Test Front end react:

Basic Question:

1. **What is Virtual DOM?**
2. **What is the difference between Virtual DOM and Real DOM?**
3. **How does React Virtual DOM work?**
4. **What is JSX?**
5. **What is the difference between State and Props?**
6. **How does the useState hook work?**
7. **How does the useEffect hook work?**
8. **What are the ways to use CSS in React?**
9. **What are refs in React?**
10. **What is the difference between class components and function components?**
11. **What is Side Effect?**
12. **React Hooks?**
13. **What is Context in React?**
14. **What is useContext?**
15. **What is Suspense in React?**
16. **What's the component's lifecycle in React?**
17. **What are Controlled and Uncontrolled components?**
18. **What are Higher-Order Components (HOCs)?**
19. **How does the useReducer hook work?**
20. **What are React Fragments and why are they used?**

**Advanced question**

1. **What is ref forwarding in React?**
2. **Higher-Order Components (HOCs)?**
3. **Explain the concept of error boundaries in React?**
4. **What are Server Components in React?**
5. **How to lazy load components in React?**
6. **Can you use hooks in Server Components?**
7. **What is hydration?**
8. **What is Code Splitting in React?**
9. **What is the useCallback hook and how does it differ from useMemo?**
10. **What are React Fragments and why are they used?**
11. **What is React Fiber and how does it improve React?**
12. **What are React Portals and when would you use them?**
13. **What is Prop Drilling and how can it be avoided?**
14. **What is the useReducer hook and when should you use it?**
15. **How does React handle events?**
16. **How do you manage global state in a React application?**
17. **What is React.StrictMode and why is it useful?**
18. **What is reconciliation in React?**
19. **How can you optimize the performance of a React application?**
20. **How do you test React components?**
21. **What is the difference between a controlled and uncontrolled component in React?**
22. **How do you handle forms in React?**
23. **How do you implement authentication in a React application?**

Senior question

1. **How does React Virtual DOM work under the hood?**
2. **Explain advanced optimization techniques in React.**
3. **How would you architect a large-scale React application?**
4. **How do you manage performance bottlenecks in React applications?**
5. **Describe your experience with state management libraries such as Redux or MobX.**
6. **How do you implement server-side rendering (SSR) in React?**
7. **What are the challenges and solutions in migrating a legacy application to React?**
8. **Explain the trade-offs between different state management approaches in React.**
9. **How do you ensure security in a React application?**
10. **Describe a complex problem you solved in a React application and how you approached it.**