

MIT Arts, Commerce & Science College Alandi (D), Pune

Question Bank for BCA

Sub: FILE STRUCTURE AND DATABASE CONCEPTS

Chapter 1: File Structure and Organization

1. What is File? Explain file structure in details.
2. Define logical & physical files.
3. Explain field structure in brief.
4. Compare variable length record and fixed length record.
5. Discuss the advantages and disadvantages of using
 - a) Unordered file
 - b) Ordered file
 - c) Hash file with respect to file operations search, insert & delete.
6. Write short notes on sequential files
7. What are Hash files and explain?
8. What is file? Explain different operations performed on the file.
9. State difference in spanned and unspanned records.
10. Write short note on sorted or sequential file
11. Explain index file organization in brief.
12. State different types of indexes.

Chapter 2: Tree Structure Indexing

1. What is an index file? What is the relationship between this files and indexes?
2. What is a clustered index? How many clustered indexes can you build on a file? How many unclustered indexed can you build?
3. What are the advantages & disadvantages of index sequential files?
4. What are B+ trees? Give insertion & deletions in the same.
5. Write a note on B tree.
6. What is limit indexing? Explain?
7. Explain multilevel indexing in detail..
8. Explain the structure of index sequential files.
9. Explain B + tree deletion algorithm.

Chapter 3: Database Management System

1. What is DBMS?
2. What are the limitations of conventional file processing system?
3. What is the difference between the traditional file system & DBMS?
4. State and explain the advantages and disadvantages of DBMS
5. What is data abstraction? What are different levels of data abstraction?
6. What is data independence? What are its different types?
7. List and explain different types of database users?
8. What are functions performed by Database Administrator (DBA)?
9. Give the difference between logical & physical data independence?
10. Write a short note on
 - a. DDL
 - b. DML
 - c. DCL
 - d. TCL
11. Explain following terms,
 - a. Instance
 - b. Schema
 - c. DML Compiler
 - d. Data dictionary
 - e. Data independence
12. What capabilities a good DBMS should have? Explain any four of them in detail?
13. Explain different components of DBMS structure.

Chapter 4: Data Models

1. Explain different types of Data Models?
2. Explain relational data model with example.
3. Explain network data model with example.
4. Explain hierarchical data model with example.
5. Explain with suitable examples an entity and entity sets.
6. Explain types of entity with suitable examples.
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8. What is an attributes? Explain its types in detail.
9. Explain relationships & relationship sets with example.
10. Write a short note on ER diagrams.
11. Explain the difference between primary key & foreign key.
12. Explain following terms
 - a. Primary key
 - b. Super key
 - c. Candidate Key
 - d. Foreign key
 - e. Composite key
13. State different types of relationship can exist between entity sets in an E – R Model.
14. What is generalization? Explain with examples.
15. What is specialization? Explain with examples.

16. Draw an E-R diagram for College admission system.
17. Draw an E-R diagram for Hospital system

Chapter 5: Relational Databases

1. What are the advantages & disadvantages of RDM?
2. What is a relation? Explain the degree of a relation with types.
3. Write short note on,
 - f. Entity
 - g. Domain
 - h. Tuple
4. What is key constraint? Explain types of constraints.
5. Explain conversion of weak entity set with example.
6. What is data integrity?
7. Enlist the steps followed for conversion of E R to Relational model.
8. Explain different data integrity types?
9. Explain the following operation from relational algebra.
 - a. Select
 - b. Project
 - c. Union
 - d. Rename
 - e. Division
 - f. Cartesian product
 - g. Difference
 - h. Intersection
 - i. Natural join
 - j. Outer join

Chapter 6: SQL (STRUCTURED QUERY LANGUAGE)

1. Write short note on SQL
2. What is generalized structure of SQL query (with from & where)
3. Explain the following operations with suitable example.
 - a. Set operations
 - b. Predicates & join
 - c. Set membership
 - d. Set comparison
 - e. Aggregate function
 - f. Ordering of Tuple
4. Explain the following DDL commands of SQL.
 - a. Create
 - b. Alter

- c. Drop
 - d. Truncate
5. Explain the following DML commands of SQL.
 - a. Insert
 - b. Delete
 - c. Update
6. How tables are created & maintained by using SQL.
7. Explain different aggregate functions with examples.
8. What are nested queries? How would you use the operators in, not in writing nested queries?
9. What is grouping? Discuss the interaction of the having & where clauses.
10. Explain different data types used in SQL?
11. What is the difference between where and having clause of selected statement.
12. What is the use of BETWEEN operators in SQL?

Chapter 7 : Relational Database Design

1. Define functional dependency.
2. Define functional dependency with example.
3. Explain different anomalies related with database design? Explain with example.
4. Specify needs of normalization.
5. Define normalization forms.
 - a. 1NF
 - b. 2NF
 - c. 3NF
 - d. BCNF
6. What is decomposition? What are the techniques of denormalization?
7. What is the purpose of Normalization?
8. Explain advantages and disadvantages of normalization.
9. What is integrity constraint?
10. What is unique constraint?