Database Technologies

1. What is normalization? What is its need? Explain 1NF, 2NF, 3NF and BCNF in detail.
2. Explain difference between super key, candidate key, alternate key, compound key, surrogate key, primary key, foreign key, and unique key.
3. What is difference between stored procedure and function?
4. Explain OUT parameter and IN-OUT parameter with an example (code).
5. What is Trigger? What are its application? Explain with example (code).
6. What is use of views? How to limit DML operations on views to the given criteria?
7. What are different types of views? What are applications of views?
8. What are advantages and limitations of indexes? What are different types of indexes? Explain with examples.
9. What is transaction? Explain ACID properties in RDBMS.
10. Find employees with third highest salary. Explain different ways to implement.
11. Find employees with salary more than their manager's salary.
12. What is difference between UNION and UNION ALL?
13. Change all gender values in the given table.
14. What will be output of different joins – Inner Join, Left Join, Right Join, Full Join, Cross Join, and Self Join.

```
CREATE TABLE t1 (c1 CHAR(1));
CREATE TABLE t2 (c2 CHAR(1));
INSERT INTO t1 VALUES ('A'), ('B'), ('B'), ('C'), ('P'), ('Q');
INSERT INTO t2 VALUES ('A'), ('B'), ('X'), ('Y'), ('Y'), ('Q');
```

15. Print department name and its average salary in descending order.
16. Display the employees, who are not managers.
17. How NoSQL is different than RDBMS? Where NoSQL is preferred over RDBMS?
18. Write a query to insert employee records in a Mongo collection.
19. Display name and salaries of employees in descending order for employees with salary more than 1000 (from a Mongo collection).
20. What is Big Data? How Big Data is different than traditional databases?