MID Exam Syllabus(DBMS) (60%)

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| **Sr.** | **Topic** | **Weightage** | **Teaching Hrs.** |
| 1 | **Database system architecture and Data models**:  **Database system architecture**: Data Abstraction, Data Independence, Data Definition Language (DDL), Data Manipulation Language (DML).  **Data models:** Entity-relationship model, network model, relational and object oriented data models, integrity constraints, data manipulation operations. | 15% | 7 |
| 2 | **Relational query languages, Relational database design and Query processing and optimization**:  **Relational query languages**: Relational algebra, Tuple and domain relational calculus, SQL3, DDL and DML constructs, Open source and Commercial DBMS -MYSQL, ORACLE, DB2, SQL server  **Relational database design:** Domain and data dependency, Armstrong's axioms, Normal forms, Dependency preservation, Lossless design.  **Query processing and optimization**: Evaluation of relational algebra expressions, Query equivalence, Join strategies, Query optimization algorithms. | 30% | 14 |
| 3 | **Storage strategies**: Indices, B-trees, hashing. | 10% | 5 |
| 4 | **SQL Concepts**:  Basics of SQL, DDL,DML,DCL, structure creation, alteration, defining constraints Primary key, foreign key, unique, not null | 5% | 2 |