(1) Date: 18.11.2024 **Roll Number: _____**

MCA, Semester III

Department of Computer Science

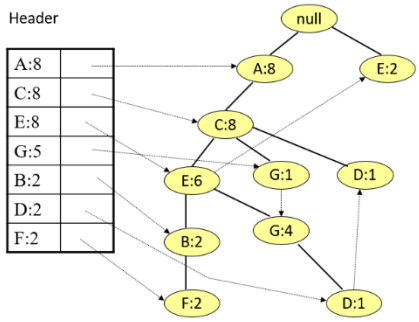
MCAO 302: DATA SCIENCE USING PYTHON

Class Test-2

Max marks: 15 **Time: 30 mins**

1. Supersets of a frequent itemset is always frequent. [True/False] [1]
2. The support helps to identify association rule in apriori algorithm [True/False] [1]
3. Consider `L3={abc, abd, acd, ace, bcd}`, generate `C4` from `L3`. Justify your answer also. [2]

4. Consider the following FP-tree. Find out the frequent itemsets ending in F. Justify your answer. [2]



5. Write mathematically single-link Inter-Cluster Distance measure. [2]

6. Write three drawbacks of k-means clustering algorithm. [3]

7. Define confidence of a rule. Consider the following dataset, and `L3 = {{I1, I2, I5}}`, generate all the association rules from this itemset and compute confidence of each. Also, comment on each rule, if minimum confidence is 50%. [4]

TID	List of Item_IDs
T100	I1, I2, I5
T200	I2, I4
T300	I2, I3
T400	I1, I2, I4
T500	I1, I3
T600	I2, I3
T700	I1, I3
T800	I1, I2, I3, I5
T900	I1, I2, I3

(2) Date: 07.10.2024 **Roll Number: _____**

MCA, Semester III

Department of Computer Science

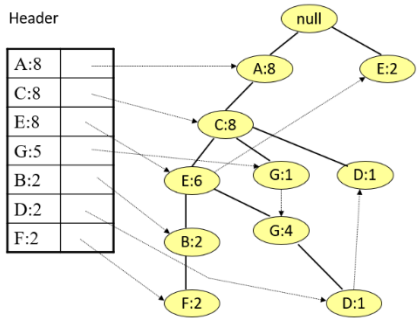
MCAO 302: DATA SCIENCE USING PYTHON

Class Test-2

Max marks: 15 **Time: 20 mins**

1. Subsets of a frequent itemset is always frequent. [True/False] [1]
2. The confidence helps to identify association rule in apriori algorithm [True/False] [1]
3. Consider `L3={abc, abd, acd, ace, bcd}`, generate `C4` from `L3`. Justify your answer also. [2]

4. Consider the following FP-tree. Find out the frequent itemsets ending in F. Justify your answer. [2]



5. Write mathematically complete-link Inter-Cluster Distance measure. [2]

6. Write three drawbacks of k-means clustering algorithm. [3]

7. Define confidence of a rule. Consider the following dataset, and `L3 = {{I1, I3, I5}}`, generate all the association rules from this itemset and compute confidence of each. Also, comment on each rule, if minimum confidence is 50%. [4]

TID	List of Item_IDs
T100	I1, I3, I5
T200	I2, I4
T300	I2, I3
T400	I1, I3, I4, I5
T500	I1, I3
T600	I2, I3
T700	I1, I3
T800	I1, I2, I3, I5
T900	I1, I2, I3