

- (i) Write the parent component (app.ts) showing initialCount and [(count)] binding.
 - (ii) Write the child component (counter.ts) showing count display and update logic.
 - (iii) Briefly explain how data flows between parent and child components.
6. (a) How does MongoDB use dot notation to access array elements and embedded document fields? Explain with suitable examples. (7)
- (b) Describe the overall MongoDB architecture and explain the function of its core components, including shard servers, config servers, mongos router, replica sets, and the MongoDB engine. (8)
7. (a) Differentiate between RDBMS and MongoDB data models in terms of structure, schema, and data representation. (7)
- (b) Explain MongoDB CRUD (Create, Read, Update, and Delete) operations and describe the key constraints such as atomicity, filter syntax, and target scope. (8)

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3644

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Unique Paper Code : 6202452402

Name of the Paper : Full Stack Web Development I

Name of the Course : **B.Voc. Software Development**

Semester : IV

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. The paper has **two** sections. **Section A** is compulsory. Each question is of **5** marks.
3. Attempt any **four** questions from **Section B**. Each question is of **15** marks.

Section A

1. (a) What are the key features and benefits of jQuery? How does it differ from JavaScript? (5)
- (b) Explain the jQuery load () method with appropriate syntax and an example. (5)
- (c) What are Angular forms? Explain their different types in detail. (5)

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- (d) What are Angular life-cycle hooks? Explain `ngOnInit()` and `ngOnDestroy()`. (5)
- (e) What are MongoDB documents? Explain their structure with a suitable example. (5)
- (f) What are the common data types in MongoDB? Explain their significance and usage. (5)

Section B

2. (a) Explain the concept of Callback Function and Method Chaining in jQuery with suitable examples. (7)
- (b) Explain jQuery selectors with suitable examples, including any two examples each of basic selectors, attribute selectors, and position-based selectors (first and last). (8)
3. (a) Explain jQuery fading effects and describe the methods `fadeIn()`, `fadeOut()`, `fadeToggle()`, and `fadeTo()` with suitable examples. (7)
- (b) Describe the core building blocks of Angular applications, including components, modules, services, directives, and dependency injection. (8)
4. (a) Explain the structure of an Angular application created using `ng new`, and describe the purpose of `app.component.ts`, `app.component.html`, `app.component.css`, and `main.ts`. (7)

- (b) Explain how Angular enables data sharing from a child component to a parent component using the `@Output()` decorator and `EventEmitter`. Consider a child component that sends user input to the parent component. (8)
 - (i) Show how `@Output()` is declared using `EventEmitter<string>`.
 - (ii) Show a method in the child component that emits data.
 - (iii) Show the child component template with an input box and a button.
 - (iv) Show the parent component method that receives the data and displays it in the template.
- 5. (a) Describe the order of execution of Angular lifecycle hooks, starting from component creation up to content and view initialisation. Illustrate your answer with a properly labelled diagram. (7)
- (b) Explain how Angular implements two-way binding between a parent (`app.ts`) and child (`counter.ts`) component using `[(count)]`, where the parent sets the initial count value and the child updates and displays it. (8)