**Practice Exercise-2**

For each Relation, R, and set of Functional Dependencies, F:

1. Find all candidate keys.  
2. Find the closure of F.

3. Is R in BCNF? 3NF?

Q.1 R = { A, B, C, D, E}  
F = {A → BC ; CD → E ; B → D ; E → A}

Q.2 R = { A, B, C, D, E}  
F = {C → AB ; ED → C ; B → DE ; E → DA}

Q.3 R = {A, B, C, D, E}  
F = {A → E, BC → A, DE → B}

Q.4 R = {A, B, C, D, E}  
F = { A → B, BC → E, ED → A }

Q.5 R = {A , B, C, D, E, F}  
F = { AB→C, C → B, ABD → E, F → A}

Drinkers(name, addr, beersLiked, manf, favBeer)

FD’s: name->addr favBeer,

beersLiked->manf

Beers(name, manf, manfAddr)

FD’s: name->manf,

manf->manfAddr

Consider a relation schema R(X Y Z W P ) is decomposed into R1( X Y Z ) and R2( Z W P). determine whether the above R1 and R2 are Lossless or Lossy?

Consider a relation schema R( X Y Z W P) is decomposed into R1( X Y ) and R2( Z W ). determine whether the above R1 and R2 are Lossless or Lossy?