React Technical Concepts: -

1. React is a library, not a framework.
2. JSX stands for JavaScript XML. JSX is basically a syntax extension of JavaScript.
3. It is faster than normal JavaScript as it performs optimizations while translating to regular JavaScript.
4. Babel is a very famous transpiler that basically allows us to use future JavaScript in today’s browsers. In simple words, it can convert the latest version of JavaScript code into the one that the browser understands.
5. Transpilers are useful for compatibility between different versions of languages, whereas compilers focus on optimising code for efficient execution.
6. React JS Virtual DOM is an in-memory representation of the DOM. DOM refers to the Document Object Model that represents the content of XML or HTML documents as a tree structure so that the programs can be read, accessed and changed in the document structure, style, and content.
7. **Disadvantages of real DOM :**

Every time the DOM gets updated, the updated element and its children have to be rendered again to update the UI of our page. For this, each time there is a component update, the DOM needs to be updated and the UI components have to be re-rendered.

1. **How does virtual DOM actually make things faster?**

When anything new is added to the application, a virtual DOM is created and it is represented as a tree. Each element in the application is a node in this tree. So, whenever there is a change in the state of any element, a new Virtual DOM tree is created. This new Virtual DOM tree is then compared with the previous Virtual DOM tree and make a note of the changes. After this, it finds the best possible ways to make these changes to the real DOM. Now only the updated elements will get rendered on the page again.

1. This process of comparing the current Virtual DOM tree with the previous one is known as ‘diffing’. Once React finds out what exactly has changed then it updates those objects only, on real DOM.
2. Virtual DOM makes the performance faster, not because the processing itself is done in less time. The reason is the amount of changed information – rather than wasting time on updating the entire page, you can dissect it into small elements and interactions
3. **React-DOM** is a package in React that provides DOM-specific methods that can be used at the top level of a web app to enable an efficient way of managing DOM elements of the web page.
4. React JS keys are a way of providing a unique identity to each item while creating the React JS Lists so that React can identify the element to be processed.
5. ReactJS Refs are used to access and modify the DOM elements in the React Application. It creates a reference to the elements and uses it to modify them.
6. Two types of components-Functional components and Class components.
7. If the previous value of the state or props and the new value of the state or props are the same, the component will not re-render itself. Pure Components restricts the re-rendering when there is no use for re-rendering of the component. Pure Components are Class Components that extend React.PureComponent.
8. In React, Hooks are reusable functions that provide access to state in React Applications. Hooks were introduced in the 16.8 version of React. Hooks give access to states for functional components while creating a React application. It allows you to use state and other React features without writing a class.
9. React State Hooks: -useState() and useReducer() [used for more complex state update logic].
10. useContext() hook-Context provides a way to pass data or state through the component tree without having to pass props down manually through each nested component. It is designed to share data that can be considered as global data for a tree of React components, such as the current authenticated user or theme (e.g. color, paddings, margins, font-sizes).
11. The useEffect Hook allows us to perform side effects on the components. fetching data, directly updating the DOM and timers are some side effects. It is called every time any state if the dependency array is modified or updated.