

**QP Code :15195**

**(3Hours)**

**Total Marks : 100**

- N. B. :** (1) Question No.1 is compulsory.  
 (2) Answer any **four** out of the remaining questions.  
 (3) Answer to **sub** questions must be **written** together.

1. (a) What are the different characteristics of a Data Warehouse? **5**  
 (b) For a Supermarket Chain consider the following dimensions, namely **5**  
 Product, store , time, promotion. The schema contains a central fact table,  
 sales facts with three measures unit\_sales, dollars\_sales and dollar\_cost.  
 Design star schema for this application.  
 (c) Explain Web usage mining. **5**  
 (d) Illustrate how the supermarket can use clustering methods to improve sales. **5**
2. Define the following terms :— **20**  
 (a) Dimension Tables  
 (b) Snowflake Schema  
 (c) Web Structure Mining  
 (d) Supervised learning
3. (a) Explain Hierarchical Clustering methods. **10**  
 (b) Explain the Page Rank algorithm. **10**
4. (a) Describe the following OLAP operations using an example: **10**  
 (1) Slice  
 (2) Dice  
 (3) Rollup  
 (4) Drill Down  
 (5) Pivot  
 (b) Consider the following transaction database: **10**

TID	Items
01	A,B,C,D
02	A,B,C,D,E,G
03	A.C.G.H.K
04	B,C,D,E,K
05	D,E,F,H,L
06	A,B,C,D,L
07	B,I,E,K,L
08	A,B,D,E,K
09	A,E,F,H,L
10	B,C,D,F

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