**1. Define SPA and Its Benefits**  
SPA stands for **Single-Page Application**. It is a type of web application or website that dynamically rewrites the current web page with new data from the server instead of loading entire new pages. This means the page does not reload completely during navigation, resulting in a smoother and faster user experience. SPAs typically use JavaScript frameworks like React, Angular, or Vue. The main benefits of SPAs include faster performance after the initial load, better user experience, reduced server load, and the ability to create highly interactive web applications that behave more like desktop apps.

**2. Define React and Identify Its Working**  
**React** is a popular open-source JavaScript library developed by Facebook for building user interfaces, particularly for single-page applications. It allows developers to create reusable UI components that manage their own state. React works based on a concept called the **Virtual DOM**, which is a lightweight copy of the actual DOM. When a change is made, React updates the Virtual DOM first, calculates the most efficient way to update the real DOM, and applies only those changes. This approach improves performance and ensures fast, responsive user interfaces.

**3. Identify the Differences Between SPA and MPA**  
SPA (Single-Page Application) and MPA (Multi-Page Application) differ mainly in how they handle page navigation. In an SPA, all content is loaded on a single HTML page, and JavaScript is used to dynamically update the content without reloading the page. This leads to faster navigation and a smoother user experience. In contrast, an MPA loads a new HTML page from the server for each action or route, which can be slower but is often better for large-scale apps like e-commerce platforms. SPAs are ideal for highly interactive interfaces, while MPAs offer better SEO and easier separation of content.

**4. Explain Pros & Cons of Single-Page Application**  
Single-Page Applications offer several **advantages**, such as faster navigation due to reduced page reloads, a more seamless and responsive user experience, and the ability to create highly interactive applications. They also reduce server requests since only necessary data is fetched. However, SPAs also come with **some drawbacks**. Initial loading time can be longer because all scripts are downloaded upfront. SEO can be a challenge since content is rendered dynamically, although workarounds exist. Additionally, SPAs may require more complex client-side logic and routing, which can increase development complexity.

**5. Explain About React**  
**React** is a powerful JavaScript library used to build modern web interfaces. It allows developers to build applications using reusable and composable components. Each component represents a part of the user interface and can manage its own state. React promotes a declarative style of programming, meaning developers describe what the UI should look like for different states, and React takes care of rendering it efficiently. It is widely adopted because of its performance, developer-friendly features, active community, and ecosystem. React is ideal for building SPAs and can be integrated with other libraries or frameworks if needed.

**6. Define Virtual DOM**  
The **Virtual DOM (Document Object Model)** is a core concept in React. It is a lightweight, in-memory copy of the real DOM. Whenever a change occurs in a component’s state or props, React updates the Virtual DOM instead of the real DOM directly. Then, it compares the updated Virtual DOM with the previous one using a process called “diffing” to identify the exact changes. Finally, it applies only those changes to the actual DOM, making updates more efficient. This approach improves performance and ensures smoother UI updates compared to manipulating the real DOM directly.

**7. Explain Features of React**  
React comes with a rich set of features that make it a preferred choice for building modern web applications. Some of its key features include the **component-based architecture**, which encourages reusability and modularity; the **Virtual DOM**, which optimizes UI rendering; and **JSX**, a syntax extension that allows writing HTML-like code within JavaScript. React also supports **unidirectional data flow**, making data easier to trace and debug. With the addition of **Hooks**, function components can now manage state and side effects. Furthermore, React has a strong community, rich ecosystem, and is backed by Meta (Facebook), ensuring long-term support and innovation.