MES's Abasaheb Garware College, Pune

M.Sc. (Computer Science) – II

CS-604-MJP Lab course based on CS-602 and CS-603

Student Name: **Roll No:**

Full Stack Development- II Practical Assignment Questions

Sr. No	Assignment	Completion Date	Marks (out of 5)	Signature
1	1.1 Create a basic React application that displays your name, a short bio, and an image. 1.2 Design a functional component to display a list of 5 favourite movies using JSX. 1.3 Demonstrate the concept of virtual DOM by comparing traditional DOM vs React rendering through a counter example. 1.4 Create reusable components like Header, Footer, and Card, and use them in a homepage layout. 1.5 5. Build a counter app using useState to increment and decrement a number.			
2	2.1 Create a functional component using useEffect() that fetches and displays data from an API (e.g., users list). 2.2 Demonstrate the use of useReducer() hook by building a to-do list app with add/delete functionality. 2.3 Create a custom hook to manage form input fields with validation (e.g., email or password). 2.4 Build a theme toggler app using useContext() hook to switch between dark and light modes. 2.5 Create a login form with event handlers for input and submit events. Display the entered values in the console.			

3	3.1 Demonstrate **synthetic events** by creating a button that logs click and double-click events differently.	
	3.2 Create a multi-page React app using **react-router-dom** with Home, About, and Contact pages.	
	3.3 Pass parameters through routes and display the dynamic data (e.g., /user/:id should show user details).	
	3.4 Create a protected route that only shows a page if the user is authenticated (mock authentication).	
	3.5 Set up Redux in a React app and create a simple counter using actions and reducers.	
4	4.1 Build a **shopping cart app** where Redux manages the state of cart items **(add, remove, quantity).**	
	4.2 Design a **login system** with mock authentication using hardcoded user data and simulate token-based login using **JWT** (can be mocked).	
	4.3 Build a **notes management app** using Redux Toolkit with **createSlice() to manage state**.	
	4.4 Use RTK Query to fetch posts from a fake API (like JSON Placeholder) and display them with **loading/error states**.	
	4.5 Demonstrate the migration to Redux Toolkit by converting a **traditional Redux app** into one using **Redux Toolkit** and compare both.	
5	**5.1** Create React Application to take input from the user (number, string). Check whether the **number is even or odd** and also check whether the string is **palindrome or not.** Display appropriate messages to the user.	
	5.2 Create a react application to create a **Calculator.**	

	5.3 Create a react application which contains a toggle button. When a button is clicked by the user, button text should toggle between ON and OFF and background colour of text should also get changed, visually reflecting the state. 5.4 Create a react application to check whether a number is valid or not and also calculate the sum of the digit of the number entered by the user. 5.5 Create React Application which will perform string operations such as Uppercase, Lowercase, Length of String, Reverse of String.				
	Total				

CERTIFICATE

This is to certify that Mr./Ms. _____

has successfully completed M.Sc. (Computer Science) – II, CS-604-MJP Lab course based on CS-602 and CS-603 Sem III in Year 2025-26 and his/her seat no is _____.