



# P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

**Seventh Semester, B.E. - Computer Science and Engineering**

**Semester End Examination; February - 2022**

**Full Stack Development with MERN**

Time: 3 hrs

Max. Marks: 100

### Course Outcomes

The Students will be able to:

CO1: Demonstrate basic concepts of react, node, express and mongodb technologies

CO2: Design front end application using React and Redux libraries

CO3: Develop interactive web applications on server side with NOSQL databases.

CO4: Build responsive web application communicating with RES API and managing data with NOSQL databases

CO5: Build an HTTP server using the core modules in Node.js

**Note:** I) PART - A is compulsory. Two marks for each question.

II) PART - B: Answer any **Two** sub questions (from a, b, c) for Maximum of **18 marks** from each unit.

Q. No.	Questions	Marks	BLs	COs	POs
<b>I : PART - A</b>		<b>10</b>			
I a.	List all the methods used in updating phase of Reacts Life Cycle.	2	L1	CO1	PO2
b.	Illustrate how to use state with example?	2	L4	CO2	PO2
c.	What is call back hell? How this problem can be solved?	2	L1	CO3	PO5
d.	Why Mongoose is used? How to setup Mongoose?	2	L2	CO4	PO5
e.	List all the data types used in Mongo DB.	2	L1	CO5	PO3
<b>II : PART - B</b>		<b>90</b>			
<b>UNIT - I</b>		<b>18</b>			
1 a.	What is MERN? Explain the necessity of MERN in detail.	9	L1,2	CO1	PO2
b.	Briefly explain the features of React.	9	L2	CO1	PO2
c.	What are the two ways of installing React? Demonstrate both the installation process.	9	L3	CO1	PO3
<b>UNIT - II</b>		<b>18</b>			
2 a.	Define React Redux. Explain;				
	i) Principles of React	9	L1,2	CO2	PO2
	ii) Functionalities of each component of Redux				
b.	What is the usage of action in React? Illustrate the usage of action creators with example in detail.	9	L1,2	CO2	PO3
c.	Explain the concept of combine Reducers with example.	9	L2	CO2	PO3
<b>UNIT - III</b>		<b>18</b>			
3 a.	Explain with a suitable example how sequential functionality is achieved using?				
	i) Promises	9	L2	CO3	PO2
	ii) Async-await				

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|---|---|----|-----|-----|
| b. Explain the different methods of handling exceptions in Node JS. | 9 | L2 | CO3 | PO2 |
| c. Explain the following file operations used in Node JS:           |   |    |     |     |
| i) Read   |   |    |     |     |
| ii) Write   | 9 | L2 | CO3 | PO2 |
| iii) Open   |   |    |     |     |
| iv) Delete  |   |    |     |     |

**UNIT - IV****18**

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|--|---|------|-----|-----|
| 4 a. Build API by taking an example of book database.                    | 9 | L3   | CO4 | PO5 |
| b. Explain the usage of Mongo DB in express routing with the operations. | 9 | L2   | CO4 | PO3 |
| c. What is pug? Explain the important features of pug in detail.         | 9 | L1,2 | CO4 | PO5 |

**UNIT - V****18**

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|---|---|----|-----|-----|
| 5 a. Demonstrate the installation process of mango DB database. | 9 | L2 | CO5 | PO5 |
| b. Explain in detail the operations with mongo database.        | 9 | L2 | CO5 | PO2 |
| c. Explain the process of scheme initialization in detail.      | 9 | L2 | CO5 | PO3 |

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