**Question 1: What is React.js? How is it different from other JavaScript frameworks and libraries?**

**React.js** is a JavaScript library developed by Facebook for building **user interfaces (UIs)**, primarily for **single-page applications (SPAs)**. It allows developers to create **interactive and dynamic** web applications efficiently.

**How React.js is Different**

1. **Component-Based** – Unlike traditional libraries, React breaks UIs into reusable **components**.
2. **Virtual DOM** – React updates only the changed parts of the UI instead of reloading the entire page.
3. **Unidirectional Data Flow** – Ensures better control of data changes, unlike Angular’s two-way data binding.
4. **Declarative Syntax** – Uses **JSX**, making UI code more readable and easier to write.
5. **Library, Not a Framework** – Unlike Angular, React focuses only on the **view layer**, allowing developers to integrate other libraries easily.

**Question 2: Core Principles of React**

1. **Virtual DOM**
   * React maintains a **lightweight copy** of the real DOM (Virtual DOM).
   * It compares the old and new versions (diffing process) and updates only the **necessary** parts.
   * Improves **performance** by reducing unnecessary re-renders.
2. **Component-Based Architecture**
   * UI is broken into **small, reusable components**.
   * Components manage their own **state** and logic.
   * Makes development **modular** and easy to maintain.
3. **One-Way Data Binding**
   * Data flows in **one direction**, making debugging easier.
   * Helps maintain predictable state management.
4. **Declarative UI**
   * Uses JSX to describe what the UI should look like.
   * React handles the updates automatically when data changes.
5. **State and Props**
   * **State** manages component-specific data.
   * **Props** pass data between components.

**Question 3: Advantages of Using React.js in Web Development**

1. **Fast Rendering** – Virtual DOM ensures **efficient** updates.
2. **Reusability** – Components can be **reused**, reducing redundancy.
3. **Strong Community** – Large developer base, many third-party tools.
4. **SEO-Friendly** – Faster page rendering improves **search engine ranking**.
5. **Flexibility** – Works with various **libraries** and **frameworks** like Redux, Next.js.