



Model Question Paper

First Semester MCA Degree Examination, 2023-24

Web Technologies

Time: 3 Hours

Max. Marks: 100

*Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M: Marks, L: RBT (Revised Bloom's Taxonomy) level, C: Course outcomes.*

Module -1			M	L	C
Q1	a.	How do web browsers, web servers, MIME types, URLs, and HTTP interact to deliver the initial HTML content and subsequent data updates to the user?	10	L2	CO1
	b.	Construct a web page to style specific elements, like changing the appearance of all headings and adding a border to all image elements. With your code, show how would you craft CSS selectors to target these elements effectively?	10	L2	CO1
OR					
Q2	a.	Discuss the basic structure of a table in XHTML5, including rows and cells with a suitable example.	10	L2	CO1
	b.	Develop a code to display a visually appealing button with padding and a border. Explain how the CSS box model (content, padding, border, and margin) would be used to achieve this layout.	10	L2	CO1
Module- 2					
Q3	a.	Discuss the different ways to include JavaScript code in a HTML document?	10	L2	CO2
	b.	Develop a code to display a document page with the following fields Name (Text field), Phone number (text field), Email ID (text field), Submit (button) and validate them using regular expressions.	10	L2	CO2
OR					
Q4	a.	Discuss the differences between an <i>if</i> statement and an <i>if...else</i> statement. Illustrate with suitable examples.	10	L2	CO2
	b.	Implement an inline JavaScript function to calculate the sum of three numbers. Accept numbers from three different text boxes and display the sum in the fourth text box.	10	L2	CO2
Module – 3					
Q5	a.	Identify the services in AngularJS which promotes code reusability and separation of concerns. Provide a concrete example of a service that could be used across multiple controllers and show how services can interact with backend APIs.	10	L3	CO3
	b.	Develop a code to design a form in AngularJS to collect user registration details (name, email, password). How would you validate form input using built-in or custom validation directives to ensure user data meets specific criteria?	10	L3	CO3
OR					
Q6	a.	Make use of expressions within AngularJS templates which enables you to display dynamic data from the model and perform calculations within the view itself. Give an example scenario.	10	L3	CO3

	b.	<p>Assume you are applying for a research permit to study a specific animal population in a national park. The online application form is complex because it involves:</p> <ul style="list-style-type: none"> ○ Personal information and qualifications ○ Research details - aims, methodology, timeline ○ Animal welfare plan - how you'll ensure the animals' safety ○ Budget breakdown for your research ○ Letters of recommendation <p>Analyze the code on how you can leverage form validation to provide detailed error messages for invalid user input, guiding users towards correct data entry?</p>	10	L3	CO3
Module – 4					
Q7	a.	How does the full-stack MERN stack approach impact development efficiency and team structure compared to traditional separate back-end and front-end development silos?	10	L3	CO3
	b.	<p>Assume you are developing a real-time chat application with the following components:</p> <ul style="list-style-type: none"> ● ChatWindow: Displays messages, user list, and input field. ● Message: Represents an individual chat message. ● UserList: Displays a list of online users. ● InputField: Handles user input for sending messages. <p>Elaborate, how would you leverage React's component architecture and state management to handle dynamic updates and user interaction efficiently?</p>	10	L2	CO4
OR					
Q8	a.	Which MERN component is the most responsible one while performing data validation? Make use of different layers of the MERN application and perform validation with suitable example.	10	L3	CO3
	b.	To build a RESTful API for your MERN application, demonstrate with a suitable example on how you can use Express to define routes, handle incoming requests, and send responses back to the React frontend?	10	L2	CO4
Module – 5					
Q9	a.	Why is it important to validate props passed to React components? Illustrate how can you use tools like <i>prop-types</i> to ensure correct data types and prevent runtime errors?	10	L2	CO4
	b.	Let's assume you are developing a reusable product card component. How would you structure and compose it with other components like images, titles, and buttons, demonstrating code reusability?	10	L2	CO4
OR					
Q10	a.	You are now given a job to design a layout component with a header, content area, and footer. Discuss how you can leverage the concept of children to dynamically render content within the layout based on its usage context?	10	L2	CO4
	b.	Building a separate script for JSX compilation in larger React projects promotes efficient build performance, modularity, and customization, leading to a more maintainable and scalable codebase. Summarize and give your thoughts.	10	L2	CO4
