Briefly answer the following questions:

1. Give a set of FDs for the relation schema R(A, B, C, D) with primary key AB under which R is in 1NF but not in 2NF.
2. Give a set of FDs for the relation schema R(A, B, C, D) with primary key AB under which R is in 2NF but not in 3NF.
3. Consider the relation schema R(A, B, C, D) which has the FD $B \rightarrow C$. If A is a candidate key for R, is it possible for R to be in BCNF? If so under what conditions? If not, explain why not.