Quiz-5

Total points 5/5

The respondent's email (**rahulvarma.t20@iiits.in**) was recorded on submission of this form.

✓ Q.2 1/1

Consider the relation X(P, Q, R, S, T, U) with the following set of functional dependencies

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F = {
        {P, R} → {S,T},
        {P, S, U} → {Q, R}
    }
```

Which of the following is the trivial functional dependency in F+ is closure of F?

A {P,R}→{S,T}

B {P,R}→{R,T}

C {P,S}→{S}

D {P,S,U}→{Q}

- ○ A
- ○ B
- ◉ C ✓
- ○ D

✓ Q.4 1/1

From the following instance of a relation schema R(A,B,C), we can conclude that:

A	B	C
1	1	1
1	1	0
2	3	2
2	3	2

- ○ A functionally determines B and B functionally determines C
- ○ A functionally determines B and B does not functionally determines C
- ◉ B does not functionally determines C ✓
- ○ A does not functionally determines B and B does not functionally determines C

✓ Q.3 1/1

Let R (A, B, C, D) be a relational schema with the following functional dependencies:

A → B, B → C,
C → D and D → B.

The decomposition of R into
(A, B), (B, C), (B, D)

A gives a lossless join, and is dependency preserving

B gives a lossless join, but is not dependency preserving

C does not give a lossless join, but is dependency preserving

D does not give a lossless join and is not dependency preserving

(●) A ✓

( ) B

( ) C

( ) D

✓ Q.5 1/1

$R(P, Q, S, T, X, Y, Z, W)$

$F = \{PQ \rightarrow X, P \rightarrow YX, Q \rightarrow Y, Y \rightarrow ZW\}$

$D_1: R = [(P, Q, S, T); (P, T, X); (Q, Y); (Y, Z, W)]$

$D_2: R = [(P, Q, S); (T, X); (Q, Y); (Y, Z, W)]$

Which one of the following options is correct?

(A) D1 is lossless decomposition, but D2 is a lossy decomposition.

(B) D1 is a lossy decomposition, but D2 is a lossless decomposition.

(C) Both D1 and D2 are lossless decomposition.

(D) Both D1 and D2 are lossy decompositions.

- (●) A ✓
- ( ) B
- ( ) C
- ( ) D

✓ Q.1 1/1

Consider the table R with attributes A, B, and C. The functional dependencies that hold on R are: $A \rightarrow B$, $C \rightarrow AB$. Which of the following statements is/are true?
I. The decomposition of R into R1(C, A) and R2(A, B) is lossless.
II. The decomposition of R into R1(A, B) and R2(B, C) is lossy.

(a) Only I
(b) Only II
(c) Both I and II
(d) Neither I nor II

- ○ A
- ○ B
- ◉ C ✓
- ○ D

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