Exam questions

Frontend exam January 2024

Question 1

ACCEPTED

JS

1. What are higher-order functions in JavaScript? Give an example.

APPROVED

REACT

2. What is a React component?
3. Explain the benefits of using components compared to how you would build a web application in vanilla javascript.

APPROVED

Security/Routing/Styling

4. Explain what React Router is and its purpose in a React application.
5. Show an example of how routing works in React

APPROVED

Question 2

ACCEPTED

APPROVED

JS

1. What is a callback function in JavaScript and when would you use one?

REACT

2. What is JSX? Provide an example.
3. How does JSX differ from HTML?

APPROVED

Security/Routing/Styling

4. Describe the purpose of `flexbox` and `grid` in css, and show some examples of what can be achieved by applying them.

APPROVED

Question 3

JS

1. What are the purposes and differences between the package.json and package-lock.json files?

REACT

2. Describe the purpose of props in React.
3. Explain the role of state in a React component.

Security/Routing/Styling

4. Describe conceptually how we deploy a React frontend application to a docker container on a virtual machine.

Question 4

ACCEPTED

JS

1. Explain the concept of promises in JavaScript. How do they differ from callbacks?

APPROVED

REACT

2. Explain the following code:

```
import React, { useState, useEffect } from 'react';

const ErrorBoundary = ({ children }) => {
  const [hasError, setHasError] = useState(false);

  useEffect(() => {
    const handleError = (error, info) => {
      console.error('Error caught by error boundary:', error, info);
      setHasError(true);
    };

    window.addEventListener('error', handleError);

    return () => {
      window.removeEventListener('error', handleError);
    };
  }, []);

  if (hasError) {
    return <h1>Something went wrong.</h1>;
  }

  return children;
};

const MyComponent = () => {
  return (
    <ErrorBoundary>
      {/* The rest of the component tree goes here */}
    </ErrorBoundary>
  );
};
```

APPROVED

Security/Routing/Styling

3. Describe some important design principles when developing a website that should be working well on mobile, tablet, as well as desktop browsers.

APPROVED

Question 5

JS

1. What is the difference between synchronous and asynchronous programming and how does async and await fit into this?

REACT

2. Describe how conditional rendering is achieved in React.
3. Provide an example of using the ternary operator for conditional rendering.

Security/Routing/Styling

4. Describe conceptually the typical flow of using JWTs for user authentication in a React application.

Question 6

ACCEPTED

JS

1. What is the difference between localStorage and sessionStorage in JavaScript?

APPROVED

REACT

2. What is the purpose of the useEffect hook?
3. Explain the need for the dependencies array in the useEffect hook.

APPROVED

Security/Routing/Styling

4. Explain how navigation works in React, and the difference from how it's done in a multipage application.
5. Show an example of how navigation can be implemented in React

APPROVED

Question 7

ACCEPTED

JS

1. What is the purpose of the window object in JavaScript? ✓ APPROVED

REACT

2. How are events handled in React compared to vanilla javascript? ✓ APPROVED
3. Show examples of how to handle form submit events, and how to handle input change events.

Security/Routing/Styling

4. Describe and show how we log in a user in React with JWT. ✓ APPROVED

Question 8

JS

1. Explain the concept of event bubbling in JavaScript.

REACT

2. What is the purpose of the key attribute in React lists?
3. Explain how the map function is used for rendering lists in React.

Security/Routing/Styling

4. Describe conceptually what HTTPS is and how we got it working on our deployed websites.

Question 9

JS 

1. What is the scope of a variable in JavaScript? Explain the difference between global and local scope.

REACT

2. How are controlled components different from uncontrolled components in React forms?
3. Explain the role of the onChange event in form handling and show examples.

Security/Routing/Styling

4. Explain how sub routing is working
5. Show an example of using sub routing with the element.

Question 10

JS

1. What is the spread operator in JavaScript and how does it differ from the rest operator?

REACT

2. What are React Hooks? Provide examples of at least two built-in hooks.
3. Explain the difference between useState and useEffect.
4. Show example of how you handle errors in React.

Security/Routing/Styling

5. Describe conceptually what Same Origin Policy and CORS is, and how we avoid getting CORS errors when fetching data from an API.

Question 11

JS

1. What is the difference between synchronous and asynchronous programming and how does async and await fit into this?

REACT

2. What is the purpose of lifting state up in React?
3. Show how you would lift state up in a React application.

Security/Routing/Styling

4. Show a few examples of responsive design.

Question 12

ACCEPTED

JS

1. Explain the concept of promises in JavaScript. How do they differ from callbacks?

APPROVED

REACT

2. Describe how conditional rendering is achieved in React.
3. Provide an example of using the ternary operator for conditional rendering.

APPROVED

Security/Routing/Styling

4. Describe the purpose of `flexbox` and `grid` in css, and show some examples of what can be achieved by applying them.

APPROVED

Question 13

ACCEPTED

JS

1. What are higher-order functions in JavaScript? Give an example.

REACT

2. Describe the purpose of props in React.
3. Explain the role of state in a React component.

Security/Routing/Styling

4. Describe and show how we log in a user in React with JWT.