DBMS Questions

1. Explain Referential Integrity with an example

2. What is Redundancy ? How does normalization help minimize redundancy ? Give an   
 example to illustrate this concept

3. What is "Cascade on Delete" ? Explain with an example

4. What are the advantages of using stored procedures ?

5. Explain the terms INSERTED & DELETED with respect to triggers

6. How does a view provide data independence ?

7. What are the applications of views ?

8. What is the significance of where and having clauses ? Can a query use both or only one   
 of them ? If they can use both can you provide an example ?

9. What is a Common Table Expression ? Why do you need them ? Can you give an example   
 of a CTE in action ?

10. Explain how a simple nested sub query differs from a correlated sub query

11. What is an index ? How does it help with faster execution of queries ?

12. Explain Clustered and Non clustered Index with an Analogy

13. What is the difference between DELETE, DROP & TRUNCATE

14. Explain the difference between SQL & No SQL Databases ? What are rthe use case   
 scenarios for using no SQL Databases such as MongoDb or Cassandra ?

15. Explain why it is easy to scale No SQL databases compared to No SQL databases ?

16. Explain why performance is much better ( millisecond latency ) with No SQL databases   
 compared to SQL databases

17. What is sharding ? Why is sharding difficult in relational databases ?

18. What happens behind the scenes when you use JDBC ?

19. What is meant by Query tuning ? How does it improve performance ?

20. Explain the difference between row level and statement level triggers ?

21. Provide an example for the following mappings :

a. One to One

b. One to Many

c. Many to Many

22. How can you store files in databases ? What datatype is used to store Binary Files ? What   
 is a filestream object ?

23. Explain the steps in the design of a relational database

24. What are the overheads of using indexes ?

25. Why is it that you can create only 1 clustered index but many non clustered indexes for a   
 table ?

26. Explain the following terms with an example

a. Insertion Anomaly

b. Deletion Anomaly

c. Updation Anomaly

27. Give an example to illustrate

a. Multi Valued Attribute

b. Repeating Group

c. Partial Dependency

d. Transitive Dependency

28. Explain the following terms with example

a. Primary Key

b. Candidate Key

c. Super Key

d. Foreign Key

29. What is a union ? Provide a scenario to illustrate the significance of union

30. Explain Group By clause with an example

31. Explain Partition By clause with an example

32. What is SQL Injection Attack ? How does it happen ? How can you prevent

SQL Injection Attack ?

33. What is the primary use case of triggers ?

34. Write a Correlated Sub Query to determine the employee with the

a. 3rd highest salary

b. 5th lowest salary

35. Write a Query using the Dense Rank function to determine the employee with the

a. 3rd highest salary

b. 5th lowest salary

36. Explain Check constraint with an example

37. Explain the following concepts

a. Commit

b. Rollback

c. Checkpoint

38. Explain the advantages of Databases over Files as storage medium

39. What are the security provisions that are available when we use

Relational Databases

40. What are cursors ?