| S.NO | PRIMARY TOPICS | SUB TOPICS | POINTS TO BE COVERED | DURATION (THEORY) in MIN |
|---|---|---|---|---|
| 1 | Introduction | | | |
| | | What is database? | | 180 |
| | | Why we need database? | 1.Explain the general & business perspective use of database | |
| | | History of Database | 1. Data Modeling<br>2. File Systems<br>3. Hierarchical Databases<br>4. Network Databases<br>5. Relational Databases<br>6. Object Databases<br>7. Object Relational Databases | |
| | | Database concepts | 1. File Based Approach<br>2. Disadvantages of file based approach<br>3. Database Approach | |
| 2 | DBMS | | | |
| | | What is DBMS? | | 60 |
| | | Advantage in using DBMS | List down & Explain the advantages of DBMS | |
| | | Functions of DBMS | List down the main ten functions of DBMS & Explain | |
| | | ACID properties | Atomicity<br>Consistency<br>Isolation<br>Durability | 20 |
| 3 | Terminologies | | | |
| | | Entity | Define all the terminologies with an example | 20 |
| | | Attribute | | |
| | | Domain | | |
| | | Tuple | | |
| | | Degree | | |
| | | Cardinality | | |
| | | Relational Database | | |
| 4 | RDBMS | | | |
| | | What is RDBMS? | Difference between DBMS & RDBMS?<br>What is table ?<br>What is a field?<br>What is row and column ?<br>What is NULL value ? | 45 |
| | | Entity Relationship Modeling | What is a relation?<br>What is mean by relationship ?<br>Relationship types<br>What is primary key & foreign key ?<br>Constraints<br>Data Integrity | |
| | | EF codd rules | All rules | 90 |
| 5 | Normalization | | | |
| | | What is normalization ? | Drawback why normalization is required | 120 |
| | | List of Normalization forms | 1. UNF<br>2. 1NF<br>3. 2NF<br>4. 3NF<br>5. BCNF | |

| | | | | |
|---|---|---|---|---|
| **6** | **SQL** | | | |
| | | What is SQL? | SQL basics with joins, index and views | 90 |
| | | Data Types | | |
| | | DDL | Create, Alter, Rename, Truncate, Drop | |
| | | DML | Insert, Delete, Update, Select | |
| | | DCL | Grant, Revoke | |
| | | TCL | Commit, Rollback | |
| **7** | **General RDBMS Architecture** | | | |
| | | Database Layered Architecture | 1. Application Layer<br>2. Logical Layer<br>3. Physical Layer | 60 |
| | | Logical Modules of RDBMS | 1. Query Processing<br>2. Transaction Management<br>3. Recovery Management<br>4. Storage Management | |
| **8** | **Different DBMS Products** | | | |
| | | MSSQL | | 30 |
| | | Ingres | | |
| | | Oracle | | |
| | | MySQL | | |
| | | NoSQL | | |