Bhargavi Velury

Q42) given, dataset that contains five items, {A, B, C, D, E}

Suppose the rules {A, B} → C has the same confidence as {A, B} → D

1 a) given statement,

The confidence of {A, B} → {C, D} is the same as the confidence of {A, B} → {C}

This statement is false, Because, The confidence rule is the probability of itemset C being given that itemset A & B are purchased. If the confidence of {A, B} → C is the same as {A, B} → D means the occurance of {A B} is same as occurance of {A, B} is D. The confidence of the rule {A, B} → {C, D} could be higher than {A, B} → C. But if D rarely occurs with C, the confidence might be lower.

1 b) given statement,
All the transactions that contain {A, B, C} also contain {A, B, D}
This statement is false. Because, the presence of {A, B, C} in a transaction does not imply the prerence of {A, B, D}. The association rules {A, B} → C and {A, B} → D do not guranbee that C and D always occur together.

1(c) $\{A, B, c\}$ is not a closed Itemset is the given Itemset statement.

-The Itemset is considered closed if there is no superset with the same support. If $\{A, B, c\}$ is a closed Itemset, it implies that there is no other Itemset containing A, B, C with same support level.

Hence this statement is true. because, whether $\{A, B, c\}$ is closed or not depends on the support of $\{A, B, c\}$ compared to other Itemsets containing A, B and c.