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Final Answers CSC-430-001

Section A

6.1

Supplier (sid, sname, address)
Part (pid, pname, color)
Catalog (sid, pid, price)

Select x.sid, y.sid
From Catalog x, Catalog y
Where x.pid = y.pid AND x.sid <> y.sid
AND x.cost > y.cost;

6.2

Select s.sid
From Suppliers s
Where s.sid IN (Select c.sid
From Parts p, Catalog c
Where p.pid = c.pid
AND p.color = 'red')
OR s.address = 'Ruston City';

8.1) STUDENT(SSN, SName, Saddress,
HScode, HSname, HScity,
GPA, priority)

FD $\{ HScode \rightarrow (HSname, HScity),$
 $GPA \rightarrow priority$
 $SSN \rightarrow (SName, Saddress, GPA) \}$

STUDENT(SSN, SName, Saddress, $\overbrace{HScode, HSname, HScity}^{(p.d)}$, $\overbrace{GPA, priority}^{(p)}$)

$GPA^+ : GPA, priority$

$SSN^+ : SSN, SName, Saddress, GPA, priority$ (p.d)

$HScode^+ : HScode, HSname, HScity$ (p.d)

STUDENT(SSN, SName, Saddress, HScode, HSname, HScity, GPA, priority)

\rightarrow STUDENT₁(GPA, priority)

\rightarrow STUDENT₂(GPA, SSN, SName, Saddress, HScode, HSname, HScity)

\rightarrow STUDENT₃(HScode, HSname, HScity)

\rightarrow STUDENT₂₂(HScode, SSN, SName, Saddress, GPA)

\rightarrow STUDENT₂₂₁(SSN, SName, Saddress, GPA)

\rightarrow STUDENT₂₂₂(SSN, HScode)

STUDENT(SSN, SName, Saddress, HScode, HSname, HScity, GPA, priority)

\rightarrow STUDENT₁(GPA, priority)

\rightarrow STUDENT₂(HScode, HSname, HScity)

\rightarrow STUDENT₃(SSN, SName, Saddress, GPA)

\rightarrow STUDENT₄(SSN, HScode)

- 8.2)
- 1) Are there goals for this program?
 - 2) What is the expression for the goal?
 - 3) What are the terms for the expressions?
 - 4) What are the factors for the terms?

9.1) $STU(CWID, Name, Subj, Loc, Score)$

FDs $\{ CWID \rightarrow (Name, Subject), (CWID, Loc) \rightarrow Score \}$

$SUB_1(CWID, Name, Subj)$ $SUB_2(CWID, Location, Score)$

$SUB_1 \cup SUB_2 = STU$ i✓

$SUB_1 \cap SUB_2 \neq \emptyset$ ii✓

$= CWID$

1) Lossless

$SUB_1 \cap SUB_2 = SUB_1$ or $SUB_1 \cap SUB_2 = SUB_2$ iii✓

Use FDs $CWID \rightarrow Name, Subj \Rightarrow SUB_1$

$SUB_3(CWID, Name, Loc, score)$ $SUB_4(Loc, score)$

$SUB_3 \cup SUB_4 \neq STU$ Lossy

1) Lossless. 2) Lossy

9.2) $R(\text{rid}, \text{title}, \text{aid}, \text{auth}, \text{sub})$

$FD(\text{rid} \rightarrow \text{title}, \text{title} \rightarrow \text{sub}, \text{aid} \rightarrow \text{auth})$

$R(\text{rid}, \text{title}, \text{aid}, \text{auth}, \text{sub})$

split into other tables

$R_1(\text{rid}, \text{title})$

$R_2(\text{title}, \text{sub})$

$R_3(\text{aid}, \text{auth})$

primary key = (rid, aid)