1. Explain React Components

React Components are the basic building blocks of a React application.
They define **how the UI looks and behaves**. Each component is a **reusable piece of UI** that can be rendered independently.

- Components can be either **class-based** or **function-based**.

- They return **JSX** (a syntax that looks like HTML) to describe UI elements.

- Components can **accept inputs** (called **props**) and maintain their own **state** (for class or hook-based components).

2. Differences Between Components and JavaScript Functions

Feature	React Components	JavaScript Functions
Purpose	Create and control UI elements	Perform logic or calculations
Output	JSX (HTML-like syntax)	Data (number, string, object, etc.)
Uses JSX	Yes	No
Access to React Features	Yes (state, props, lifecycle/hooks)	No
Example	function Home() { return Hello ; }	function add(a,b) { return a + b; }

3. Types of React Components

There are **two main types**:

1. **Class Components**
2. **Function Components**

4. Explain Class Component

A **Class Component** is created using ES6 class syntax and extends React.Component.

Key Features:

- Has a render() method that returns JSX.

- Can use **state** and **lifecycle methods** like componentDidMount(), componentDidUpdate(), etc.

Example:

jsx

```jsx
import React, { Component } from 'react';


class Welcome extends Component {
  render() {
    return <h1>Welcome to Class Component</h1>;
  }
}
```

5. Explain Function Component

A **Function Component** is a simple JavaScript function that returns JSX.

Key Features:

- Cannot use lifecycle methods directly (but can use **hooks** like useEffect).
- Can use **props**.
- Lightweight and easier to write.

Example:

jsx

```jsx
import React from 'react';
function Welcome() {
  return <h1>Welcome to Function Component</h1>;
}
```

6. Define Component Constructor

The **constructor** is a special method used in **class components**.

Purpose:

- Initializes component **state**
- Binds class methods to the component instance

Example:

jsx

```jsx
constructor(props) {
```

```
super(props);
this.state = {
  message: 'Hello'
};
}
```

Must call super(props) before accessing this.

7. Define render() Function

The **render()** function is a required method in class components.

Purpose:

- Returns the **JSX** that describes what the UI should look like.
- React calls render() to display the component.

Example:

jsx

```
render() {
  return (
    <div>
      <h1>This is rendered output</h1>
    </div>
  );
}
```