**Functional Requirements Document (FRD)**

**1. Project Overview**

**Project Name:** E-Commerce Platform  
**Document Version:** 1.0  
**Prepared By:** [Your Name]  
**Date:** [13/02/2025]  
**Reviewed By:** [Reviewer Name]

**2. Purpose and Scope**

* **Objective:** Develop an online e-commerce platform allowing customers to browse, search, and purchase products securely.
* **Scope:**
  + Users can register, log in, browse products, add to cart, and complete purchases.
  + Admins can manage product listings, track orders, and generate reports.
  + Secure payment gateway integration.
  + Mobile-responsive design.
  + Support for multiple payment methods, including credit/debit cards, UPI, and wallets.
  + Real-time order tracking with estimated delivery times.
  + User account management including profile updates, order history, and wish lists.

**3. Actors and User Roles**

* **Customer:** Browses products, adds to cart, places orders, tracks shipments, leaves reviews.
* **Admin:** Manages inventory, product listings, orders, and generates sales reports.
* **Seller:** Adds and manages their product listings, tracks sales, processes orders.
* **Delivery Partner:** Updates order delivery status and handles shipping logistics.
* **System:** Handles payments, notifications, and database management.

**4. Functional Requirements**

**FR1. User Registration & Authentication**

* **Description:** Users must create an account or log in.
* **Preconditions:** Valid email/phone number required.
* **Steps:**
  1. Enter email/phone and password.
  2. Verify via OTP/email confirmation.
  3. Log in and access dashboard.
  4. Enable multi-factor authentication (if configured).
* **Expected Outcome:** Secure authentication for users with personalized access.

**FR2. Product Browsing & Search**

* **Description:** Users can browse categories and search for products.
* **Preconditions:** Products must be available in the database.
* **Steps:**
  1. Enter search keyword or select category.
  2. View filtered product listings with sorting and filtering options.
  3. Click product for details, including price, reviews, and availability.
* **Expected Outcome:** Users can easily find relevant products with an intuitive interface.

**FR3. Shopping Cart & Checkout**

* **Description:** Users can add products to cart and proceed to checkout.
* **Preconditions:** User must be logged in.
* **Steps:**
  1. Add product to cart.
  2. Review cart, adjust quantity, apply promo codes.
  3. Select shipping address and preferred delivery slot.
  4. Select payment method and confirm order.
  5. Receive order confirmation with an estimated delivery date.
* **Expected Outcome:** Successful order placement with an accurate summary.

**FR4. Order Tracking & Notifications**

* **Description:** Users can track their orders.
* **Preconditions:** Order must be placed.
* **Steps:**
  1. View order history in the user dashboard.
  2. Check real-time order status, including processing, shipped, out for delivery, delivered.
  3. Receive email/SMS/push notifications for order updates.
* **Expected Outcome:** Users stay informed on their orders with real-time updates.

**FR5. Product Reviews & Ratings**

* **Description:** Customers can leave reviews and ratings for purchased products.
* **Preconditions:** Product must be delivered and user must be logged in.
* **Steps:**
  1. Navigate to order history and select the product.
  2. Provide a rating and write a review.
  3. Submit the review for moderation.
* **Expected Outcome:** Product ratings and reviews help other users make informed decisions.

**5. Use Cases**

*(To be added later)*

**6. Process Flow Diagram**

*[Insert workflow diagrams here]*

**7. Non-Functional Requirements**

* **Performance:** Load pages within 2 seconds.
* **Security:** SSL encryption, 2FA authentication, role-based access.
* **Scalability:** Support for 1M+ users, auto-scaling infrastructure.
* **Compliance:** GDPR, PCI DSS for secure payments.
* **Usability:** Mobile-friendly, accessible UI with multi-language support.

**8. Risks, Assumptions, and Dependencies**

**Risks:**

* Security threats such as data breaches and payment fraud.
* High server load during peak sales periods causing performance degradation.
* Third-party service downtime affecting payment processing and deliveries.

**Assumptions:**

* Users have stable internet access.
* Sellers provide accurate product details.
* Payment gateways and logistics services function without major interruptions.

**Dependencies:**

* **Payment Gateway Integration:** PayPal, Stripe, Razorpay, UPI.
* **Third-Party Logistics API:** FedEx, DHL, BlueDart for real-time shipping updates.
* **Email & Notification Services:** SendGrid, Twilio for alerts and promotions.

**9. Reference Documents**

* [Link to Business Requirements Document (BRD)]
* [Link to System Design Document]
* [Link to Compliance & Security Policies]

**10. Approval and Sign-Off**

* **Prepared By:** [Your Name] - **Date:** [13/02/2025]
* **Reviewed By:** [Reviewer Name] - **Date:** [13/02/2025]
* **Approved By:** [Approver Name] - **Date:** [13/02/2025]