(3 Hours) **[Total Marks: 80]**

N.B.: (1) Question No. **1** is **compulsory.**
(2) Solve any **three** questions out of remaining **five.**
(3) Figures to **right** indicate **full** marks.
(4) Assume suitable **data** where **necessary.**

Q1. Attempt All questions **20**

(a) Discuss the various DDL Commands with examples
(b) Discuss select, where, order SQL Commands.
(c) Differentiate between ER and EER Diagram.
(d) What is Normalization in the database, Discuss the need of normalization in details?

Q2.

(a) What is JDBC, why one should use JDBC in Database discuss. **10**
(b) Discuss functions, procedure and cursor in SQL. **10**

Q3.

(a) Draw EER diagram for Hotel management System **10**
(b) Write relational algebra query for(Assume data wherever needed)
(i) Find names of students who live in city 'Bandra' from student table **03**
(ii) Find Roll_no of student whose name is 'Sachin' from student Table **03**
(iii) Find name of students whose marks are greater than 500. **04**

Q4.

(a) Explain different type of attributes with example in Entity Relational Model **10**
(b) Write SQL Syntax for (Assume one student enroll for only one course) **10**
(i) Create course table (course_id,name,staff_name,duration (in weeks),fees) .
(ii) Create student table (sid,name,phone_number,course_id) with course_id as foreign key.
(iii) Arrange courses in descending order of fees.
(iv) Find name of course student name 'John 'has enrolled for.
(v) List down names of all students whose course duration is less than 12 weeks

Q5.

(a) Explain various relational Algebra operations in details with examples. **10**
(b) Discuss how normalization process improves the database design in detail. **10**

Q6. Write short note on **20**

(a) Count and group by in SQL.
(b) Integrity Constraints.
(c) Primary key and Foreign key
(d) Strong entity set.