

BCS Computer Science Paper II
Subject – FOFD
Question Bank

Chapter 1: File Organization

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

Chapter 2: Indexed file organization

1. Explain index file organization in brief.
2. Define logical & physical files. Which are the special characters used in files.
3. Explain field structure in brief.
4. Explain different operation performed on file for locating and accessing file records.
5. Compare variable length record and fixed length record.
6. What is an index file? What is the relationship between this files and indexes?
7. What is a clustered index? How many clustered indexes can you build on a file?
How many unclustered indexed can you build?
8. State different types of indexes.
9. What are the advantages & disadvantages of index sequential files?
10. What are B+ trees? Give insertion & deletions in the same.
11. Write a note on B tree.
12. What is limit indexing? Explain?
13. Explain multilevel indexing in detail.
14. Explain insertion in index sequential file with example.
15. Explain the structure of index sequential files.
16. Explain B + tree deletion algorithm.

Chapter 3 : Introduction of DBMS

1. What is DBMS? What are the functions?
2. What are drawbacks of conventional file processing system?
3. What is the difference between the FPS & DBMS?
4. State the advantages 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. What are tasks or functions of DBS Manager?
8. What are different types of database users?
9. What are functions of DBA?
10. Give the difference between logical & physical data independence?
11. Explain following terms,
 - a. Instance
 - b. DML Compiler
 - c. Data dictionary
 - d. Data independence
12. "Controlling redundancy is the capability of good DBMS" Explain.
13. "DBA is responsible for organizing the system such that it should give best performance" Explain.
14. What capabilities a good DBMS should have? Explain any four of them in detail?
15. Explain different components of DBMS structure.

Chapter 4: Conceptual Design (E – R Model)

1. Define an entity and entity sets.
2. What is data dictionary? What is the information stored in the data dictionary.
3. Explain different types of Data Models?
4. Explain with suitable examples an entity and entity sets.
5. Explain relationships & relationship sets with example.
6. Write a short note on ER diagrams.
7. What is generalization? Explain with examples.
8. What is an attributes? Explain its types in detail.
9. What is specialization?
10. Differentiate between specialization & generalization.
11. Explain the difference between primary key & foreign key.
12. What are the candidate key & super key?
13. Explain types of entity with suitable examples.
14. State different types of relationship can exist between entity sets in an E – R Model.
15. What are the different categories of query languages?
16. Discuss in detail two of the most important types of constraints.

Chapter 5: Relational Data Model

1. Explain basic structure of SQL expression.
2. Explain relational data model with example.
3. Define functional dependency.
4. What are the advantages & disadvantages of RDM?
5. What is a relation? Explain the degree of a relation with types.
6. Write short note on,
 - a. Domain
 - b. Tuple
 - c. Super key
 - d. Candidate key
7. What is key constraint? Explain types of constraints.
8. Explain conversion of weak entity set with example.
9. What is data integrity?
10. Enlist the steps followed for conversion of E R to Relational model.
11. Explain different data integrity types?

Chapter 6: Relational Algebra

1. Write a short note on query language.
2. 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
3. What is join? Explain various forms of outer join with example.
4. What is union? How it is represented. Explain with the example.
5. What is select operation? How it is represented & Explain with an example.
6. Define left outer join.
7. Define Natural join with example.

Chapter 7: SQL

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 Tuples
4. Explain the following DML commands of SQL.
 - a. Insertion
 - b. Deletion
 - c. Updates
5. How tables are created & maintained by using SQL.
6. What are nested queries? How would you use the operators in, not in writing nested queries?
7. What is meant by an instance of the DBS & Schema?
8. What is grouping? Discuss the interaction of the having & where clauses.
9. What are null values? Can primary fields of a table contain null values?
10. Explain different data types used values?
11. What is the difference between where and having clause of selected statement.
12. Give generalized structure of SQL?
13. What is the use of BETWEEN operators in SQL?
14. Explain NULL and NOT NULL constraints of SQL?

Chapter 8 :Functions Dependency

1. Define functional dependency with example.
2. Specify needs of normalization.
3. Define normalization forms.
 - a. 2NF
 - b. 3NF
 - c. BCNF
4. What are the desirable properties of decomposition?
5. What are the consequences of bad database design? Explain with example.
6. Explain different anomalies related with normalization.
7. What is closure of set functional dependencies?
8. Write short note on trivial dependencies.
9. What is decomposition? What are the techniques of denormalization?
10. What is the purpose of Normalization?
11. Define closure of an attributes set with respect to a functional dependency set F.
12. What is integrity constraint?
13. What is unique constraint?