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(a)
I^+ = DFGI
H^+ = ACEH
BI^+ = ABCDEFGHIJK
B^+ = BHCEA
CI^+ = CDFGIK
I→ DGF, H→ CEA, G→ H, CI→ K violate BCNF because the left sides are not super keys.

(b)
Firstly, we split R using I^+. Then, we get R_1(DFGI), R_2(ABCEHIJK).
No FD in S violates BCNF for R_1(DFGI).
For R_2(ABCEHIJK), H→ CEA violates BCNF. We split R_2(ABCEHIJK) into R_3(ACEH), R_4(BHIJK).
No FD violates BCNF in R_3(ACEH).
For R_4(BHIJK), B→ H violates BCNF. We split R_4(BHIJK) into R_5(BH), R_6(BIJK).
No FDs violates BCNF in R_5(BH) and R_6(BIJK). Therefore, we have R_1(DFGI), R_3(ACEH), R_5(BH) and R_6(BIJK).

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(a)
Step 1: Split the RHSs to get our initial set of FDs,S1:
(a) ACDE→B
(b) BF→A
(c) BF→D
(d) B→C
(e) B→F
(f) CD→A
(g) CD→F
(h) ABF→C
(i) ABF→D
(j) ABF→H
Step 2: For each FD, try to reduce the LHS: (a) No singleton LHS yields anything, we need only consider LHSs with two or more attributes. CD^+ = CDAF, do we can reduce it to CDE→B.
(b) B→CF, we can reduce it to B→A.
(c) Same as (b), B→D.
(d) Only B at LHS, cannot reduce.
(e) Only B at LHS, cannot reduce.
(f) No singleton LHS yields anything,cannot reduce.
(g) No singleton LHS yields anything,cannot reduce.

(h) BF→A, and B→CF, we can reduce as B→C.
(i) Smae as h, we can reduce as B→D.
(j) Smae as h, we can reduce as B→H.

Now we have:
(a) CDE→B
(b) B→A
(c) B→D
(d) B→C
(e) B→F
(f) CD→A
(g) CD→F
(h) B→C
(i) B→D
(j) B→H

Step 3: Try to eliminate each FD. We have:
B→C
B→D
B→H
CD→A
CD→F
CDE→B

(b)
Combining minimal basis FDs:
B→CDH
CD→AF
CDE→B
The keys are b, CD, CDE
(c)
The relations:
R_1(ACDF), R_2(BCDE),R_3(BCDH)
Since G never appears, so we need to add a new relation R_4(CDEG)
$CDEG^+$ = ABCDEFGH.
The relations are R_1(ACDF), R_2(BCDE),R_3(BCDH), R_4(CDEG)
(d)
B is not the superkey. It violate BCNF. So R_3 allow redundancy. So the schema allows redundancy.