ACS COLLEGE OF ENGINEERING

**QUESTION BANK**

Subject :DBMS

Subject code:15CS53

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MODULE 1:

1. Define the following terms a) Database b) DBMS c) Program & Data independence d) end user e)DBA f) Data model g) Database schema h) DDL i) External schema j) conceptual schema k) DML l) VDL
2. Explain: i) Logical data independence ii) Physical data independence
3. Describe the role of DBA in DBMS
4. Define Schema and instance.
5. What are the elements of a database?
6. Why do we need DBMS?
7. Explain each of the following with advantage and disadvantage of its own? i) Hierarchical data base model.ii) Network database mode.iii) Object Oriented database model.
8. Discuss some types of database utilities and their functions. 06
9. Discuss the different classifications of DBMS. 06
10. What is a database schema? What is the difference between external and internal schema?
11. What are the characteristics of a data in a database? 06
12. With a neat diagram, explain Three-Schema-Architecture. 06\*
13. Discuss the main characteristics of the database approach. 08
14. What are the responsibilities of the DBA and the database designers? 08
15. What is the difference between logical data independence and physical data independence? Which is easier to accomplish? Why? Define the following terms a) Entity b) Attribute c) Relationship instance d) Multi valued Attribute.
16. How is traditional file processing different from database approach? 08\*
17. Explain the types of software components which constitute a DBMS and the types of computer system software with which DMBS interacts.
18. Discuss the main characteristics of the database approach. 08
19. What are the responsibilities of the DBA and the database designers? 08
20. Discuss some types of database utilities and their functions. 08
21. What do you mean by Database Management System? Explain the various advantages of using a Database management System?

MODULE 2:

1. In relational algebra, discuss some types of queries for which renaming are necessary in order to specify the query unambiguously.
2. Define different set operations in relation algebra. Give one example for each.
3. List aggregate functions commonly used in relational algebra. Give example for any three of them.
4. Explain the following clauses: i) Form ii) Having iii) Order by iv) Group by 04 2. Give the syntax for creating a view in SQL.
5. List the types of privileges available in SQL. 05 4. What are the different reasons for having variable length records?
6. What are the different reasons for having variable length records? 06 6. Explain the commands available for modifying the database in SQL.
7. Explain the aggregate functions used with SQL.
8. Explain Having and Group By clauses
9. Explain the SQL statements used with when clause.
10. How are the OUTER JOIN operations different from JOIN operations? How is the OUTER UNION operation different from UNION?
11. Why is accessing a disk block expensive? Discuss the time components involved in accessing a disk block
12. Discuss the various types of JOIN operations.
13. What is UNION compatibility? Why do the UNION, INTERSECTION and DIFFERENCE operations require that the relations on whom they are applied be union compatible?
14. Why is accessing a disk block expensive? Discuss the time components involved in accessing a disk block.
15. List and explain the commands available for retrieving and updating the database in SQL.
16. Explain joins and views in SQL with Examples.
17. Explain with an example in SQL i) Unspecified where-clause and use of asterisk. ii) Exist and not exists iii) Explicit sets and NULLS\* iv) Renaming attributes and joined tables.

MODULE 3:

1. Give the syntax for creating a view in SQL
2. What is the significance of views in SQL? Give SQL statement to update data
3. How are assertions and triggers created?
4. How to access database from applications.
5. Explain the architecture of JDBC.
6. Write short notes on SQJ and stored procedure.
7. Explain three-tier application architecture.
8. Discus presentation layer and middle tier.

MODULE 4:

1. What is a functional dependency?
2. Why is a relation that is in 3NF generally considered good?
3. Prove augmentation rule and transitive rule of inference for functional dependencies
4. What is the necessity of normalization?
5. What is normalization? What is normal from?
6. What are the different normal forms?
7. What are keys? What is primary, Foreign key?
8. What is the difference between intelligent and non-intelligent key?
9. What are the different types of relations between the entities in a table?
10. What is meant by canonical cover?
11. What is meant by prime and non prime attribute?
12. Why are normal forms alone are insufficient as conditions for a good schema design?
13. What is the dependency preservation property for decomposition? Why is it important?
14. What is the loss less join property of decomposition? Why is it important?

MODULE 5:

1. What is difference between conflict equivalence and view equivalence?
2. Explain transaction states using state transition diagram.
3. Explain locking techniques for concurrency control.
4. Write a note on Timestamp Ordering.
5. Discuss the actions taken by the read\_item and write\_item operations on a database.
6. Why are many nulls in a relation considered bad?
7. Explain Serial and Non-serial schedules with examples.
8. What do you mean by concurrent execution of database transactions in a multi-user system? Discuss why concurrence control is needed, and give informal examples.
9. What is a transaction? Explain with an example.
10. Discuss the different types of transaction failures. What is meant by catastrophic failure?
11. List and explain the desirable properties of transactions. 08 12. What is meant by transaction rollback? Why is it necessary to check for cascading rollback? Which recovery techniques do not require rollback?
12. Describe the shadow paging recovery technique. Under what circumstances it does not require a log?
13. What is meant by catastrophic failure and how recovery is handled?
14. Explain recovery based on immediate update techniques.
15. What do understand by serializability of schedules?