Started on	Monday, 27 September 2021, 9:07 PM
State	Finished
Completed on	Monday, 27 September 2021, 9:22 PM
Time taken	14 mins 35 secs

Question **1**

Complete

Marked out of 1.00

Given a binary relationship type R with an attribute A, between entity types E_1 with key K_1 and E_2 with key K_2, let R_1 and R_2 be relations corresponding to E_1 and E_2, respectively –

Select one or more:

☐ a. Then the relationship type R can be represented by creating a new relation S with attributes K_1 and K_2

☑ b. Then the relationship type R can be represented by adding attributes K_1 and A to R_2

☐ c. Then the relationship type R can be represented by creating a new relation S with attribute A

☑ d. Then the relationship type R can be represented by adding attributes K_2 and A to R_1

☐ e. None of the others

Given **overlapping and total** subclasses S_1 with attribute A_1 and S_2 with attribute A_2 of an entity type E with key K and attribute A,

Select one or more:

- ☑ a. R(K, A, A_1, A_2) representation of S, E_1 and E_2 will have NULL values

- ☑ b. E need not be represented in the corresponding relational data model

- ☐ c. None of the others

- ☐ d. S_1 need not be represented in the corresponding relational data model

- ☐ e. S_2 need not be represented in the corresponding relational data model

Consider R(K, A1, A2, ... An) a relation satisfying all the integrity constraints, which of the following **relational algebra expressions give R as a result** -

Select one or more:

- ☑ a.
$$R \rhd \lhd_{K=K} R$$

- ☑ b.
$$\pi_{K,A_1,A_2,\ldots,A_n} (R \times R)$$

- ☑ c.
$$R *_{K,A_1,A_2,\ldots,A_n} R$$

- ☐ d. None of the others

- ☑ e.
$$\sigma_{(K \neq NULL)} R$$

Given a relation R(K, A$_1$, A$_2$, ..., A$_n$) satisfying all the integrity constraints, which of the following relational algebra expressions give EMPTY SET (no rows) as a result -

Select one or more:

☐ a. None of the others

☑ b. $R - ((R \cup R) \cap R)$

☑ c. $R - (R *_K R)$

☑ d. $\sigma_{(K=NULL)} R$

☐ e. $R \times R - R \cap R$

Consider the **two union compatible relations** T1 and T2 below -

∧ is AND operator

TABLE T1				TABLE T2		
P	Q	R		A	B	C
10	a	5		10	b	6
15	b	8		25	c	3
25	a	6		10	b	5

Then -

Select one or more:

☐ a. None of the others

☐ b. $\pi_P T1 \rhd\!\lhd_{P<A} T2 = 10$

☑ c. $T1 \rhd\!\lhd_{(P=A \wedge Q=B \wedge R=C)} T2 = \emptyset$

☑ d. $\pi_B T1 \rhd\!\lhd_{(P=A \wedge R=C)} T2 = b$

☐ e. $T1 \cap T2 \neq NULL$

◄ Quiz 4 Notes

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