React.js Common Interview Questions

1. What is React.js?
   React is an open-source JavaScript library for building user interfaces.

2. What are the key features of React?
   Virtual DOM, component-based architecture, reusability, and one-way data flow.

3. What is JSX in React?
   JSX (JavaScript XML) is a syntax extension that allows you to write HTML-like code in your JavaScript files.

4. What is a React component?
    A React component is a reusable, self-contained piece of user interface that can be rendered and composed within the application.

5. Explain the difference between functional components and class components.
   Functional components are stateless and defined as JavaScript functions, while class components have a state and are defined as ES6 classes.

6. What is the purpose of `state` in React?
   `state` is used to manage and store data that can be changed over time and affects the rendering of the component.

7. What are props in React?
   - Props (short for properties) are used to pass data from a parent component to a child component.

8. What is the significance of the `render()` method in a React component?
 The `render()` method returns the JSX that represents the component's UI. It gets called when the component needs to be rendered.

9. What is the Virtual DOM in React?
 The Virtual DOM is a lightweight in-memory representation of the actual DOM. React uses it to optimize updates and improve performance.

10. Explain the concept of one-way data flow in React.
 One-way data flow means that data is passed down from parent components to child components through props, and child components cannot directly modify the parent's data.

11. How do you handle forms in React?
 You can use controlled components, where form elements like input fields are bound to the component's state and updated via state changes.

12. What is the purpose of React Router?
 React Router is used for client-side routing in React applications, enabling the creation of multiple pages and navigation between them.

13. What is the significance of `componentDidMount()` in a React component?
 `componentDidMount()` is a lifecycle method called after a component is rendered. It is often used to make AJAX requests or perform initial setup.

14. How can you conditionally render components in React?
 You can use conditional rendering by using JavaScript expressions and conditional statements within the JSX.

15. What is the key difference between `props` and `state`?
`props` are used to pass data from parent to child components and are immutable. `state` is used for managing component-specific data and can be changed over time.