

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**M.Tech., Winter 2017 – 18 Examination**

**Semester: 2**  
**Subject Code: 03205180**  
**Subject Name: Data Mining & Warehousing**

**Date: 12/01/2018**  
**Time: 02:00 pm to 04:30 pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1** A) Explain KDD Process with diagram. (05)  
 B) List out the difference between OLTP and OLAP. (05)  
 C) Explain the issues regarding classification and prediction. (05)

- Q.2 Answer the following questions.** (Attempt any three) (Each five mark) (15)  
 A) Explain the OLAP operations in multidimensional model.  
 B) Use the two methods below to normalize the following group of data:  
 200, 300, 400, 600, 1000  
     a. min-max normalization by setting min = 0 and max = 1  
     b. z-score normalization  
 C) Write short note on Back Propagation Algorithm.  
 D) What do you mean by text mining? Describe various issues involved in it.

- Q.3** A) Explain any four Major Issues in Data Mining. (07)  
 B) List all of the strong association rules (with support  $s$  and confidence  $c$ ) in the following database (08)  
 using Apriori Algorithm matching the following meta-rule, where  $X$  is a variable representing customers, and item  $i$  denotes variables representing items (e.g., "A", "B", etc.)  $\forall x \in$  transaction,  $\text{buys}(X, \text{item1}) \wedge \text{buys}(X, \text{item2}) \Rightarrow \text{buys}(X, \text{item3}) [s, c]$ .  
 Take minimum support count = 60% and min conf = 80%

TID	Items
T100	{M, O, N, K, E, Y}
T200	{D, O, N, K, E, Y}
T300	{M, A, K, E}
T400	{M, U, C, K, Y}
T500	{C, O, K, I, E}

**OR**

- B) Define multilevel association rules. With suitable example explain various methods to mine them. (08)

- Q.4** A) Explain AGNES and DIANA hierarchical clustering methods. (07)

**OR**

- A) Explain the k-means Clustering algorithm. (07)  
 B) Answer the Following Questions. (08)  
 i) List out the Data Mining Task Primitives. (2)  
 ii) Explain the Three-tier data warehouse architecture with diagram. (6)