IMP TOPICS MERN

Note: These topics are only based on 2024 Mern End Sem paper.

IMPORTANT TOPICS LIST

UNIT 1: WEB DEVELOPMENT FUNDAMENTALS

- Fundamentals of Good Website Design (Navigation) [PYQ]
- Client-Server Architecture (General Concept) [PYQ]
- MERN Stack 3-Tier Architecture [PYQ]
- CSS Box Model [PYQ]
- JavaScript Closures [PYQ]
- JavaScript DOM: Accessing HTML Elements [PYQ]
- JavaScript `this` keyword [PYQ]
- JavaScript Event Handling in HTML [PYQ]
- ECMAScript (ES5 vs. ES6 key differences)

UNIT 2: REACTJS

- ReactJS: Key Features (Building Blocks - JSX, Components, Virtual DOM) [PYQ]
- Virtual DOM (vs. Shadow DOM concept) [PYQ]
- React Components (Functional vs. Class Components, Stateful vs. Stateless) [PYQ]
- React State and Props (Explanation, Differences, Example of State Update) [PYQ]
- React Hooks (`useState`, `useEffect` - Definition, Demonstration) [PYQ]
- React Router (Concept) [PYQ]
- Redux (Concept) [PYQ]
- Unit Testing in React (Concept) [PYQ]
- Lifecycle of Components (Core Methods: Mounting, Updating, Unmounting)

UNIT 3: NODE.JS AND EXPRESS.JS

- Node.js: Significance in Backend Development & Differences from Traditional Server-Side Tech [PYQ]
- Node.js Event Loop Mechanism & Asynchronous Operation Handling [PYQ]
- Node.js Callbacks & Callback Hell [PYQ]
- Node.js Streams [PYQ]
- Express.js: Concept of Middleware & Examples [PYQ]

- Express.js: Handling HTTP Requests & Responses [PYQ]

- Express.js Scaffolding (Express Generator) [PYQ]

- HTTP Methods (GET, POST, PUT, DELETE, PATCH with Express examples)

- Asynchronous Programming in Node.js (Promises, Async/Await)

UNIT 4: MONGODB

- MongoDB: Features & Differences from Relational Databases (SQL) [PYQ]

- MongoDB CRUD Operations (Add, Update, Delete with code examples) [PYQ]

- MongoDB Sharding Process & High Availability (Replica Sets) [PYQ]

- MongoDB Core Concepts: Document, Collection, Database [PYQ]

- Connecting MongoDB with Node.js (basic setup)