FOURTH SEMESTER B.Sc. DEGREE EXAMINATION, (2019, 2021, 2022, 2023, 2024)

B.Sc. Computer Science

DATABASE MANAGEMENT SYSTEM AND RDBMS

Time: Two and HalfHours

Maximum: 80 Marks

Part A (Answer all questions. Each question carries 1 mark.)

Core & Highly Repeated:

1. DDL stands for __. (3 times: 2019, 2021, 2023)

2. What is schema? (2 times: 2019, 2021)

3. Key to represent relationship between two tables is called __. (2 times: 2019, 2023)

4. What is a candidate key? (2 times: 2019, 2024)

Core Concepts (Less Repeated / Unique):

1. What is RDBMS? (1 time: 2021)

2. What is a Database System? (1 time: 2021)

3. What do you understand by Data Model? (1 time: 2021)

4. What is a Weak Entity? (1 time: 2021)

5. What is Relational Algebra? (1 time: 2021)

6. What do you mean by durability in DBMS? (1 time: 2021)

7. The letter D in ACID properties of a transaction represents ___. (1 time: 2022)

8. In an Entity-Relationship Diagram entity sets are represented by ___ symbol. (1 time: 2023)

9. The letter I in ACID properties of a transaction represents _____. (1 time: 2023)

10. ___ refers to the correctness and completeness of the data in a database. (1 time: 2023)

11. Define instances and schemas of database. (1 time: 2024)

12. What are domain constraints? (1 time: 2024)

13. Define views. (1 time: 2024)

14. What is the need for triggers? (1 time: 2024)

Other Important / Unique Questions:

1. ER model uses __ symbol to represent weak entity set. (1 time: 2019)

2. What is tuple? (1 time: 2019)

3. What is physical level? (1 time: 2019)

4. What is the purpose of commit? (1 time: 2019)

5. Which operator perform pattern matching? (1 time: 2019)

6. What is the use of GRANT? (1 time: 2019)

7. Which normal form is considered adequate for normal relational database design? (1 time: 2021)

8. __ is a virtual table, through which a selective portion of the data from one or more tables can be seen. (1 time: 2021)

9. In mathematical term Row is referred as _____ in database management systems. (1 time: 2022)

10. A ____ key is a primary key from one table that appears in another table to link the two together. (1 time: 2022)

11. If every non-key attribute is functionally dependent on the primary key, the relation will be in _____ normal form. (1 time: 2022)

12. BCNF stands for ____. (1 time: 2022)

13. In Database Management systems, FD stands for ____. (1 time: 2022)

14. __ is the language used by most of the Database Management Systems for helping their users to access data. (1 time: 2022)

15. In SQL, GRANT is an example of __ **type of statement. (1 time: 2022) 34._** is a special type of stored procedure that automatically runs when an event occurs in the database server. (1 time: 2022)

16. In SQL, __ command is used to provide system privileges, roles, and object privileges to users and roles. (1 time: 2022)

17. In the ___ normal form, a composite attribute is converted to individual attributes. (1 time: 2023)

18. In SQL, __ statement is used to recompile a view. (1 time: 2023)

19. In SQL, SELECT statement with _____ option is used to select only one copy of each set of duplicate rows in a relation. (1 time: 2023)

20. In SQL _____ statement is used for deleting table in RDBMS. (1 time: 2023)

21. A system is in a _____ state if there exists a set of transactions in which every transaction is waiting for another transaction in the set. (1 time: 2023)

22. List the advantages and applications of DBMS. (1 time: 2024)

23. What are the different Relationship Sets? Explain. (1 time: 2024)

24. Explain deadlock and advisory lock. (1 time: 2024)

25. What is mean by revoke? How it is applied? (1 time: 2024)

26. How to lock Table-level? (1 time: 2024)

27. How to use IN operator in SQL? Explain. (1 time: 2024)

Part B (Answer all questions. Each question carries 3 marks.)

Core & Highly Repeated:

1. What is stored procedure? (2 times: 2021, 2022)

2. What do you mean by database normalization? (2 times: 2022, 2023)

3. Explain ACID properties. (1 time: 2019)

4. Define Normalization. Explain 2NF. (1 time: 2021)

Core Concepts (Less Repeated / Unique):

1. Compare strong and weak entities. (1 time: 2019)

2. Define different DDL commands. (1 time: 2021)

3. What are the disadvantages of traditional file systems? (1 time: 2022)

4. Who is DBA? List any two responsibilities of a DBA. (1 time: 2023)

5. What is primary key? (1 time: 2023)

6. Explain about multi-valued dependencies. (1 time: 2024)

7. Explain about different types of integrity constraints. (1 time: 2024)

8.   What is Decomposition? What is the purpose of Decomposition in database? (1 time: 2024)

Other Important / Unique Questions:

1.   Explain outer join operation. (1 time: 2019)

2.   Define multivalued dependency. (1 time: 2019)

3.   What is the function of Grant and Revoke commands? (1 time: 2021)

4.   What is DCL command in SQL? Give one example. (1 time: 2022)

5.   What is EER? (1 time: 2023)

6.   What is Cursor? (1 time: 2023)

7.   Define second and fifth normal Form. (1 time: 2024)

8.   Which are the modes of lock? Explain. Explain two phase locking. (1 time: 2024)

9.   Write about triggers and its operations in detail. (1 time: 2024)

Part C (Answer any five questions. Each question carries 5 marks.)

