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FIM - Quiz5

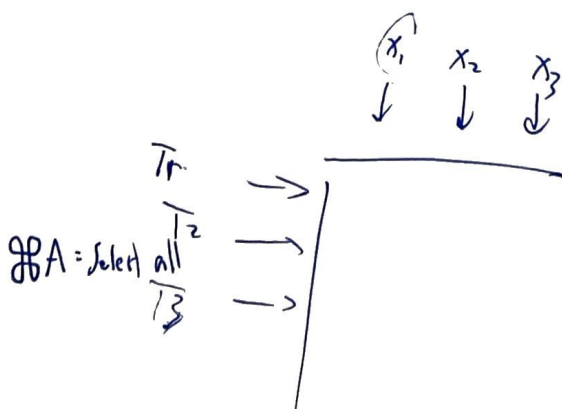
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Name and surname: PABLO MOLLA CHÁRLEZ

Instructions

- Each question has one and only one correct answer. Circle the corresponding letter.
- Grading: correct answer (1 pt), incorrect answer (-0.5 pt), no answer (0 pt).

1. What is the main limitation of traditional pattern mining approaches?
 - A. They are not always sound.
 - B. They are not always complete.
 - ☒ C. They do not easily incorporate user constraints and domain knowledge.
 - D. They cannot handle structured data effectively.
2. What is a key advantage of Declarative pattern Mining?
 - A. It replaces all traditional data mining algorithms.
 - B. It guarantees better runtime performance than specialized algorithms.
 - ☒ C. It allows flexible constraint-driven pattern mining.
 - D. It does not require constraints to be defined.
3. In CP, what is a global constraint?
 - A. A constraint that applies to all datasets.
 - B. A constraint that requires all variables to have the same value.
 - ☒ C. A constraint that captures relationships involving multiple variables.
 - D. A constraint that has no propagation mechanism.
4. In the CP4IM model, what do the decision variables represent?
 - A. The number of frequent itemsets found.
 - B. The number of transactions in the dataset.
 - ☒ C. Whether an item is included in the extracted itemset.
 - D. The confidence of association rules.



5. What is the primary role of constraint propagation in CP solvers?
- A. To add more constraints dynamically.
 - B. To randomly explore the search space.
 - ☒ C. To prune infeasible solutions and reduce the search space.
 - D. To ensure constraints are ignored during search.
6. What does the CLOSEDPATTERN global constraint ensure?
- A. That all extracted itemsets have the same frequency.
 - B. That extracted itemsets are minimal.
 - ☒ C. That extracted itemsets are both frequent and closed.
 - D. That extracted itemsets are maximal.
7. How does CLOSEDPATTERN improve efficiency compared to CP4IM?
- A. By avoiding constraint propagation.
 - B. By ignoring itemset frequency constraints.
 - ☒ C. By using optimal propagators and eliminating auxiliary variables.
 - D. By allowing partial itemsets to be extracted.
8. What does the GENERATOR global constraint ensure?
- A. That itemsets have maximum frequency.
 - ☒ B. That itemsets have no proper subsets with the same cover.
 - C. That itemsets contain the most frequent items.
 - D. That itemsets contain a fixed number of items.
9. Which of the following constraints is used to ensure that an itemset has only frequent subsets?
- A. INFREQSUP
 - B. FREQRARE
 - ☒ C. FREQSUB
 - D. CONFIDENT
10. In the context of the FREQRARE global constraint, what is the role of the minimum item support (MIS)?
- A. It sets a threshold below which itemsets are considered infrequent
 - ☒ B. It sets a threshold for the minimum frequency of each item in an itemset
 - C. It defines the maximum frequency of an itemset in the dataset
 - D. It calculates the support value for itemsets across the dataset