CS & DA

Database Management System

Relational model & normal forms

DPP 02 (Discussion Notes)

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[MCQ]

CK = minimal SK

Every CK is SK

#Q. Consider the set of functional dependencies for a relation

R (D, N, C, S)

{D → N, D → C, D → S, C → S}

$\{D\}^+ = \{D\,N\,C\,S\}$

Then choose the correct statement regarding the above set.

A {D} is the super key for the relation.

① find CK

B {DN} is the candidate key for the relation. ✗

C {DC} is the candidate key for the relation. ✗

D {CN} is the superkey for the relation. ✗

[NAT]

#Q. Consider the given FD set for relation

R (X, Y, Z, W, U, V)

{X → Y, YZ → W, U → Z, W → X}

Then the number of prime attributes for the relation are?

5

(1) Find CK

(2) Count diff att. in CK

{U, V, X, W, Y}

→ {UVX}⁺ = {UVZYXW}

→ {UVW}⁺ =

{UVYZ} Not CK

→ {UVY}

[MCQ]

#Q. Consider the relation R (P, Q, R, S, T) and the set of function dependencies F = {P→Q, QR→T, TS→P}. Which of the following is not the candidate key of R?

A RST

B PRS

C QRS

D PQR

[NAT]

#Q. Assume a relation R (P, Q, R, S, T) with the set of functional dependencies {P→Q, Q→R, R→Q and Q→T}. How many candidate keys are possible in R?

$\{PS\}^+ = \{PSQRT\}$ (1)

[MSQ]

#Q. Consider a schema with attributes A, B, C, D & E following set of functional dependencies are given,

A→B

A→C

CD→E

B→D

E→A

Which of the following functional dependencies is implied by the above set?

A CD→AC

B BC→CD

C AC→BC

D BD→CD

[MCQ]

#Q. Consider the following two sets of functional dependencies

$X = \{P \rightarrow Q, Q \rightarrow R, R \rightarrow P, P \rightarrow R, R \rightarrow Q, Q \rightarrow P\}$

$Y = \{P \rightarrow Q, Q \rightarrow R, R \rightarrow P\}$

Which of the following is true?

A $X \subset Y$

B $Y \subset X$

C $X \equiv Y$

D None of the above

[MCQ] (B)

#Q. Consider the relation schema R(P, Q, R, S, T, U, V, W, X, Y) and the set of functional dependencies on R are:

F = {PQ → R, Q → TU, PS → VW, V → X, W → Y}. Which of the following can be the candidate key for R?

A PQT

B PQS

C PQSR

D PQSVW

[MCQ]

#Q. Consider the following FD sets:

$S_1 = \{P \rightarrow R, PR \rightarrow S, T \rightarrow PS, T \rightarrow U\}$

$S_2 = \{P \rightarrow S, QR \rightarrow PS, R \rightarrow Q, T \rightarrow P, T \rightarrow S, T \rightarrow U\}$

$S_3 = \{P \rightarrow S, R \rightarrow P, R \rightarrow Q, T \rightarrow PU\}$

Which of the following sets is equivalent?

$S_1 \not\equiv S_2$

$S_1 \not\equiv S_3$

$S_2 \subset S_3$

$S_3 \subset S_2$

$\Rightarrow S_2 \equiv S_3$

$T \rightarrow P \quad T \rightarrow S \quad T \rightarrow U$

$T \rightarrow PSU$

A $S_1 \equiv S_2$

B $S_2 \equiv S_3$ ✓

C $S_1 \equiv S_3$

D $S_1 \equiv S_2 \equiv S_3$

[NAT]

(4)

#Q. Assume the relation R that has eight attributes ABCDEFGH.

Let F = {CH→G, A→BC, B→CFH, E→A, F→EG} is a set of functional dependencies (FD). How many candidates key does the relation R have? _____.

{DA}+ = {ADBCFHEG}

{DE}+ = {ABCDEFGH}

{DF}+ = {

{DB}+ = {

[MCQ]

B

#Q. Assume the relation schema R(P, Q, R, S, T, U, V, W, X, Y) and the set of functional dependencies on R:

F = {PQ→R, Q→UV, PT→WX, W→Y, X→S}.

Which of the following can be candidate key for R?

{PQT}+

A PQU

B PQT

C PQTR SK Not a CK

D PQTWX SK Not a CK

{PQT}+ = {PQTRUVWXYS}

(1) Before taking class recap PCN

(2) Solved Each & Every DPP & WT by YS

(3) On Sat/Sun Revise your PC

THANK - YOU