

[This question paper contains 8 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3519

J

Unique Paper Code : 6202452402

Name of the Paper : Full Stack Web Development-1

Name of the Course : **B.Voc. (H) 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.

P.T.O.

Section A

1. (a) What is jQuery chaining? Demonstrate with an example how multiple animations or effects can be combined efficiently.

(5)

(b) Explain core features of the Angular framework. How do they enhance front-end application development?

(5)

(c) What are Angular Directives? Differentiate between Structural and Attribute directives with examples.

(5)

(d) Explain the bootstrapping process in Angular applications. What role does main.ts play?

(5)

(e) Describe the key differences between MongoDB and a traditional relational database in terms of data storage and retrieval.

(5)

(f) Explain the concepts of embedded and normalized data modeling in MongoDB with suitable use cases.

(5)

Section B

2. (a) What is jQuery? Highlight its practical advantages for DOM manipulation and event handling

(7)

(b) Explain the working of .slideDown() and .slideUp() functions with sample use-cases.

(4)

P.T.O.

(c) Write a jQuery script where clicking a button toggles the visibility of a paragraph and changes its background color to yellow.

(4)

✱ (a) Explain the purpose of @Input and @Output decorators in Angular component interaction.

(6)

(b) Write Angular code to:

(i) Create a template driven form with fields for username and password.

(ii) Add required field and minlength validators.

(iii) Display error messages when validation fails.

(9)

4. ✓ (a) Describe the structure of a freshly generated Angular project using CLI. Explain the purpose of the following: main.ts, app.component.html, app.component.css, app.component.ts (8)

(b) Explain different types of data binding in Angular with suitable example. (7)

5. ✗ (a) Examine the following AngularJS code and answer the questions below:

```
<!DOCTYPE html>
<html>
<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js"></script>
<body>
```

```
<div ng-app="myApp" ng-controller="personCtrl">
```

```
First Name: <input type="text" ng-model="firstName"><br>
```

```
Last Name: <input type="text" ng-model="lastName"><br>
```

```
<br>
```

```
Full Name: {{fullName}}
```


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```

</div>

<script>
var app = angular.module('myApp', []);
app.controller('personCtrl', function($scope) {
    $scope.firstName = "John";
    $scope.lastName = "Doe";
    $scope.fullName = function() {
        return $scope.firstName + " " + $scope.lastName;
    };
});
</script>

</body>
</html>

```

- (i) Identify and explain the role of the AngularJS directive ng-controller used in this code.
- (ii) What will be displayed initially in the "Full Name" field when the page loads? Justify your answer.
- (iii) Suppose the user types Alice in the First Name field and Smith in the Last Name field.

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What will be the updated Full Name shown?
Explain how AngularJS achieves this behavior. (5)

(b) What are Angular animations? Describe any two animation triggers with sample code. (5)

(c) Explain various phases of Angular Component life cycle. (5)

6. (a) Describe three MongoDB tools used for database creation, monitoring, or 6 performance tracking. (6)

(b) What is the Aggregation Framework in MongoDB? Describe the aggregation expressions \$group, \$sum, \$push, \$sort with example. (9)



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✓ 7 (a) Write and explain the CRUD operations in MongoDB. Use realistic sample 7 collections (e.g., students, products) (7)

(b) Describe the architecture of MongoDB and its components. (8)