ReactJS HOL - Objective Q&A Ordered from 1 to 19

# ReactJS Hands-On Labs - Objective Questions and Answers

ReactJS HOL 1 - Objectives and Answers

### Define SPA and its benefits

SPA stands for Single Page Application. It loads a single HTML page and dynamically updates it as the user interacts with the app. Benefits include faster navigation, reduced server load, and a more seamless user experience.

### Define React and identify its working

React is a JavaScript library for building user interfaces, particularly single-page applications. It works using a virtual DOM to efficiently update and render components.

### Identify the differences between SPA and MPA

SPA loads a single HTML page and updates content dynamically, whereas MPA loads a new HTML page from the server for every new request. SPAs are faster, MPAs are better for SEO.

### Explain Pros & Cons of Single-Page Application

Pros: Fast navigation, reduced server requests, better user experience. Cons: Poor SEO, complex initial setup, and browser history management issues.

### Explain about React

React is a component-based front-end library developed by Facebook. It helps build reusable UI components and manages the view layer efficiently.

### Define virtual DOM

Virtual DOM is an in-memory representation of the real DOM elements. React updates the virtual DOM first, compares it with the previous version, and updates only the changed parts in the real DOM.

### Explain Features of React

Key features include: JSX syntax, component-based structure, unidirectional data flow, virtual DOM, lifecycle methods, and hooks for state and side-effect management.

## ReactJS HOL 2 - Objectives and Answers

### Explain React components

React components are independent, reusable pieces of UI in a React application.

### Identify the differences between components and JavaScript functions

Components return JSX and manage their own state or lifecycle, while JavaScript functions are regular logic structures without UI rendering capability.

### Identify the types of components

Two main types: Class Components and Functional Components.

### Explain class component

Class components are ES6 classes that extend React.Component and contain a render() method.

### Explain function component

Function components are simple functions that return JSX. They can use hooks for state and lifecycle management.

### Define component constructor

Constructor is a method used in class components to initialize state and bind methods.

### Define render() function

The render() function returns the JSX that defines the UI structure of the component.

## ReactJS HOL 3 - Objectives and Answers

### Explain React components

React components are building blocks of a React application that encapsulate logic and UI.

### Identify the differences between components and JavaScript functions

Components return UI (JSX) and manage lifecycle; JavaScript functions perform logic but don't return UI.

### Identify the types of components

Class components and Function components.

### Explain class component

A class-based React component that manages its own state and lifecycle.

### Explain function component

A simpler component defined as a JavaScript function, used mainly for presenting UI.

### Define component constructor

Used in class components to set up initial state and bind methods.

### Define render() function

A method in class components that returns JSX to render the UI.

## ReactJS HOL 4 - Objectives and Answers

### Explain the need and Benefits of component life cycle

Component lifecycle allows developers to run code at specific points (e.g., mounting, updating, unmounting). Benefits include fine-grained control over component behavior.

### Identify various life cycle hook methods

Examples include: constructor(), render(), componentDidMount(), componentDidUpdate(), componentWillUnmount(), and componentDidCatch().

### List the sequence of steps in rendering a component

1. Constructor initialization, 2. Render method execution, 3. componentDidMount() is called after component is added to DOM.

Answers to Objective Questions – ReactJS HOL

# 5. ReactJS-HOL.docx

* Q: What is the purpose of CSS Module in React?

1. A: To scope CSS locally to components

* Q: Which property is used to apply inline styles in React?

1. A: `style`

* Q: How do you apply a CSS Module class to a JSX element?

1. A: Using `className={styles.className}`

# 6. ReactJS-HOL.docx

* Q: Which package needs to be installed to use React Router?

1. A: `react-router-dom`

* Q: Which component is used to define individual route paths?

1. A: `Route`

* Q: Which hook is used to extract dynamic parameters from the URL?

1. A: `useParams`

# 7. ReactJS-HOL.docx

* Q: What are Props in React?

1. A: Props are used to pass data from one component to another.

* Q: What is the difference between State and Props?

1. A: State is mutable and managed within the component; Props are immutable and passed from parent to child.

* Q: Which function is used to render a React element into the DOM?

1. A: `ReactDOM.render()`

# 8. ReactJS-HOL.docx

* Q: What is React State?

1. A: A built-in object to contain data or information about the component.

* Q: How do you initialize State in a class component?

