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April-May-2026

Total No. of Questions : 5]

SEAT No. :

PF-5663

[Total No. of Pages : 2

[6651] - 40
M.C.A. (Management)
MSD615MJ : MERN Stack Development
(2024 Pattern) (Semester - III)

Time : 2½ Hours] *[Max. Marks : 50*

Instructions to the candidates :

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*
3) *Draw diagram wherever necessary.*

Q1) Solve any Two : **[10]**

a) Demonstrate the problem of callback hell in Node.js with suitable example.

b) Interpret the purpose of the fs (File System) module in Node.Js. Write code to asynchronously read a file named data txt.

c) Illustrate the concept of event loop in Node.js with a suitable diagram.

Q2) Solve any Two : **[10]**

a) Apply query operators such as $ match, $ group and $ project to filter and transform demonstrate with suitable example.

b) Perform CRUD operations on "employees" collection write mongodb queries to

a) insert a new employee document.

b) update the salary of an employee with 40000/.

c) delete all employees who are from 'Pune'.

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c) Create a "products" collection and write queries to :

a) use $ push to add items to an array field

b) use $ pull to remove items from an array

c) use $ inc to increment a numeric field.

Q3) Solve any Two : **[10]**

a) How do you implement authentication in Express using JWT and passport.Js

b) Describe session management in Express. Js

c) Demonstrate REST API principals in the context of Express.js

Q4) Solve any One : **[10]**

a) Build a react component using JSX and demonstrate the use of props and state.

b) Apply unit testing with React testing library to test a components functionality.

Q5) Solve any One : **[10]**

a) Develop a secure user authentication (login window) using JWT in a MERN app including registration, login and login verification.

- Use mongoDB to store user data.
- Create server using node.js
- Design front end and backend by using Express and React.

b) Demonstrate the use of state management (by using use State and use Effect) in MERN applications. Assume suitable fields in Customer Database.

Use mongoDB to store data, Node.js to create server and Express. js and react.js for frontend and backend.