

Time: 3 Hours

Max. Marks: 70

*Answer any FIVE Questions  
All Questions carry equal marks*

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1. (a) List and explain data mining task primitives.  
(b) How to measure the central tendency of data?  
(c) Describe data cleaning process.

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2. (a) Explain OLAP operations in the multi-dimensional data model.  
(b) Discuss star-cubing algorithm.

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3. (a) Consider the following table to find frequent item sets using vertical data format. Support threshold 30%

T <sub>id</sub>	List of items
T <sub>01</sub>	Milk, biscuits, surf powder, teabags
T <sub>02</sub>	Teabags, sugar, soap
T <sub>03</sub>	Milk, sugar, bread, soap
T <sub>04</sub>	Bread, teabags, biscuits
T <sub>05</sub>	Chocolates, milk, biscuits
T <sub>06</sub>	Milk, teabags, bread
T <sub>07</sub>	Bread, biscuits, chocolate
T <sub>08</sub>	Milk, surf powder, bread

- (b) How to mine multilevel association rules? Discuss

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4. (a) Explain classification by association rule analysis.  
(b) How does a Bayesian belief network learn?  
(c) What is the necessity of tree pruning in decision tree induction?

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5. (a) Discuss chameleon algorithm for clustering.  
(b) Describe model-based clustering methods briefly.

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6. (a) What is multirelational data mining?  
(b) Discuss mining customers' networks for viral marketing.  
(c) Describe Hoeffding Tree algorithm.

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7. (a) What is a multimedia database? Explain multi-dimensional analysis of multimedia data.  
  
(b) Discuss the basic measures for text retrieval.  
(c) Describe DOM structure of a web page.

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8. Explain the social impacts of data mining in detail.)