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

**Answer:** React.js is an open-source JavaScript library developed by Facebook for building dynamic user interfaces, especially for single-page applications (SPAs). It enables developers to create reusable UI components and efficiently update the UI with minimal re-rendering.

**Differences from Other Frameworks/Libraries:**

* Uses a **Virtual DOM** for faster UI updates.
* Follows a **component-based architecture** for reusability.
* Implements **unidirectional data flow** for better state management.
* Unlike Angular (a full framework), React focuses only on the **view layer**, allowing flexible integration with other libraries.

**Question 2: Explain the core principles of React such as the Virtual DOM and component-based architecture.**

**Answer:**

1. **Virtual DOM** – React maintains a lightweight copy of the actual DOM and updates only the changed parts, making UI updates fast and efficient.
2. **Component-Based Architecture** – The UI is divided into independent, reusable components, making development modular and maintainable.
3. **Unidirectional Data Flow** – Data flows in a single direction (from parent to child components), ensuring better control and debugging.
4. **JSX (JavaScript XML)** – Allows writing HTML-like syntax inside JavaScript for better readability and maintainability.

**Question 3: What are the advantages of using React.js in web development?**

**Answer:**

* **Fast Performance** due to Virtual DOM.
* **Reusable Components** reduce code duplication.
* **SEO-Friendly** compared to traditional frontend libraries.
* **Strong Community Support** with regular updates.
* **Easy to Learn & Integrate** with other technologies.