C5-R4: DATA WAREHOUSING AND DATA MINING

NOTE:

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.

a) Differentiate between OLAP and OLTP.

b) Differentiate between Classification and clustering.

c) Define Composite Aggregates with an example.

d) What are decision trees?

e) Describe the types of situations that produce sparse or dense data cubes.

f) What is Concept Hierarchy? Describe why Concept Hierarchies are useful in data mining?

g) What is the use of Regression?

(7x4)

2.

a) What are the similarities and the differences between Star schema and snowflake schema? State their advantages and disadvantages.

b) What is Data generalization? Discuss basic principle of Attribute Oriented Indication.

c) Discuss distributive, algebraic and holistic measures.

(8+7+3)

3.

a) What is metadata? Explain.

b) What are data marts? How they are different from traditional data warehouses?

c) What is multidimensional data model? Explain.

(6+6+6)

4.

a) How multilevel association rules can be mined efficiently using concept hierarchy?

b) What is the purpose of Apriori Algorithm?

c) List out the OLAP operations in multidimensional data model.

(6+6+6)

5.

a) Compare the advantages and disadvantages of eager classification versus lazy classification.

b) Briefly describe the classification processes using genetic algorithms, rough sets and fuzzy sets.

(9+9)

6.

a) Briefly describe the clustering methods. Give examples in each case.

b) Briefly discuss the data smoothing techniques.

(12+6)

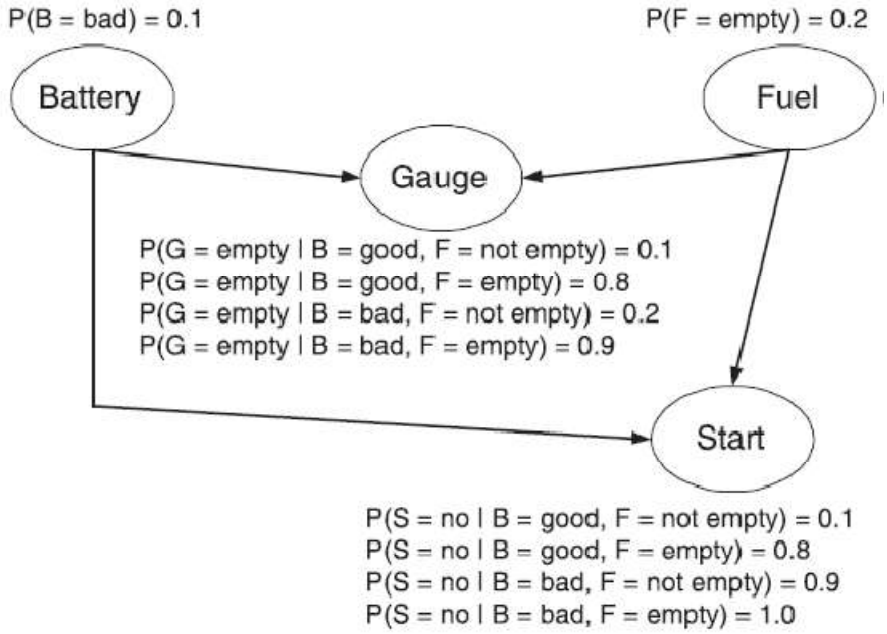
7.

a) Given then Bayesian network shown in below figure, compute the following probabilities:

i) P(B=good, F=empty, G=empty, S=yes)

iii) P(B=bad, F=empty, G=not empty, S=no)

iii) Given that the battery is bad, computer the probability that car will start



b) Write a short note on web usage mining.

c) What is time series database?

(8+6+4)