1. Attempt any three
   a. What is Data independence? Explain using three levels of Database Architecture.
   b. Draw an ERD for Library Information system.
   c. Discuss advantages of DBMS over file system and also explain characteristics of it.
   d. Explain projection in Relational Algebra.

2. Attempt any three
   a. Explain Transitive dependency using 3NF. And convert a database into 3NF.
   b. DISCUSS READ ONLY VIEWS with example.
   c. Explain conversion functions in SQL.
   d. What is Join? Explain INNER JOIN with example.
3 a What is primary key, Foreign key and UNIQUE? Explain.
b Explain ALTER TABLE statement in SQL.

4 Attempt any Three
a What is DEADLOCK? Explain deadlock prevention Techniques.
b What is serializability? Explain conflict serializability.
c Explain 2PL protocol.
d What is Recovery? Explain shadow paging.

5 Attempt any Three
a What is user defined exception? Explain.
b Write a PL/SQL program to display customer names and total no. of vowels in that name from customer table.
   Customer [cnum, cname, city, rating]
c Write a PL/SQL program to check weather given no. is prime or not.
d Explain parameterized cursor.

6 a Explain block structure of PL/SQL program.
b Explain iterative controls.