



Anurag University

B Tech III Year I-Semester Regular & Supplementary Examinations, Oct/Nov-2023

**Course: Web Programming with MEAN
(Common to AI & AIML)**

Time: 3Hours

Max Marks: 60

Section –A (Short answer type questions)

- **Answer all questions:** (10 x 2 =20 Marks)
 1. State the difference between 2-tier and multi-tier Web application architectures.
 2. Define the key features of Node.JS
 3. State the role of controllers in the MEAN Stack based Web applications.
 4. What do you mean by Responsive Web design? Do Bootstrap framework supports Responsive Web design?
 5. How does Mongoose model the data?
 6. How do you delete documents in MongoDB?
 7. How to navigate between components in Angular?
 8. What is Route Guard? How can it be used to protect the Angular routes?
 9. State the difference between Authentication and Authorization in the context of Angular.
 10. What are the various authentication mechanisms that can be used in Angular applications, and what are the pros and cons of each?

Section—B (Essay answer type questions)

- **Answer all questions:** (5 x 8 =40 Marks)
 11. A) List out the major components of MEAN Stack and state the benefits of utilizing MEAN Stack for Web application developments.
OR
B) Enumerate the basic steps required to build an employee management application using MEAN Stack.
 12. A) Discuss in detail with an example, the steps involved to create a basic Express Web application.
OR
B) Explain with concrete example how to create a route module and use it in an Express application.
 13. A) Illustrate with suitable example to explain the major steps involved in creating an Express application connecting the MongoDB using Mongoose.
OR
B) Create an application with REST API to perform CRUD operations on MongoDB database.
 14. A) Explain the Architecture of Angular with a neat block diagram.
OR
B) Elaborate on the use of services in Angular for sharing data across multiple components with an example.
 15. A) Explain with an example application how do you create an Angular Authentication service.
OR
B) Provide an example application to elucidate how to implement a secure HTTP interceptor in Angular to add JWT to the request headers.