KINGS

COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ACADEMIC YEAR 2012-2013/EVEN SEMESTER
UNIT I - INTRODUCTION
PART A

1. Define database management system?
2. List few applications of DBMS.
3. What are the disadvantages of file processing system?
4. What are the advantages of using a DBMS?
5. Give the levels of data abstraction?
6. Define instance and schema?
7. Define the terms 1) physical schema 2) logical schema.
8. What is conceptual schema?
9. Define data model?
10. What is storage manager?
11. What are the components of storage manager?
12. What is the purpose of storage manager?
13. List the data structures implemented by the storage manager.
14. What is a data dictionary?
15. What is an entity relationship model?
16. What are attributes? Give examples.
17. What is relationship? Give examples
18. Define the terms
19. Define single valued and multi valued attributes.
20. What are stored and derived attributes?
21. What are composite attributes?
22. Define null values.
23. Define the terms
24. What is meant by the degree of relationship set?
25. Define the terms i) Key attribute ii) Value set
26. Define weak and strong entity sets?
27. What does the cardinality ratio specify?
28. Explain the two types of participation constraint.
29. Define the terms
30. Write short notes on relational model
31. Define tuple and attribute
32. Define the term relation.

PART B

1. What do you mean by data model? Explain network, hierarchical and relational model?(16)

3. Explain various levels of Data abstraction in database system?(8)

4. Explain architecture of DBMS and its advantages?(16)

5. What is DBA? What are major responsibilities of DBA and database designers?(8)

6. What are problems with traditional file processing system? How they are removed in database system? Explain.(12)

7. What do you mean by Entity-Relationship Diagram? Explain.(8)

8. Describe the three-level architecture of DBMS? Also explain its importance in a database environment.(8)

UNIT-II – RELATIONAL MODEL

PART-A

1. What are the parts of SQL language?

2. What are the categories of SQL command?

3. What are the three classes of SQL expression?

4. What is the use of rename operation?

5. Define tuple variable?

6. List the string operations supported by SQL?

7. List the set operations of SQL?

8. What is the use of Union and intersection operation?

9. What are aggregate functions? And list the aggregate functions supported by SQL?

10. What is the use of group by clause?

11. What is the use of sub queries?

12. What is view in SQL? How is it defined?

13. What is the use of with clause in SQL?

14. List the table modification commands in SQL?

15. List out the statements associated with a database transaction?

16. What is transaction?

17. List the SQL domain Types?

18. What is the use of integrity constraints?

19. What is trigger?

20. What are domain constraints?

21. What are referential integrity constraints?

22. What is assertion? Mention the forms available.

23. What is the need for triggers?

24. List the requirements needed to design a trigger.

25. List some security violations (or) name any forms of malicious access.

26. List the types of authorization.

27. Mention the various levels in security measures.

28. Name the various privileges in SQL?

30. Give the limitations of SQL authorization.

31. Define the term Domain.

32. What is a candidate key?

33. What is a primary key?

34. What is a super key?
35. Define-relational algebra.
36. Write short notes on domain relational calculus
37. Define query language?

PART B

1. What is the difference b/w single and multivalued attributes? Explain.(8)
2. Discuss the various update operation on relation and types of integrity constraints that must be checked for each update operation?(16)
3. What is relational algebra? Discuss the various operations of relational algebra.16)
4. Describe the different types of relational calculus in detail.(16)
5. What do you understand by distributed database?
Give advantages and disadvantages of Distributed database system.(16)
6. Explain the architecture of Client-Server databases in detail.(16)
7. What are the main differences between a parallel and a distributed system? Explain.(8)
8. Explain embedded SQL in detail.(8)
9. Explain the integrity constraints supported by SQL.(8)
10 .Explain security and authorization and Security in SQL.(12)
11. Explain dynamic SQL in detail.(8)

UNIT III – DATABASE DESIGN

PART- A

1. Define Boyce codd normal form
2. List the disadvantages of relational database system
3. What is first normal form?
4. What are the uses of functional dependencies?
5. What are axioms?
6. What is meant by computing the closure of a set of functional dependency?
7. What is meant by normalization of data?
8. Define canonical cover?
9. List the properties of canonical cover.
10. Explain the desirable properties of decomposition.
11. What is 2NF?
12. Define 1NF
13. What is Dependency diagram?
14. What are the Desirable dependencies based on entire primary key
15. Define Physical Data Independence.
16. Define Logical Data Independence:

PART B

1. Discuss the various normal forms in normalization with suitable examples.(16)
2. Define term anomalies. Explain BCNF in detail.(12)
3. What do you mean by BCNF? Why it is used and how it differs from 3 NF?(8)
4. Explain Functional dependency and trivial functional dependency with examples.(12)
5. Explain BCNF with examples and also state the difference between this from 3NF. (8)

UNIT IV - TRANSACTIONS

PART A

1. What is transaction?
2. What are the two statements regarding transaction?
3. What are the properties of transaction?
4. What is recovery management component?
5. When is a transaction rolled back?
6. What are the states of transaction?
7. What is a shadow copy scheme?
8. Give the reasons for allowing concurrency?
9. What is average response time?
10. What are the two types of serializability?
11. Define lock?
12. What are the different modes of lock?
13. Define deadlock?
14. Define the phases of two phase locking protocol
15. Define upgrade and downgrade?
16. What is a database graph?
17. What are the two methods for dealing deadlock problem?
18. What is a recovery scheme?
19. What are the two types of errors?
20. What are the storage types?
21. Define blocks?
22. What is meant by Physical blocks?
23. What is meant by buffer blocks?
24. What is meant by disk buffer?
25. What is meant by log-based recovery?
26. What are uncommitted modifications?
27. Define shadow paging.
28. Define page.
29. Explain current page table and shadow page table.
30. What are the drawbacks of shadow-paging technique?
31. Define garbage collection.
32. Differentiate strict two phase locking protocol and rigorous two phase locking Protocol.

PART B

1. Briefly explain one deadlock prevention algorithm.(8)
2. What is two-phase locking and how does it guarantee serializability?(8)
3. Discuss the concurrency control mechanism in detail using suitable example.(16)
4. How Share and exclusive locks differ? Explain.(8)
5. Explain two phase locking in detail.(16)
6. Explain log based recovery in detail.(16)
7. Explain ACID properties.(8)

UNIT V – IMPLEMENTATION TECHNIQUES
PART A

1. Give the measures of quality of a disk.
2. Define access time.