" />

b) <MyComponent.props name="World" />

c) <MyComponent.name="World" />

d) <MyComponent "World" />

15. Consider the following React component:

* **import React, { useState } from 'react';**
* **const MyComponent = () => {**
* **const [isOpen, setIsOpen] = useState(false);**
* **const toggleModal = () => {**
* **setIsOpen(!isOpen);**
* **};**
* **return (**
* **<div>**
* **<button onClick={toggleModal}>Toggle Modal</button>**
* **{isOpen && <div>Modal Content</div>}**
* **</div>**
* **);**
* **};**
* **export default MyComponent;**

What does the toggleModal function do?

a) It opens the modal when the button is clicked.

b) It closes the modal when the button is clicked.

c) It toggles the state of the modal (open/close) when the button is clicked.

d) It does not affect the modal's visibility.