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Bengaluru

Mid Term Examinations - October 2026

Date: 07/10/2026 **Time:** 11:45 AM - 01:15 PM

Course Code: CSA4705 **Course Name:** Backend development with Node.js

Semester: Third Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	90	90

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Demonstrate how Node.js provides advantages over traditional client-side JavaScript	2	CO1	BT3
2	Demonstrate how a traditional server and a Node.js server handle client requests differently with respect to request handling, memory, and I/O operations. Give suitable examples.	2	CO1	BT3
3	Use NPM to install multiple packages required for a Node.js project. Write the command and illustrate with an example.	2	CO2	BT3

4	Analyze the program code and write the correct order of output
	
	console.log("Start");
	setTimeout(() => {
	console.log("Timer");
	}, 2000);
	console.log("End");
	
		2	CO2	BT4

5	Use `EventEmitter` in Node.js to create and handle an event. Demonstrate with a suitable example..	2	CO2	BT3

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Demonstrate the working of Node.js architecture with a suitable diagram. Explain how a client request is processed through the Node.js Server, Event Loop, Callback Queue, and Callback mechanism to generate a response.	10	CO1	BT3
7	Analyze the working of event listeners in Node.js. Write a Node.js program using the `EventEmitter` class to create an event, register a listener, and trigger the event	10	CO2	BT4

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Consider a Node.js project for managing simple student operations. a) Write the command to initialize the Node.js project and state its purpose. (2 Marks) b) Write a custom module `student.js` containing functions to calculate the total and average marks of a student. Export the functions. (4 Marks) c) Write `app.js` to import the custom module and display the total and average marks. (4 Marks)	10	CO1	BT3

9	Explain how the HTTP module in Node.js is used to create a server and handle client requests and responses. Illustrate the use of the request and response objects with a suitable Node.js program	10	CO2	BT3

PART D: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
10	Explain the different types of modules in Node.js and analyze their role in developing Node.js applications with suitable examples.	10	CO1	BT3
11	Explain the working of timer functions in Node.js. Illustrate the use of `setTimeout()`, `setInterval()`, `clearTimeout()`, and `clearInterval()` with suitable examples.	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	Create a Node.js Employee module using `employee.js` and `app.js`. 1. In `employee.js`, create an Employee object with: ◦ Employee ID ◦ Employee Name ◦ Department ◦ Salary 2. Create a function `displayEmployee()` to display the employee details. 3. Export the Employee module. 4. In `app.js`, import the Employee module and call `displayEmployee()` to display the details	10	CO1	BT3
13	Explain the different types of packages in Node.js. Illustrate the purpose and usage of built-in, custom, and third-party packages with suitable examples.	10	CO2	BT3