

Section:

BB) checks on parse tree:

- ~~Syntax~~ Syntactic checks: Is the syntax of every operator correct?
- Entity checks: Does every relation name refer to a view? replace the relation node with the parse tree of the view.
- View expansion: If a relation name refers to a view, replace the relation node with the parse tree of the view.
- Attribute checks: Does every attribute name refer to valid attributes?
- Type checks: Does each attribute participating in an expression have the proper type?

Q.1 Section-B)

$Hscore \rightarrow Hsname, HScity, GPA, priority$

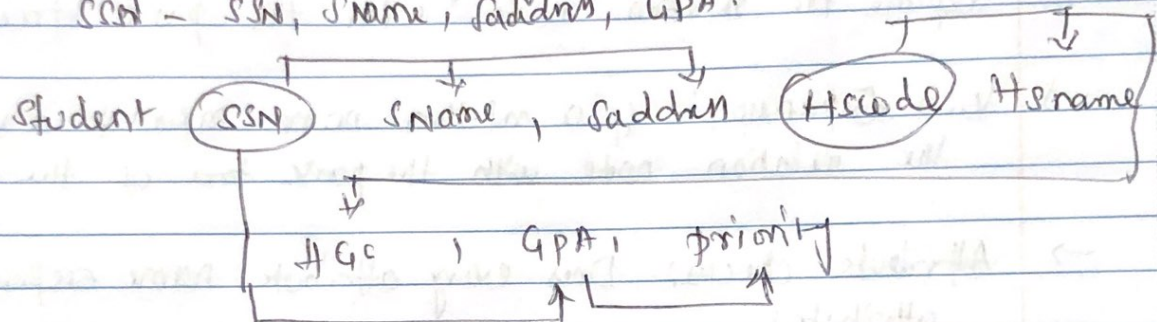
$GPA \rightarrow priority$

$SSN \rightarrow SName, Saddress, GPA, Cpd$

$Hscore = Hscore, Hsname, HScity$

$GPA = GPA, priority$

$SSN = SSN, SName, Saddress, GPA$



$SSN, Hscore = SName, Saddress, GPA, SSN$   
 $Hscore, Hsname, HScity, priority$

$GPA = priority$

$R_1(GPA, priority)$   
 $R_2(GPA, Hcity, Hsname, Hscore, Saddress, Sname, SSN)$

Using

$SSN \rightarrow SName, Saddress, GPA$

$R_{P1}(SSN, SName, Saddress, GPA)$

$R_{P2}(SSN, Hcity, Hsname, Hscore, GPA)$



Using Hcode + Hname HSN



R221 (Hcode, Hname, Hqty)

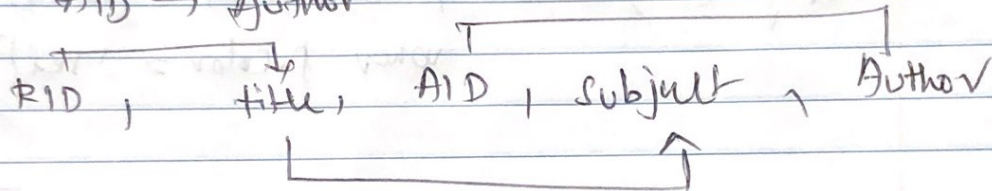
R222 (Hcode, SSN)

9.2) Report (RID, title, AID, Author, Subject)

RID → title

title → Subject

AID → Author



RID, AID = RID, AID, title, Subject, Author

RID → title is partial dependency

title → Subject is transitive dependencies.

AID → Author is partial dependencies.

9.1) The option is (b)

1 is lossy but 2 is lossy

Because 1)  $R_1 \cup R_2 = R$  ✓

2)  $R_1 \cap R_2 \neq \emptyset$  ✓

3)  $R_1 \cap R_2 \rightarrow R_1$  or  $R_1 \cap R_2 \rightarrow R_2$

holds true.

6A) Student (SSN, Name,)

Select  $R_1.sid, R_2.sid$  from Catalog  $R_1 \times$  Catalog  $R_2$   
where  $(R_1.pid = R_2.pid)$  And  $(R_1.sid = R_2.sid)$  And  
 $(R_1.Cost > R_2.Cost)$

8) Select  $Sid$  from Suppliers where address = Ruston  
City (or) select  $p.color$  from part B  
where  $p.color = 'red'$

9.4) Student

$R_1 \cup R_2 = R$  Hold true

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

The operation

$R_1 \cap R_2 \neq \emptyset$  holds true

$R_1 \cap R_2 \rightarrow R_1$  holds true

$\therefore$  Since the 3 conditions satisfy it is a  
lossy join for (2)

$R_1 \cup R_2 = R$  doesn't hold true

Hence it is a lossy join