

Roll No.: _____

Amrita Vishwa Vidyapeetham, Coimbatore Campus

B.Tech Mid-Term Examinations – August 2025

Fifth Semester

**Computer Science and Engineering, Computer and Communication Engineering,
Electrical and Electrical Engineering**

23CSE461 Full Stack Frameworks

(Set-1)

Duration: Two hours

Maximum: 50 Marks

CO	Course Outcomes
CO01	Learn how to develop single page applications (SPAs) efficiently using front-end framework
CO02	Learn to use backend frameworks to develop web and mobile applications robustly.
CO03	Learn to build highly available and scalable internet applications using document databases.
CO04	Design and develop full stack web projects using front-end, back-end and database frameworks.

Answer All Questions

1. Design a calculator using **ReactJS** and perform the following operations as the user enters the value in the text box

[20 Marks] [CO1] [BTL 4]

- a) Write the code routine for the Addition, subtraction, multiplication, division operations
Evaluate the expression

$$\text{Result} = (a+b)/(a-b)*(a+b)$$

Where a is number entered in text box

and b is the number entered in textbox-15

[10 Marks]

- b) Have a button named **MoD_Sum_square** . On clicking the same it should sum the square of the digits of the number in the text box and display the sum

[5 Marks]

- c) Have a button named **Even_ODD** . On clicking the same it should check the number entered in text box and should say whether it is odd or even.

[5 Marks]

Question No.	Marks	Evaluation Rubrics
a	10	<p>Add/Sub/Multiply/Division with expression evaluation – 10 --- Result=(a+b)/(a-b)*(a+b)</p> <p style="text-align: center;">0/3/5/10</p> <p>0-Not done 3-The code has been written for some operations 5-The code has been written for all operations and not showing output 10-The code is working for all operations and expression is evaluated</p>
b	5	<p>MoD_Sum_square -5</p> <p style="text-align: center;">0/2/5</p> <p>0-Not done 2- The code has been written as per the logic not showing output 4-The code is working and showing the sum of square of digits of the number</p>
c	5	<p>Even_ODD-5</p> <p style="text-align: center;">0/2/5</p> <p>0-Not done 2- The code has been written as per the logic not showing output 5-The code is working and checking whether it is even or odd</p>

2.

[10 Marks] [CO2] [BTL 3]

a.Create a Database for storing BillDetails --- 2 Marks

b.

(i)create a MongoDB document with billno:B101,vendor:xyz,

date:'11-aug-2025', quantity:50

(ii)create a MongoDB document with billno:B101,vendor:xyz,

date:'12-aug-2025', quantity:150

(iii)create a MongoDB document with billno:B102,vendor:xy,

date:'13-aug-2025',quantity:50

----- 2 Marks

c.search for the document whose billno is B102 ----- 2 Marks

d.Update the document whose billno is B101 and date as '11-Aug-2025' as

billno:B101, vendor:xyz, date:'13-aug-2025', quantity:150 ----- 2 Marks

e.Remove the document whose Billno is B101 ----- 2 Marks

Part B

3. With a neat diagram explain the different category of components in ReactJS architecture

[5 Marks] [CO1] [BTL 2]

4.

[5 Marks] [CO1] [BTL 3]

Given below is the code for the component that takes three numbers and print their sum.

```
import React from 'react'
import PropTypes from 'prop-types'

class Total extends React.Component {
  render() {
    return <p>The total of {this.props.num1} and {this.props.num2} is
    {parseInt(this.props.num1) + parseInt(this.props.num2) + parseInt(this.props.num2)}</p>
  }
}

Sum.propTypes = {
  num1: PropTypes.number,
  num2: PropTypes.number,
  num3: PropTypes.number
}
export default Total
```

write code using render method that displays the sum on passing the three numbers .

5. With a example explain how the bind method can be used for binding the event handlers in ReactJS [5 Marks] [CO1] [BTL 2]
6. With a example explain how the state management can be done in ReactJS [5 Marks] [CO1] [BTL 2]

CO	Marks	BTL	Marks
CO01	40	BTL 1	
CO02	10	BTL 2	15
CO03		BTL 3	15
CO04		BTL 4	20
CO05		BTL 5	
CO06		BTL 6	