

**M. SC. (I.T.) SEM. – III (C.B.C.S. COURSE) (2015 COURSE) :**  
**SUMMER - 2018**

**SUBJECT : DATA WAREHOUSING & DATA MINING**

Day : **Thursday**  
Date : **31/05/2018**

**S-2018-1036**

Time : **02.30 pm to 05.30 pm**  
Max. Marks : 60

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**N.B.**

- 1) Answer any **FIVE** questions out of **SEVEN** questions.
  - 2) All questions carry **EQUAL** marks.
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- Q.1** Suppose that a data warehouse for big university consists of the following four dimensions: student, course, semester and instructor and two measures count and average grade. When at the lowest conceptual level (e.g. for a given student, course, semester and instructor combination) the average grade measure stores the actual course grade of the student. At higher conceptual levels, average grade stores the average grade for the given combination.
- i) Draw a snowflake schema diagram for the data warehouse.
  - ii) Starting with the base cuboid (student, course, semesters, instructor) what specific OLAP operations (e.g. roll –up from semester to year) should one perform in order to list the average grade of CS courses for each big university student.
  - iii) If each dimension has five levels (including all) such as “student < major < status < university < all”, how many cuboids will this cube contain (including the base and apex cuboids)?
- Q.2** What is a data model? Explain the different types of data model.
- Q.3** List out the difference between OLAP and OLTP with example.
- Q.4** What is data mining? What are the benefits and issues related to data mining?
- Q.5** What is association rule mining? Explain two association rule algorithm.
- Q.6** What are different indexing technique? Explain with suitable example.
- Q.7** Define ETL? What are the various options association with ETL?

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