CDAC Mumbai
Web Programming Technologies

Total Marks: 15

Question Paper: Backend Integration for Dynamic Web Applications

Objective: Expand your *previously created Webistaan project* by adding backend functionality using Node.js, Express.js, and MySQL. Implement CRUD operations with a persistent database and create RESTful APIs to handle these operations seamlessly.

Requirements:

Part 1: Database Schema Design

1. Schema: Create a MySQL database with at least one table relevant to your Webistaan project theme (e.g., Products for an e-commerce site).
2. Fields: Define appropriate fields and relationships (e.g., id, name, price).

Part 2: API Development

1. **POST Route**: Develop a route to add a new record (e.g., /api/products).
2. **GET Route**: Implement a route to fetch records, including a basic filtering option based on one field (e.g., filter by category).
3. **PUT Route**: Add a route to update an existing record by ID.
4. **DELETE Route**: Create a route to delete a record by ID.

Expected Outcome: Each API should execute the intended CRUD operation with error handling.

Part 3: Front-End and Back-End Data Flow

1. **Form Handling**: Update forms on your Webistaan site to use AJAX or fetch requests to connect with your backend API.
2. **Dynamic Display**: Render data received from the GET endpoint in relevant sections of your Webistaan site (e.g., show a list of products on the products page).
3. **Error Handling**: Implement validation on the front end and error handling on the back end to give users clear feedback in case of issues.

Note: All requirements should be completed within your *existing Webistaan project* to create a fully dynamic, data-driven experience.