**Database Management Assignment:-**

**Section A: Introduction to SQL/NoSQL**

1. You are working on a project where you need to store large amounts of structured and semi-structured data. Which type of database (SQL or NoSQL) would you choose and why? Explain with a practical example.
2. A company wants to migrate from a relational database to a NoSQL database for better scalability. What challenges might they face? Discuss with an example.

**Section B: Advantages and Disadvantages of SQL/NoSQL**  
3. You are designing an e-commerce website's database. Explain the advantages and disadvantages of using SQL vs. NoSQL in this scenario.  
4. A banking system requires high consistency and ACID compliance. Which database system (SQL or NoSQL) would you recommend? Justify your answer with a real-world use case.

**Section C: Managing Databases**  
5. You are a database administrator and need to perform routine maintenance on a production database. Describe at least three essential database management tasks you would perform.  
6. An online streaming service needs to optimize its database performance. What strategies can be used for effective database management in this case?

**Section D: Identifying System Databases in SQL Server**  
7. List and describe the system databases in SQL Server. Provide one practical use case for each system database.  
8. You have accidentally deleted a user database in SQL Server. Which system database would you use to recover it, and how?

**Section E: Normalization Forms (1NF, 2NF, 3NF, BCNF)**  
9. Given the following unnormalized table:

| **OrderID** | **CustomerName** | **Product** | **Quantity** | **SupplierName** | **SupplierContact** |
| --- | --- | --- | --- | --- | --- |
| 101 | John Doe | Laptop | 1 | ABC Ltd. | 1234567890 |
| 102 | Jane Smith | Phone | 2 | XYZ Inc. | 9876543210 |

Convert it to 1NF, 2NF, and 3NF with proper explanations.

1. A company is facing redundancy issues in their database. How would applying BCNF help reduce redundancy? Explain with an example.

**End of Question Paper**