

# **DBMS IMPORTANT QUESTIONS:**

## **UNIT-I**

### **SHORT ANSWERS:**

1. Define Instances and schemas of database?
2. List the Database Applications?
3. List the disadvantages of file processing system?
4. Define a) Entity b) Attribute.
5. Discuss about Data Manipulation Language?
6. List the advantages of DBMS?
7. Discuss Data Independence?
8. Discuss about Data Definition Language?
9. Discuss about Data Manipulation Language?
10. Define a) Entity b) Relationship.

### **LONG ANSWERS:**

1. What are the application programs? Explain database access from application programs?
2. Define a) Entity b) Attribute c) Relationship with examples.
3. State and explain various features of E-R Models.
4. Discuss in detail Views and also Creating, Altering, Destroying of Views.
5. Name the main steps in the Database design. What is the goal of each step? In which steps is the ER model mainly used?
6. Explain about Integrity Constraints over relations in detail?
7. Explain about Database users and Administrators?
8. Explain about Logical database design?
9. Explain about Database Architecture?

## **UNIT-II**

### **SHORT ANSWERS:**

1. What is domain integrity? Give example.
2. Define SELECT operation in Relational algebra?
3. Discuss about trigger?
4. Define UNION operation in Relational algebra?
5. What is the use of group by clause?
6. List the aggregate functions supported by SQL?
7. Discuss the basic form of SQL query?
8. Define CROSS PRODUCT operation in Relational algebra?
9. Define JOIN operation in Relational algebra?

### **LONG ANSWERS:**

1. Explain about Aggregate operators in sql with examples?
2. Discuss correlated nested queries?
3. Write and explain a query to find the names of sailors who have reserved a red boat?
4. Explain Set operations of Relational Algebra with examples?
5. Define trigger and explain its three parts? Compare row level and statement level triggers?
6. Explain about Selection, Projection, Rename, division and Cartesian product operations in relational algebra?
7. Discuss about Domain Relational Calculus? Write and explain a query in DRC to Find the names of sailors who have reserved boat 103.
8. Write and Explain a Query for finding the names of sailors who have reserved a Red or a Green Boat. (in sql)
9. Write and explain a query for finding the colors of Boats reserved by 'Lubber'. (in sql)
10. Discuss about Tuple Relational Calculus? Write and explain a query in TRC to Find the names of sailors who have reserved boat 103.

## UNIT-III

### SHORT ANSWERS:

1. Demonstrate transitive dependency? Give an example?
2. Define BCNF?
3. Discuss Normalization?
4. Define Third Normal Form?
5. Explain about Loss less-join dependency?
6. Define Second Normal Form?
7. Define Armstrong axioms for FD's?
8. Define First Normal Form?
9. List different Normal Forms?

### LONG ANSWERS:

1. Determine the closer of the following set of functional dependencies for a relation scheme  $R(A,B,C,D,E,F,G,H)$ ,  $F=\{AB \rightarrow C, BD \rightarrow EF, AD \rightarrow G, A \rightarrow H\}$  List the candidate keys of R.
2. What is normalization? What are the conditions are required for a relation to be in 2NF, 3NF and BCNF explain with examples.
3. Determine the closer of the following set of functional dependencies for a relational scheme  $R(A,B,C,D,E)$ ,  $F=\{\underline{A} \rightarrow BC, CD \rightarrow E, B \rightarrow D, E \rightarrow A\}$ . List out the candidate keys of R.
4. What is meant by functional dependencies? Discuss about Third Normal Form?
5. Determine the closer of the following set of functional dependencies for a relational scheme  $R(A,B,C,D)$  and FDs  $\{AB \rightarrow C, C \rightarrow D, D \rightarrow A\}$ . List out the candidate keys of R.
6. Explain BCNF. What are the steps to be followed to convert a relation in 3NF to BCNF?
7. What is normalization? What are the conditions are required for a relation to be in 1NF, 2NF and 3NF explain with examples.
8. What is meant by closure of F? Where F is the set of functional dependencies. Explain computing  $F^+$  with suitable examples.

## **UNIT-IV**

### **SHORT ANSWERS:**

1. Define Two Phase Commit Protocol?
2. Explain about multiple granularity?
3. List the properties of transaction?
4. Define a Transaction?
5. Discuss about View Serializability?
6. Explain about remote backup systems?
7. Explain about ACID properties?
8. Define a checkpoint?
9. Discuss about Conflict Serializability?

### **LONG ANSWERS:**

1. Explain in detail about the two-phase locking protocol?
2. Explain about Remote Backup Systems?
3. Explain in detail about Lock-Based Protocols?
4. Explain about Buffer Management?
5. Explain in detail about Validation-Based Protocols?
6. Explain in detail about Serializability?
7. Explain in detail about Timestamp-Based Protocols?
8. What is transaction? Explain the ACID Properties of transactions?

## **UNIT-V**

### **SHORT ANSWERS:**

1. Define ISAM?
2. What is an index? Give an example.
3. Discuss about primary indexes?
4. Discuss about Clustered indexes.
5. What is the main difference between ISAM and B+ tree indexes?
6. What is meant by secondary index?
7. Discuss about data on External storage?
8. Define B+ tree index file?

### **LONG ANSWERS:**

1. Explain insertion and search operation in B+ trees?
2. What are the indexed data structures? Explain in detail.
3. Compare I/O costs for all File Organizations?
4. Explain about Hash based Indexing and Tree based Indexing?
5. Explain insertion and deletion operation in B+ trees?
6. Explain B+ trees? Discuss about this Dynamic Index Structure?
7. Explain in detail about ISAM?
8. Explain deletion and search operation in B+ trees?