ADITYA COLLEGE OF ENGINEERING & TECHNOLOGY (A)
M.Tech – II Semester End Examinations Regular (ACETR23) – JULY 2024

MEAN STACK TECHNOLOGIES
(Computer Science and Engineering)

Time: 3 hours   **Max. Marks: 75**

Answer ONE question from each unit
All Questions Carry Equal Marks
All parts of the questions must be answered at one place only

UNIT – I

1	a	Make use of different types of CSS styles to HTML elements with example programmes	L3	CO1	[8M]
	b	Explain the following protocols i) HTTP ii) SMTP	L2	CO1	[7M]

OR

2	a	What are the main features of HTML5	L2	CO1	[8M]
	b	With an example explain the anatomy of a web page.	L2	CO1	[7M]

UNIT – II

3	a	What are the differences between Java and JavaScript	L2	CO2	[8M]
	b	Utilize DTD and Schema to validate XML document.	L3	CO2	[7M]

OR

4	a	What is the 'this' keyword in JavaScript?	L2	CO2	[8M]
	b	Explain different types of objects available in java script.	L2	CO2	[7M]

UNIT – III

5	a	Develop single page application in Angular JS with example programmes.	L3	CO3	[8M]
	b	What is the role of a web framework in Node.js development? Briefly explain why Express.js is a popular choice for building web applications	L3	CO3	[7M]

OR

6	a	Make use of MVC architecture in Express JS to explain the usage with neat diagram.	L3	CO3	[8M]
	b	Explain about different modules available in Node JS?	L2	CO3	[7M]

UNIT – IV

7	a	Explain the concept of the Uniform Interface in RESTful web services. How does it contribute to the scalability of web applications?	L2	CO4	[8M]
	b	Discuss the importance of designing meaningful URIs in RESTful web services. Provide examples of good URI design and explain how they enhance the usability of APIs.	L2	CO4	[7M]

OR

8	a	Describe the role of Web Linking (Hypermedia) in RESTful APIs. How does it improve discoverability and navigability in client-server interactions?	L2	CO4	[8M]
	b	Make use of Restful API architecture to explain the usage with neat diagram.	L3	CO4	[7M]

(P.T.O)

UNIT – V

9	a	Compare MongoDB with traditional relational databases (SQL) in terms of data structure, querying mechanisms, and scalability. Discuss scenarios where MongoDB might be a better choice.	L2	CO5	[8M]
	b	Explain the key components of MongoDB architecture. How does BSON (Binary JSON) play a role in data storage within MongoDB?	L2	CO5	[7M]

OR

10	a	Describe some of the key features of MongoDB like scalability, flexibility, and indexing.	L2	CO5	[8M]
	b	Demonstrate the process of creating a new database and a collection within MongoDB. Briefly explain the functionalities of each command.	L2	CO5	[7M]

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UNIT – IV

7   a   Explain the process of working with files in a React.js application. How   L2   CO5   [8 M]
can files be imported and utilized within the project structure?

     b   Illustrate the concept of "children" in React components. How are   L2   CO5   [7 M]
children components passed and accessed within a parent component?

<center>OR</center>

8   a   Explain the concept of Web Linking in the context of RESTful APIs.   L5   CO5   [8 M]
How does it contribute to the discoverability of resources?

     b   What is the concept of the Virtual DOM in React.js? How does React   L2
leverage the Virtual DOM for efficient rendering of UI components?

UNIT – V

9   a   List the key features of MongoDB. Highlight how these features make   L4   CO
MongoDB suitable for modern web applications.

     b   Explain the process of deploying a MEAN stack (MongoDB, Express.js,   L5   CO6   [7 M]
Angular, Node.js) application on a cloud platform like AWS or Heroku.
Include details on environment setup, configuring the cloud service,
deploying the application, and managing the deployment.

<center>OR</center>

10   a   Explain the architecture of MongoDB. Include details on its components   L5   CO6   [8 M]
such as databases, collections, and documents, and discuss how data is
stored and accessed in MongoDB.

     b   Explain the steps involved in hosting a static website using a web hosting   L5   CO6   [7 M]
service. Discuss domain registration, DNS configuration, and uploading
website files to the hosting server.