Code No: **R20A0516**

MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)
III B.Tech II Semester Supplementary Examinations, April 2025
Full Stack Development
(CSE, CSE-AIML & B.Tech-AIML)

Roll No

Time: 3 hours   **Max. Marks: 70**

Note: This question paper Consists of 5 Sections. Answer **FIVE** Questions, Choosing ONE Question from each SECTION and each Question carries 14 marks.

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			BCLL	CO(s)	Marks
		SECTION-I			
1	A	What does the acronym **HTML** stand for, and what is its primary purpose in web development?	L1	CO-I	[7M]
	B	Describe how the `<div>` and `<span>` tags differ in terms of their usage and presentation in HTML documents.	L2	CO-I	[7M]
		OR			
2	A	Analyze the structure of an HTML document. What is the role of the **DOCTYPE** declaration, and how does it influence the way browsers interpret the document?	L4	CO-I	[7M]
	B	Evaluate the effectiveness of using HTML5 features (like the `<video>` and `<audio>` tags) for modern web development. How do these elements improve user experience and content accessibility?	L5	CO-I	[7M]
		SECTION-II			
3	A	What is **JavaScript** and how does it differ from HTML and CSS?	L1	CO-II	[7M]
	B	What is the purpose of a **function** in JavaScript? How does a function help in organizing and reusing code?	L2	CO-II	[7M]
		OR			
4	A	Analyze the difference between **synchronous** and **asynchronous** JavaScript. How do JavaScript's event loop and callbacks work in handling asynchronous tasks?	L4	CO-II	[7M]
	B	Create a JavaScript function that takes an array of numbers and returns the sum of all even numbers in the array. Write the code for this function.	L6	CO-II	[7M]
		SECTION-III			
5	A	What is **React** and what problem does it solve in modern web development?	L1	CO-III	[7M]
	B	Explain the difference between **class components** and **functional components** in React. How do their uses and syntax differ?	L2	CO-III	[7M]
		OR			
6	A	Explain the role of **actions**, **reducers**, and the **store** in Redux. How do they work together to manage state in a React application?	L2	CO-III	[7M]

	B	Given a React application, how would you integrate **Redux** to manage the state of a list of users fetched from an API? Describe the actions and reducers you would use	L3	CO-III	[7M]

SECTION-IV

7	*A*	Explain the concept of **Object-Oriented Programming (OOP)** and how Java implements this paradigm. What are the four main principles of OOP?	L2	CO-IV	[7M]
	B	What is the difference between **instance variables** and **local variables** in Java?	L2	CO-IV	[7M]

OR

8	*A*	What are the roles of the **Model**, **View**, and **Controller** in the **MVC** architecture?	L1	CO-IV	[7M]
	B	Evaluate the benefits and drawbacks of using *Spring MVC* vs *Spring Boot* for building RESTful APIs. When would you choose one over the other?	L5	CO-IV	[7M]

SECTION-V

9	*A*	Explain the process of **normalization** in database design. Why is it important to remove redundancy and avoid anomalies?	L2	CO-V	[7M]
	B	Write an SQL query to find the total **salary** for each **department** in a table named **Employees** and sort the results in descending order of the total salary.	L3	CO-V	[7M]

OR

10	*A*	What are the *12 principles* of Agile development according to the *Agile Manifesto*?	L1	CO-V	[7M]
	B	What is the difference between **Agile** and **Waterfall** development methodologies? How does Agile promote adaptability?	L2	CO-V	[7M]

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