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Daffodil International University
Faculty of Science & Information Technology
Department of Software Engineering
Final Examination, Summer 2026
Course Code: SE321; Course Title: Software Engineering Web Application
Sections & Teachers: 42 (A,B,C - SBA), (D,E,J - MRN), (F,G - SSA), (H,I - SSR)

Time: 2:00 Hrs **Marks: 40**

Answer ALL Questions

[The figures in the right margin indicate the full marks and corresponding course outcomes. All portions of each question must be answered sequentially.]

1.	*a)*	**Examine** how React.js enhances the front-end experience of a website compared to a front-end developed using basic HTML, CSS, and JavaScript. Discuss how React.js concepts contribute in enhancing the front-end experience of a website	**[Marks-4]**	**CLO-2** *Level-3*

	b)	`<!DOCTYPE html>`
		`<html lang="en">`
		`<head>`
		`  <title>Form Submission Event</title>`
		`</head>`
		`<body>`
		`  <form id="registrationForm">`
		`  <label for="name">Name:</label>`
		`  <input type="text" id="name">`
		`  <label for="email">Email:</label>`
		`  <input type="email" id="email">`
		`  <button type="submit">Register</button>`
		`  </form>`
		`  <p id="status"></p>`
		`  <script>`
		`  //Write the JS code here`
		`  </script>`
		`</body>`
		`</html>`
		Construct a JavaScript function that attaches a submission event listener to the form with the ID `registrationForm`. When the user submits the form:
		I. Check whether both the name and email fields contain values.
		II. If both fields are completed, display the message **"Registration submitted successfully!"** inside the paragraph.
		III. If any field is empty, display the message **"Please complete all required fields."** inside the paragraph.
			[Marks-6]	**CLO-2** *Level-3*

2.	*a)*	**Develop** a React application using a maximum of two components, including the `App` component. Use the `useState` hook to store whether course registration is open or closed, and provide a button to change the	**[Marks-10]**	**CLO-3** *Level-6*

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		registration status. Apply conditional rendering to display **"Course registration is open."** when registration is active and **"Course registration is currently closed."** when registration is inactive. The button text must also change between **"Close Registration"** and **"Open Registration"** according to the current registration status. Write the **App.jsx** code for the above scenario.		
	b)	**Explain** how React components and state work together to build reusable and interactive user interfaces. In your answer, explain how a state change updates the displayed content without manually modifying the DOM.	**[Marks-5]**	**CLO-3** *Level-6*
3.	*a)*	A client sends a `GET /products` page request to an Express server running on port 3000. **Create** the request flow sequence of how the request passes through the back-end before a JSON response is returned to the client.	**[Marks-5]**	**CLO-4** *Level-6*
	b)	**Construct** a server.js for a university course portal. Create a `GET /courses` route that returns all courses as JSON and a `GET /courses/:id` route that returns a specific course based on its ID.	**[Marks-5]**	
	c)	**Construct** MySQL code to create a `students` table containing `id`, `name`, `email`, and `department`, where `id` is an auto-increment primary key and `email` is unique. Then write a `SELECT` query to display the names and emails of all students from the **SWE** department.	**[Marks-5]**	