

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fifth Semester

Information Technology

IT3501- Full Stack Web Development

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Why is express considered an essential component in the full stack development process?	RE	1	2
2.	List the components of the MEAN stack.	RE	1	2
3.	Explain a simple HTTP server in Node.js.	UN	2	2
4.	How to connect a Node.js application to a MongoDB database using MongoDB's official driver or an ODM like Mongoose?	RE	2	2
5.	Outline the concept of a collection in MongoDB.	UN	3	2
6.	Explain the basic steps to create a user in MongoDB.	UN	3	2
7.	Model a basic angular expression to display the sum of two variables, a and b, in the HTML template.	AP	4	2
8.	Build an express route that responds with a 404 status and a custom message for any undefined route.	AP	4	2
9.	What is two-way data binding, and which directive enables it in angular?	RE	5	2
10.	Identify the command to install react router.	AP	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the MVC architecture in web development. Illustrate how the Model-View-Controller pattern helps in organizing code in a web application, with an example.	RE	1	13
	Or			
	b List and explain the steps involved in processing a user request in a web application from the frontend (browser) to the backend (server and database). How does the webserver interact with backend services?	RE	1	13
12.	a i Explain in detail how Node.js manages events and event-driven programming.	UN	2	8
	ii Summarize the concepts of events, listeners, and callbacks with code examples.	UN	2	5
	Or			
	b Explain how to manage Node.js packages using node package manager. Discuss the commands for installing, updating, and uninstalling packages.	UN	2	13

13.	a	Construct a MongoDB architecture that include explanations of collections, documents, BSON format, and sharding.	AP	3	13
		Or			
	b	Develop a simple application in Node.js that interacts with MongoDB with necessary code and functionality.	AP	3	13
14.	a	Examine and write the steps to create a basic express app, configure routes, and handle different HTTP methods using request and response objects.	AN	4	13
		Or			
	b	Discover how TypeScript enhances angular development, covering typing, interfaces, decorators, and classes with examples.	AN	4	13
15.	a	Analyze the roles of MongoDB, Express, React, and Node.js in the MERN stack and explain how they interact to form a full-stack application.	AN	5	13
		Or			
	b	Examine setting up a Webpack configuration file, including loaders, plugins, and handling JSX, CSS, and images.	AN	5	13

PART – C (Marks 1*15 = 15)

Q.No		Questions	BLT	CO	Marks
16.	a	Develop a scenario where you need to build a single-page application for managing a library's book inventory using angular for the frontend and express for the backend. Describe how you would structure your project to allow the angular frontend to interact with the express backend. Discuss the steps required to set up CORS, create HTTP requests in angular, and handle responses from express.	CR	4	15
		Or			
	b	Create a Node.js application that connects to MongoDB to manage a simple inventory system for a retail store. The application should include the following features: 1. Setting up the MongoDB environment 2. Database and collection management 3. Access control 4. CRUD operations with express	CR	5	15