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| **Module No.** | **Subtitle of the Module** | **Topics in the module** | **No. of Lectures for the module** |
| **1.** | Refresher on databases and modelling | SQL: Data Definition and Data Manipulation, Relational Algebra, ER& EER Modelling | 2 |
| **2.** | Different Types of Data | Unstructured, Semi-Structured and Structured Data and their Storage Concerns | 2 |
| **3.** | Stored Procedures and Triggers | Blocks of code stored and executed on the server, creating Triggers. | 2 |
| **4.** | Transaction Management | Transactions Processing, ACID rules Concurrency Control, Recovery | 9 |
| **5.** | Query Optimization | Data storage, Query processing and Techniques of optimization | 4 |
| **6.** | Query Languages | Basics and Need of various Query Languages | 2 |
| **7.** | Database security and privacy | Database security and privacy, including anonymisation and release | 6 |
| **8.** | NoSQL Databases  (MongoDB) | NoSQL to relax ACID rules; consistency, availability, partition tolerance, creation of database, retrieval of data from database. | 8 |
| **9.** | XML Databases | XML, XPath and XQuery, XSLT, Integrating XML with Databases | 6 |