

| <i>Trans ID</i> | <i>Items Purchased Sold</i> |
|-----------------|-----------------------------|
| 10 | I1, I2, I4 |
| 20 | I1, I7 |
| 30 | I7, I5 |
| 40 | I1, I2, I5 |
| 50 | I6, I4 |
| 60 | I6 |
| 70 | I6, I7 |
| 80 | I1, I2, I3, I4 |
| 90 | I3, I5 |
| 00 | I1, I2 |

- (c) Define the Association rule mining. How market basket analysis forms the association rules? Discuss basic concepts.

3 Attempt any **four** : **4×5=20**

- (a) What are classification rules and how are decision trees related to them ?
- (b) What is data classification? How it is differ than prediction ?
- (c) Describe the **ID3** algorithm of the decision tree construction. Why is it unsuitable for data mining applications?
- (d) How hypothesis testing and refinement task can be done in datamining using gentic algorithm.
- (e) Describe neural networks techniques for data mining. What are the main difficulties in using these techniques ?
- (f) What is Bayesian classification ? How it classifies the Input data ?

- 4** Attempt any **two** parts : **2×10=20**
- (a) How does clustering differ from classification?
 - (b) What is supervised and unsupervised learning ?
Why clustering is known as unsupervised learning ?
 - (c) Describe the genetic algorithms as data mining techniques. What are the main difficulties in using these techniques ?
- 5** Attempt any **two** parts : **2×10=20**
- (a) What is backpropagation Neural Network topology? How it is used in classification?
 - (b) Compare hierarchical clustering and non hierarchical clustering algorithm. Explain the advantages and disadvantages over each other.
 - (c) Write differences between the Nearest Neighbour Data Mining Techniques and Clustering.
-