Assignment – 3

Q1: Use Case Diagram [CO3]

Draw a **Use Case Diagram** for an **Online Banking System** with the following functionalities:

1. Users can **log in** to their accounts.
2. Users can **check their balance**.
3. Users can **transfer money** to another account.
4. Users can **pay bills**.
5. The system **sends transaction notifications**.
6. The **bank administrator** can **manage user accounts** and **approve transactions**.

📌 **Instructions:**

- Identify actors and use cases.
- Show relationships like **include** and **extend** where applicable.

Q2: Data Flow Diagram (DFD)[CO3]

Create a **Level 0 and Level 1 DFD** for an **E-commerce Website** where:

1. Customers **browse products** and **place orders**.
2. The system **processes payments**.
3. The **seller manages inventory**.
4. The **system sends order confirmations**.
5. The **delivery team handles shipping**.

📌 **Instructions:**

- Use appropriate symbols for **processes, data stores, external entities, and data flow**.
- Clearly label each level.

Q3: Sequence Diagram [CO3]

Design a **Sequence Diagram** for a **Food Ordering System** where:

1. A **customer places an order** via a mobile app.
2. The system **verifies the payment**.
3. The **restaurant prepares the food**.
4. The system **notifies the delivery agent**.
5. The food is **delivered to the customer**.

📌 **Instructions:**

- Show actors, objects, lifelines, and interactions.
- Use **arrows for messages** and indicate synchronous or asynchronous calls.

Q4: Component Diagram [CO3][CO6]

Develop a **Component Diagram** for a **Library Management System** where:

1. **Users search for books** and **borrow books**.
2. The **system manages book inventory**.
3. The **admin adds new books** to the database.
4. The **payment module handles fines for late returns**.
5. A **notification service sends alerts** for due dates.

📌 **Instructions:**

- Show major **components** (User Interface, Database, APIs, etc.).
- Indicate **dependencies and relationships**.