Week-11
Association Rule Mining

Answer the following Multiple-Choice Questions

1. Association Rule Mining involves,
    a) Same as frequent itemset mining
    b) Finding Strong association rules using frequent itemsets
    c) Both a and b
    d) None of the above

2. What do we mean by Support(X)?
    a) Total number of transactions containing in X
    b) Total number of transactions not containing in X
    c) Number of Transactions containing X/ Total number of transactions
    d) Number of Transactions not containing X/ Total number of transactions

3. Which of the following is direct application of frequent itemset mining?
    a) Social Network Analysis
    b) Market Basket Analysis
    c) Outlier Detection
    d) None of the Above

4. Following is a transaction data given:

TID	Items
10	Ball, Nuts, Pen
20	Ball, Coffee, Pen, Nuts
30	Ball, Pen, Eggs
40	Ball, Nuts, Egg, Milk
50	Nuts, Coffee, Pen, Eggs, Milk

   For the given, support threshold 0f 40%, how many 3-items/item sets can be obtained?
    a) 1
    b) 0
    c) 2
    d) 3

5. What will be the effect of reducing the Confidence Threshold on the same dataset?
    a) Number of Association rules will get added to the currently available rule
    b) Number of Association rules will get reduced from the currently available rule
    c) Association Rules become invalid
    d) None of the above

6. Choose the following analysis method that you think will be more appropriate for the scenario, first buys iPhone and then buys Air pod.
    a) Classification
    b) Association Rule
    c) Prediction

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       d) None of the above

7. Choose which data mining task is the most suitable for the following scenario:
   To identify items that are bought concomitantly by a reasonable fraction of customers that they can be shelved.
          a) Association Rule
          b) Classification
          c) Clustering
          d) Noe of the above

8. What does Apriori Algorithm do?
          a) It mines all frequent patterns through pruning rules with lesser support & confidence
          b) It mines all frequent patterns through pruning rules with higher support & confidence
          c) Both of the above
          d) None of the above

9. When do you consider an association to be appropriate for its interestingness to be measured?
          a) Satisfies Support threshold
          b) Satisfies Confidence threshold
          c) Both a and b
          d) None of the above

10. **Our use of association analysis will yield the same frequent item sets and strong association rules whether a specific item occurs once or three times in an individual transaction**
           a) True
           b) False

Answer the following Question

Measure the Associations for the following Transactional Data given below using Support, Confidence and Lift:

Transaction ID	Items
1	Jam, Perfume, Snacks, Soap
2	Beer, Bread, Jam, Snacks
3	Potato, Onion
4	Bread, Chocolate, Coffee, Jam
5	Beer, Coffee, Perfume, Snacks, Soap
6	Bread, Chocolate, Jam, Soap
7	Onion, Perfume
8	Bread, Chocolate, Snacks
9	Chocolate, Perfume, Soap
10	Beer, Bread, Jam, Snacks

The threshold for Support is estimated as: 30%

The threshold for Confidence is estimated as: 70%

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