Question 1 – Normalise the following relations into BCNF

a)

R [A, B, C, D, E]

FD 1: A → C

FD 2: {A, B} → {D, E}

b)

R [A, B, C, D, E]

FD 1: A → B

FD 2: C → {D, E}

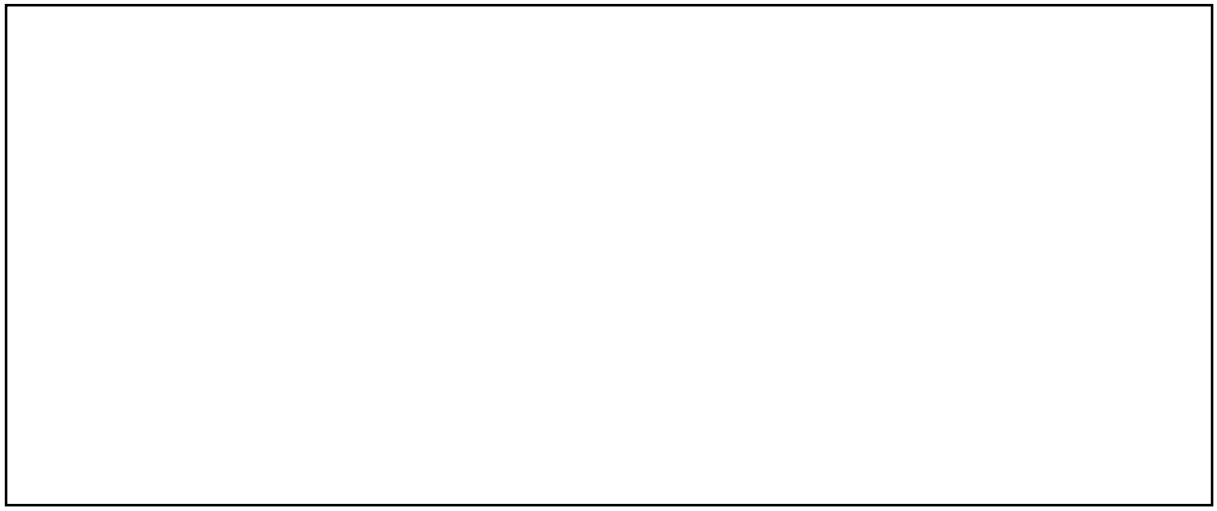
c)

R [A, B, C, D, E, F]

FD 1: A → {B, C}

FD 2: C → {D, E}

FD 3: E → F



d)

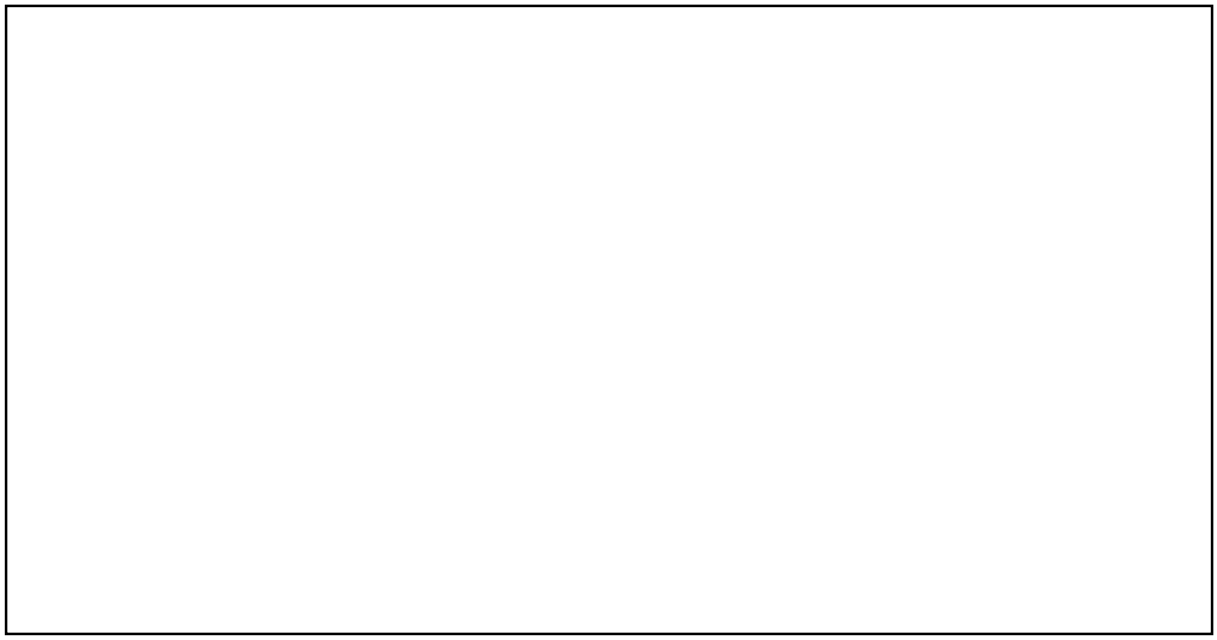
R [A, B, C, D, E]

FD 1: A → B

FD 2: C → {D, E}

FD 3: {A, D, E} → C

FD 4: {B, C} → A



Question 2 – Derive Minimal Cover for the following FD sets

a)

1. A → {D, E} 2. D → A 3. B → C

4. {B, C} → {A, D} 5. {E, A} → D

b)

1. A → {B, C, D, E, F} 2. {B, C} → A 3. {D, E} → B

4. C → D

Question 3 – Decompose the following relations into 3NF

a)

R [A, B, C, D, E, F]

FD 1: {A, B} → C

FD 2: C → {D, E}

b)

R [A, B, C, D, E, F, G, H]

FD 1: {A, B} → C

FD 2: {C, D} → E

FD 3: D → {F, G}