

PRAGATI ENGINEERING COLLEGE: SURAMPALEM
(AUTONOMOUS)
III B.Tech II Semester Supplementary Examinations, April - 2024
MEAN STACK DEVELOPMENT
(IT)

Time: 3 hours

Max. Marks: 70 M

Answer ONE Question from each Unit
All Questions Carry Equal Marks

| Q. No. | Questions | BTL | CO | Marks |
|-------------------|--|-----|-----|-------|
| UNIT – I | | | | |
| 1. | a) Describe the attributes of HTML elements and how they enhance web development. | K2 | CO1 | 7M |
| | b) Explain the concept of HTML injection and its potential risks. | K2 | CO1 | 7M |
| OR | | | | |
| 2. | a) Discuss the importance of HTML security and vulnerabilities such as HTML injection and clickjacking. Provide examples of these vulnerabilities and how they can be mitigated. | K3 | CO1 | 7M |
| | b) Explain the role and significance of metadata elements in HTML. Provide examples of commonly used metadata elements. | K3 | CO1 | 7M |
| UNIT – II | | | | |
| 3. | a) Explain the concept of operators in JavaScript and provide examples of different types of operators. | K2 | CO2 | 7M |
| | b) Discuss the process of working with classes in JavaScript. Explain how to create and inherit classes. | K2 | CO2 | 7M |
| OR | | | | |
| 4. | a) Explain the concept of conditional statements in JavaScript and provide examples of different types of conditional statements. | K2 | CO2 | 7M |
| | b) Explain the concept of events and event handlers in JavaScript. | K2 | CO2 | 7 M |
| UNIT – III | | | | |
| 5. | a) Explain why Node.js is popular for web development and mention some key features. | K2 | CO3 | 7M |
| | b) What is middleware in Express.js? How does it work? Explain with an example. | K3 | CO3 | 7M |
| OR | | | | |
| 6. | a) How can you connect to MongoDB with Mongoose in an Express.js application? Describe the necessary steps and code snippets. | K3 | CO3 | 7M |

| | | | | | |
|------------------|----|--|----|-----|----|
| | b) | What are validation types and defaults in Mongoose? How can they be used in defining models? | K2 | CO3 | 7M |
| UNIT – IV | | | | | |
| 7. | a) | How are function parameters and return types defined in TypeScript? Provide examples to illustrate different scenarios. | K3 | CO4 | 7M |
| | b) | What is JSON and how is it used in MongoDB? Explain with an example of storing and retrieving data in JSON format. | K2 | CO4 | 7M |
| OR | | | | | |
| 8. | a) | How can you extend interfaces in TypeScript? Explain with an example of inheriting properties from a parent interface. | K2 | CO4 | 7M |
| | b) | What are CRUD operations in MongoDB? Explain the concept of creating and deleting databases and collections in MongoDB. | K3 | CO4 | 7M |
| UNIT – V | | | | | |
| 9. | a) | What is Angular and what are its key features? Explain how Angular differs from other JavaScript frameworks. | K2 | CO5 | 7M |
| | b) | Describe the component lifecycle in Angular. Explain the different lifecycle hooks and their execution order. | K2 | CO5 | 7M |
| OR | | | | | |
| 10. | a) | Explain the concept of the Shadow DOM in Angular. How does it help in encapsulating component styles and behavior? | K2 | CO5 | 7M |
| | b) | What is property binding in Angular? How can it be used to bind component properties to HTML attributes? Provide examples. | K2 | CO5 | 7M |