Q.6.1

```
select   R1.sid, R2.sid
from     Catalog R1, catalog R2
where    R1.pid = R2.pid ∧ R1.sid ≠ R2.sid ∧ R1.cost > R2.cost
```

6.2

```
select   S.sid
from     Supplier S, Part P, catalog C
where    S.sid = C.sid ∧ P.pid = C.pid ∧ P.color = 'Red'
Union
select   S.sid
from     Supplier S
Where    S.address = 'Rustan city'
```

Q 8.1 none of the following are in BCNFbecause none are eligible primary keys nor are they superkeys in the other FDs

Q 8.2:
Synactic checks: is the syntax of the operators correct
Entity check: to see if every relation name refers to valid relation
Attribute checks: to see if each attribute name refers to a valid attribute
Type checks: does each participating attribute have its appropriate type

Q9.1:
Option c is the correct one, both tables are lossless because when you do the natural join on the tables you get the same table you had before

Q9.2: the following {RID→Title,Title→Subject, AID→Author} breaks down into
R1{RID -> title, AID -> Author}   R2{Title -> subject}