Core & Highly Repeated:

1.   Explain different datatypes in SQL. (2 times: 2019, 2022)

2.   Explain the ACID properties of a transaction. (1 time: 2023)

Core Concepts (Less Repeated / Unique):

1.   Explain RDBMS. (1 time: 2019)

2.   Write a short note on database languages. (1 time: 2019)

3.   What is trigger? Explain how to create trigger. (1 time: 2019)

4.   Explain the functionalities of a database administrator. (1 time: 2022)

5.   What is data independence? Explain how it is achieved in Database Management Systems. (1 time: 2022)

6.   Give an account on relational algebraic operators. (1 time: 2022)

7.   Explain about functional and multivalued dependencies. (1 time: 2022)

8.   What are the different data models? Explain. (1 time: 2023)

9. Explain the differences between 3NF and BCNF. (1 time: 2023)

10. Describe the use of foreign key constraints with an example. (1 time: 2023)

11. What are Views in SQL? Explain with an example. (1 time: 2023)

12. What do you mean by Database Independence? Explain Three Schema Architecture. (1 time: 2024)

Other Important / Unique Questions:

1. Explain different loops in SQL. (1 time: 2019)

2. Write the difference between table level lock and row level lock. (1 time: 2019)

3. How to create, rename and destroy views? (1 time: 2019)

4. What are the string functions? (1 time: 2019)

5. Explain the function and syntax of any two DCL statements in SQL. (1 time: 2022)

6. Explain the differences between DROP TABLE and DROP VIEW statements in SQL. (1 time: 2022)

7. Why is concurrency control needed? Explain about uncommitted dependency anomalies. (1 time: 2022)

8. Explain Project and Union operations in Relational Algebra with example. (1 time: 2023)

9. Explain any two DCL statements with its syntax. (1 time: 2023)

10. List the different set operations? Explain each with examples. (1 time: 2024)

Part D (Answer any three questions. Each question carries 10 marks.)

Core & Highly Repeated:

1. Explain the advantages of DBMS over file system. (3 times: 2019, 2021, 2023)

2. Explain various operations in relational algebra. (2 times: 2019, 2021)

Core Concepts (Less Repeated / Unique):

1. What is Normalization? Explain different normal forms. (1 time: 2019)

2. Explain Boyce Codd Normal Form and Fourth Normal Form. (1 time: 2021)

3. Explain the architecture of database management systems. (1 time: 2022)

4. Compare and contrast BCNF and 3NF with examples. (1 time: 2022)

5. What is a Trigger? Explain the procedure for creating triggers in SQL. (1 time: 2022)

6. What is E-R diagram? Explain any four attributes in E-R model with suitable example. (1 time: 2023)

7. Explain Functional dependency and multivalued dependency with suitable examples. (1 time: 2023)

8. What are stored procedures? Explain its advantages in database programming. (1 time: 2023)

9. a. Explain different relational database anomalies in a database. (5 marks) b. List different data models and explain each. (5 marks) (1 time: 2024)

Other Important / Unique Questions:

1. Explain how to create, modify, delete, rename and drop tables in SQL with example. (1 time: 2019)

2. Write a comparison on relational calculus and domain calculus. (1 time: 2019)

3. Write a short note on: A) Built in Function in SQL B) Aggregate Functions in SQL (1 time: 2021)

4. Explain different Concurrency Control Protocols in DBMS. (1 time: 2021)

5. Discuss the various referential integrity constraints. (1 time: 2022)

6. *SQL Practical Case*: Employee(EmpID, Name, Address, DeptID, Designation, Salary) Department(DeptID, DeptName, HeadID) (i) Query employee with max salary (3 marks) (ii) Query employees with salary > ∎1,00,000 (3 marks) (iii) Query department head where EmpID = 100 (4 marks) (1 time: 2022)

7. Write SQL for creating the following with constraints: i) Student ii) Department iii) Faculty iv) Course v) Enrol (1 time: 2023)

8. a. What Does Database Concurrency Mean? b. Explain lost update problem & file-processing disadvantages. (6+4 marks) (1 time: 2024)