

(Based on remember)

**Answer any five Questions.**

1. (a) What is meant by Data Independence? State its importance in data technology.  
(b) What is schema and sub-schema? Why should a subschema be independent of schema?
2. (a) What do you understand by Data models? Which is the most preferred data model and why?  
(b) Distinguish between primary key and candidate key.
3. Draw an E-R diagram for a bank where a customer can open many accounts in many branches and an account can belong to more than one customer (joint account). Also reduce the above E-R diagram to table.
4. What do you understand by deadlock? How deadlock can be prevented?
5. What are the problems caused by data redundancies? Can data redundancies be completely removed when the database approach is used?
6. (a) List any five major function performed by a DBA?  
(b) What is functional and multi-valued dependency?
7. (a) What are the major components of SQL? Write syntax for creating a table, inserting values in the table and selecting. Use suitable examples.  
(b) Discuss the various types of "joins" supported in SQL.
8. Write short notes on any four:  
(i) PL/SQL (ii) DDL (iii) TRIGGERS (iv) DCL (v) DML  
(vi) Serializability