BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
(AUTONOMOUS)
I - M. Tech II-Semester Regular Examinations (BR23), July/Aug - 2025

MEAN STACK TECHNOLOGIES (M. TECH-CSE)

Time: 3 hours   Max. Marks: 75

Answer any Five Questions One Question for One UNIT
ALL the Question Carry Equal Marks

	UNIT-I	**Marks**	**CO**	**BL**
1.a)	Explain the improvements HTML5 introduced over its predecessors and discuss their impact on modern web development.	7M	CO1	BL2
b)	Analyse how the DOM represents an HTML or XML document and discuss how it enables dynamic web page manipulation.	8M	CO1	BL4
	OR			
2.a)	Compare and contrast the HTTP, FTP, and SMTP protocols in terms of their primary purposes and key features.	7M	CO1	BL2
b)	Discuss the security vulnerabilities in DNS and analyse measures to mitigate these risks	8M	CO1	BL4

	UNIT-II	**Marks**	**CO**	**BL**
3.a)	Analyse the differences between object literals and instances of object constructors in JavaScript, highlighting the use cases for each	7M	CO2	BL4
b)	Evaluate the process of form submission in AngularJS, focusing on the integration with backend services and handling of asynchronous operations.	8M	CO2	BL5
	OR			
4.a)	Discuss the differences between function declarations, function expressions, and arrow functions in JavaScript, and analyse their appropriate use cases	7M	CO2	BL4
b)	Illustrate the role of custom directives in AngularJS and analyse how they enhance the reusability and modularity of the codebase	8M	CO2	BL4

	UNIT-III	**Marks**	**CO**	**BL**
5.a)	Discuss the key advantages of using Node.js for server-side development and analyze how these advantages influence the choice of technology stack for web applications.	7M	CO3	BL4
b)	Compare the use of callbacks, promises, and async/await in Node.js for handling asynchronous operations, and analyse their impact	8M	CO3	BL4
	OR			
6.a)	Examine how the Express.js framework simplifies the development of web applications compared to using Node.js alone.	7M	CO3	BL4
b)	Discuss the best practices for error handling in Express.js applications and analyze how proper error management can improve application reliability and user experience.	8M	CO3	BL4

UNIT-IV

		Marks	CO	BL
7.a)	Compare different methods for setting up a React.js project (e.g., Create React App, custom webpack configuration) and their impact on development speed and flexibility	7M	CO4	BL4
b)	Analyse the rendering process of React components into the DOM and discuss the impact of re-rendering on application performance	8M	CO4	BL4

OR

		Marks	CO	BL
8.a)	Evaluate the best practices for organizing and managing files in a React.js project and their impact on project maintainability and scalability	7M	CO4	BL4
b)	Illustrate the use of children in React components and how they facilitate component composition and reus	8M	CO4	BL4

UNIT-V

		Marks	CO	BL
9.a)	Demonstrate how to perform a basic CRUD operation in MongoDB.	7M	CO5	BL2
b)	Provide an example of using the MongoDB aggregation framework to group and filter data.	8M	CO5	BL3

OR

		Marks	CO	BL
10.a)	Demonstrate how to implement basic security measures such as user authentication and role-based access control in MongoDB	7M	CO5	BL3
b)	Provide an example of a use case where MongoDB would be more suitable than a relational database.	8M	CO5	BL3

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