6.1 Select s.SID, p.SID from CATALOG s, CATALOG p
where s.SID != p.SID and s.pid = p.pid and s.price > p.price;

6.2 Select * From (Select s.sid from SUPPLIER s where address LIKE
'%Ruston City%') union (select c.sid from CATALOG c
Join Part p on c.pid = p.pid) where p.color = 'red');

8.1 SSN Sname Saddress Hscode HsName Hs city GPA priority

Hscode : pd STUDENT$_1$ (Hscode, HsName, Hs(ity) Hscode$^+$: Hscode, name, city
GPA : Pd STUDENT$_2$ (Hscode, SSN, Sname, Sadress, GPA, Priority)
SSN : pd STUDENT$_{21}$ (SSN, Sname, Saddress) SSN$^+$: Sname, Saddress, SSN
STUDENT$_{22}$ (SSN, Hscode, GPA, Priority)
STUDENT$_{221}$ (GPA, Priority) GPA$^+$: GPA, Priority
STUDENT$_{222}$ (GPA, SSN, Hs Code)

STUDENT$_1$ (Hscode, Hs Name, Hs address)
STUDENT$_2$ (SSN, Sname, Saddress)
STUDENT$_3$ (GPA, priority)
STUDENT$_4$ (GPA, SSN, Hs code)

9.2 Syntactic Checks: Makes sure the query has all required syntax
Entity checks: Checks that all referenced tables are valid
View expansion: parse trees are created for views and placed at their nodes
Attribute checks: checks that all referenced attributes are valid
Type checks: ensures all referenced attributes have the correct types
for their operations.

9.1 $STU_{sub1} \cup STU_{sub2} = (CWID, Name, Subject, Location, Store)$ ✓

$STU_{sub1} \cap STU_{sub2} = CWID$ ✓

$STU_{sub1} \cap STU_{sub2} \neq STU_{sub1}$ or STU_{sub2} ✗

$STU_{sub1} \cup STU_{sub2} = (CWID, Name, Location, score) \neq STUDENT$ ✗

d) both 1 and 2 are lossy

9.2 RID → Title, AID → Author, Subject

RID : pd

Title : td

AID : pd

$Report_1$ (RID, Title, Subject)

$Report_{11}$ (RID, Title)

$Report_{12}$ (Title, Subject)

$Report_2$ (AID, Author)

$Report_3$ (RID, AID)

$Report_1$ (RID, Title)
$Report_2$ (Title, Subject)
$Report_3$ (AID, Author)
$Report_4$ (RID, AID)