1.CREATE TABLE temp

```
(
  id   INT,
  name VARCHAR(100)
);
```

```
INSERT INTO temp VALUES (1, "abc");
INSERT INTO temp VALUES (2, "abc");
INSERT INTO temp VALUES (3, "bcd");
INSERT INTO temp VALUES (4, "cde");

SELECT Count(*)
FROM   temp
GROUP  BY name;
```

```
Answer:
count(*)
--------
2
1
1
```

2.Suppose (A, B) and (C,D) are two relation schemas. Let r1 and r2 be the corresponding relation instances. B is a foreign key that refers to C in r2. If data in r1 and r2 satisfy referential integrity constraints, which of the following is ALWAYS TRUE?

(A) $\Pi_B(r_1) - \Pi_C(r_2) = \varnothing$

(B) $\Pi_C(r_2) - \Pi_B(r_1) = \varnothing$

(C) $\Pi_B(r_1) = \Pi_C(r_2)$

(D) $\Pi_B(r_1) - \Pi_C(r_2) \neq \varnothing$

Answer: (A)

3. **Which of the following is TRUE?**

(A) Every relation in 2NF is also in BCNF

(B) A relation R is in 3NF if every non-prime attribute of R is fully functionally dependent on every key of R

(C) Every relation in BCNF is also in 3NF

(D) No relation can be in both BCNF and 3NF

Answer (C)

4. **Consider the tables A, B and C. How many tuples does the result of the following SQL query contain?**

```
Table A
Id   Name    Age
----------------
12   Arun    60
15   Shreya  24
99   Rohit   11
Table B
Id   Name   Age
----------------
15   Shreya  24
25   Hari    40
98   Rohit   20
99   Rohit   11
```

```
SELECT A.id
FROM   A
WHERE  A.age > ALL (SELECT B.age
                    FROM   B
                    WHERE  B. name = "arun")
```

(A) 4 (B) 3 (C) 0 (D) 1

Answer (B)

5.What is the output of the following SQL query?

```
SELECT Count(*)
FROM  ( (SELECT Borrower, Bank_Manager
        FROM   Loan_Records) AS S
         NATURAL JOIN (SELECT Bank_Manager,
                              Loan_Amount
                       FROM   Loan_Records) AS T );
```

(A) 3

(B) 9

(C) 5

(D) 6

Answer (C)

6. A relational schema for a train reservation database is given below.
Passenger (pid, pname, age)
Reservation (pid, class, tid)
What pids are returned by the following SQL query for the above instance of the tables?

Table: Passenger

pid	pname	age
0	Sachin	65
1	Rahul	66
2	Sourav	67
3	Anil	69

Table : Reservation

pid	class	tid
0	AC	8200
1	AC	8201
2	SC	8201
5	AC	8203
1	SC	8204
3	AC	8202

```
SELECT pid
FROM Reservation ,
WHERE class 'AC' AND EXISTS (SELECT * FROM Passenger WHERE
age > 65 AND Passenger. pid = Reservation.pid)
```

(A) 1, 0
(B) 1, 2
(C) 1, 3
(S) 1, 5

Answer C

7. What is the difference between TRUNCATE, DELETE and DROP statements?

8. Draw the B-tree of order 3 and order 4 created by inserting the following data arriving in sequence 92 24 6 7 11 8 22 4 5 16 19 20 7