**Module 8 Assignment**

Understanding React and Its Advantages (5 Marks)

1. React's Core Features: Component-Based Application Structure:

• Each React application is organized into independent components which can be reused.

• Each component is responsible for its state and UI.

• Components can be built upon one another to create more complicated UIs out of simple components. Virtual DOM:

• React takes a snapshot of the actual DOM and creates a lightweight copy.

• On state changes, React compares the Virtual DOM to the previous version. • Changes are only made to the real DOM where required (reconciliation). • This approach is far more efficient than updating the DOM directly.

Unidirectional Data Flow: • In React data flows in one direction: parent to children. • State is held by parent components and passed down through props. •

The above enhances predictability and makes debugging easier.

• Reduced development time through increased component reuse.

• High performance for even complex UIs due to Virtual DOM.

• The application is easier to maintain and understand with unidirectional flow.

• Enabling the building of high-performance, scalable web applications.