Final Examination

Q6.1

SELECT s.sid, s2.sid
FROM
WHERE

Q6.2

SELECT s.sid, s2.sid
FROM
WHERE

Q8.1
STUDENT(SSN,SName,Saddress, HScode, HSname, HScity, GPA, priority)

FD={
HScode →(HSname, HScity),
GPA→ Priority,
SSN→ (SName, Saddress, GPA)
}.

HScode → (HSname, HScity)
HScode$^+$: HScode, HSname, HScity

GPA → Priority
GPA$^+$: GPA Priority

SSN → (SName, Saddress, GPA)
SSN$^+$: SSN, SName, Saddress, GPA, Priority

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

$(SSN, HScode)^+$

Using (GPA→ Priority)
    R$_1$ (GPA, Priority)
    R$_2$(GPA, SSN, SName, Saddress, HScode, HSname, HScity)

Using (HScode →(HSname, HScity))

    R$_{21}$ (HScode, HSname, HScity)

    R$_{21}$ (HScode, GPA, SSN, SName, Saddress)

Using (SSN→ (SName, Saddress, GPA))

    R$_{221}$ (SSN, SName, Saddress, GPA)

    R$_{222}$ (SSN, HScode)

Q8.2

Parse tree checks:

Syntactic- Checks for syntax errors

Entity Checks - Checks if relation name is valid

View Expansion - Replaces relation nodes with parse tree view

Attribute Checks - Checks if attribute name is valid

Type check- Checks if attributes have the correct type

Q9.1

STUDENT(CWID,Name,Subject,Location,Score)

STUDENT

CWID	Name	Subject	Location	Score
10156731	John	Computer Networks	Ruston	96
10145221	John	DBMS	Ruston	100

FDs:

{CWID→Name

CWID→Subject,

CWID,Location)→Score}

STUDENT is decomposed into the following:

1. STUSUB1(CWID,Name,Subject)and STUSUB2(CWID,Location,Score)

2. STUSUB1(CWID,Name,Location,Score)and STUSUB2(Location,Score)

(a) 1 is lossy but 2 is lossless
(b) 1 is lossless but 2 is lossy
(c) Both 1 and 2 are lossless
(d) Both 1 and 2 are lossy

Q9.2

Given the relation REPORT(RID,Title,AID,Author,Subject) having the following set of functional dependencies.

{RID→Title, Title→Subject, AID→Author}

Decompose into 3NF