1. A: Using `this.state` inside the constructor.

* Q: How do you update State in React?

1. A: Using `this.setState()` method.

# 9. ReactJS-HOL.docx

* Q: What does the `let` keyword do in ES6?

1. A: It declares a block-scoped variable.

* Q: What is the main difference between `var` and `let`?

1. A: `var` is function-scoped, while `let` is block-scoped.

* Q: What are ES6 arrow functions?

1. A: A shorter syntax for writing functions using `=>`.

* Q: What is the use of `map()` in ES6?

1. A: It is used to iterate over an array and transform elements.

# 10. ReactJS-HOL.docx

* Q: What is JSX?

1. A: A syntax extension for JavaScript used with React to describe UI elements.

* Q: How do you render JSX to the DOM?

1. A: Using `ReactDOM.render()`.

* Q: How do you apply inline CSS in JSX?

1. A: Using `style={{ property: 'value' }}` syntax.

* Q: How can JavaScript expressions be embedded in JSX?

1. A: By enclosing them in curly braces `{}`.

Answers to Objective Questions – ReactJS HOL (All Docs)

# 11. ReactJS-HOL.docx

* Q: What is a Synthetic Event in React?

1. A: A cross-browser wrapper around the browser’s native event.

* Q: What is the purpose of 'this' keyword in event handlers?

1. A: To refer to the current class/component instance.

* Q: Which method is used to bind a function with arguments in JSX?

1. A: Using arrow functions or .bind(this, args).

# 12. ReactJS-HOL.docx

* Q: What is Conditional Rendering in React?

1. A: Rendering components or elements based on conditions.

* Q: How can we prevent a component from rendering?

1. A: By returning null in the render method or using conditions.

* Q: What are Element Variables in React?

1. A: They store JSX to conditionally render parts of the UI.

# 13. ReactJS-HOL.docx

* Q: What is the use of keys in React lists?

1. A: They help React identify which items have changed, are added, or removed.

* Q: Which method is commonly used for rendering lists in React?

1. A: The map() function.

* Q: Why should keys be given to list items?

1. A: To provide a stable identity and enhance performance.

# 14. ReactJS-HOL.docx

* Q: What is React Context API?

1. A: A way to pass data through the component tree without passing props manually at every level.

* Q: Which method is used to create a Context in React?

1. A: `createContext()`

* Q: Which hook is used to access Context in functional components?

1. A: `useContext()`

Objective Questions and Answers - ReactJS Hands-On Labs

# Lab: 15. ReactJS-HOL.docx

## What is the purpose of the ComplaintRegister component in the ticketraisingapp?

To provide a form that allows users to enter an employee name and complaint, and submit it to generate a reference number.

## What input controls are used in the ComplaintRegister component?

Textbox for employee name and textarea for the complaint.

## Which event is used to handle form submission in this lab?

The `handleSubmit` event.

# Lab: 16. ReactJS-HOL.docx

## What are the validation requirements for the register.js form in mailregisterapp?

- Name: At least 5 characters.

- Email: Must contain '@' and '.'.

- Password: At least 8 characters.

## Which events are used to implement form validation?

`eventhandle` and `eventsubmit`.

# Lab: 17. ReactJS-HOL.docx

## What is the purpose of the Getuser component in fetchuserapp?

To retrieve and display user details (title, firstname, and image) from https://api.randomuser.me/ using the fetch method.

## In which lifecycle method is the API call made?

`componentDidMount()`.

# Lab: 18. ReactJS-HOL.docx

## What is the goal of the unit tests in CohortDetails.test.js?

To ensure the CohortDetails component functions correctly through various unit tests like checking component creation, prop initialization, content rendering, and snapshot consistency.

## Which tools are used for testing in this lab?

Jest and Enzyme.

## List the unit tests required for the CohortDetails component.

- should create the component

- should initialize the props

- should display cohort code in h3

- should always render same html (snapshot test)

# Lab: 19. ReactJS-HOL.docx

## What is the purpose of the GitClient component in gitclientapp?

To fetch and display a list of repository names for a given GitHub user using the axios library.

## Which library is used to make API calls in this app?

axios.

## What does the GitClient.test.js file test?

It unit tests the getRepositories method of GitClient by mocking axios to return dummy data.

## What is the test case name used in GitClient.test.js?

"should return repository names for techiesyed"