

CBCS SCHEME - Make-Up Exam

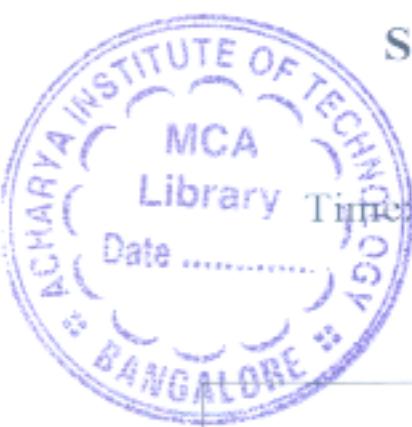
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BIS601

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2025

Full Stack Development



Time: 3 hrs.

Max. Marks: 100

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

| Module – 1 | | | | | |
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| | | M | L | C | |
| Q.1 | a. | Explain the different data types in JavaScript with examples. Why is JavaScript called a dynamically typed language? Write a JavaScript program to add two numbers. | 10 | L3 | CO1 |
| | b. | What are functions in JavaScript? Explain different ways to declare functions with examples. | 10 | L2 | CO1 |

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| | | 10 | L2 | CO1 | |
| Q.2 | a. | What are arrays in JavaScript? Explain how to declare, access, modify and iterate through arrays with suitable examples. Also, list and explain any four array methods. | 10 | L3 | CO1 |
| | b. | Define objects in JavaScript. List the different ways of creating objects in JS. Create a JavaScript object called "Car" with properties brand, model and year. Write JavaScript statements that : i) Accesses the model and year properties and prints them ii) Updates the year property iii) Adds a new property color iv) Deletes the brand property | 10 | L3 | CO1 |

Module – 2

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| | | 10 | L2 | CO1 | |
| Q.3 | a. | What is the Document Object Model (DOM) in JavaScript? Explain with suitable the different methods used to select HTML elements. | 10 | L3 | CO2 |
| | b. | Write a JS program to perform the following DOM operations on an unordered list. i) Add a new list item at the end of the list ii) Add a new list item at the beginning of the list Use appropriate DOM methods to create and insert new elements dynamically. Also write the required HTML code to create the unordered list with atleast 4 items. | 10 | L3 | CO2 |

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| | | 5 | L3 | CO2 | |
| Q.4 | a. | What is Event Binding in JavaScript? Differentiate between inline event handling and addEventListener() method with examples. | 5 | L3 | CO2 |
| | b. | Write HTML and JS code using addEventListener() to demonstrate handling the two types of events. i) When the button is clicked, display an alert with a message "Button clicked" ii) When the user interacts with the text input field (e.g, clicks or tabs into it) changes its background color | 5 | L3 | CO2 |

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| | c. | Differentiate between directly attaching events listeners to multiple child elements and using event delegation. List the benefits of using event delegation. | 10 | L3 | CO2 |
| Module – 3 | | | | | |
| Q.5 | a. | List and briefly explain any 3 properties and 2 methods specific to the <select> element in JavaScript. Also, write JS code to add a new item to a select box and remove an item from it using these methods. | 10 | L3 | CO3 |
| | b. | Describe the components of the MERN stack and explain how they work together to build full stack applications. | 5 | L2 | CO3 |
| | c. | Demonstrate how to create a basic “Hello world” severless web app using MERN stack. | 5 | L3 | CO3 |

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| Q.6 | a. | Illustrate how component composition is used in React to build the UI of the Issue Tracker applications. | 10 | L3 | CO3 |
| | b. | Explain how props and children can be used in React to pass data between components. Illustrate how it is applied in the Issue Tracker example. | 10 | L3 | CO3 |

Module – 4

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| Q.7 | a. | Explain how to add an issue interactively to a list when a button is clicked in a React application. | 5 | L3 | CO4 |
| | b. | Describe the role of this.props in accessing parent methods in child components. Provide an example of how it is used it call a parent method. | 10 | L2 | CO4 |
| | c. | Differentiate between state and props in React. | 5 | L2 | CO4 |

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| Q.8 | a. | Explain HTTP methods and how they correspond to CRUD operations in a REST API. Differentiate between idempotent and safe HTTP methods with examples. | 10 | L3 | CO4 |
| | b. | Explain the role of the request object and response object in express.js. List and describe atleast 5 important properties or methods of each them. | 10 | L2 | CO4 |

Module – 5

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| Q.9 | a. | Demonstrate how to Switch Databases. List database and collections, insert documents (including multiple at once) and query with find() and find()-pretty. | 10 | L3 | CO5 |
| | b. | Explain what a projection is in MongoDB queries. Give an example using find() that filters employees with age ≥ 44 and returns only their first name and age. | 4 | L3 | CO5 |
| | c. | Show with shell commands, how to update a single documents field (using \$set), perform an upsert and delete a document by its – id. | 6 | L3 | CO5 |

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| Q.10 | a. | Explain how to configure webpack to both transform JSX via Babel and bundle modulus. | 10 | L2 | CO5 |
| | b. | What is ESLint? How can it be configured in a project using the Airbnb rule set? Explain with relevant commands and .eslintrc configuration. | 10 | L2 | CO5 |

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