Reg No.									

MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of Manipal University)
MANIPAL-576104

SEVENTH SEMESTER B.TECH..(CSE) DEGREE END SEMESTER EXAMINATION
NOV-DEC 2014
BUSINESS INTELLIGENCE AND ITS APPLICATIONS (CSE 437)
DATE: 26-11-2014

TIME: 3 HOURS MAX.MARKS: 50

Instructions to Candidates

- Answer **any five** full questions.

1A. Define Business Intelligence. Explain briefly different types of data.
1B. Explain OEM with help of a neat diagram.
1C. Explain the different OLAP architecture.
1D. Draw a neat diagram of the evolution of business intelligence. (2+2+3+3)

2A. What constitutes a data warehouse? Support your answer with the help of neat diagram.
2B. Define data quality and data profiling. How to conduct data profiling.
2C. List the steps to convert ER diagram to Dimensional model. (5+4+1)

3A. Describe logical data model.
3B. Draw the ER model for the following: You have gotten a job planning databases for the European Union. Your first on job assignment is to help the various countries maintain information about their inhabitants.

• In each country, there are provinces, which contain towns. There cannot be two provinces with the same name in a single country. Similarly, there cannot be two towns with the same name in a single province. There is at least one province in each country and at least one town in each province.
• People live in towns. Men and women work in a town. Children learn in a school in a town.
• A person can be a man, a woman, or a child, and has a first-name, last-name, id, and birthday. Children are any people under the age of 18.

• A man can be married to a woman (polygamy is not allowed, i.e., one man can be married only to one woman). Although the Pope strongly disapproves, divorce, and subsequent remarriage, is possible.
• For each marriage, store the date of the marriage and information about who are the children of the married couple. Note that the parents of a child were married at the time of the child's birth.
3C. How to ensure metric relevance to business using SMART test. Explain KPI.
(2+4+4)

4. Suppose that a data warehouse consists of the three dimensions **time, doctor,** and **patient**, and the two measures **count** and **charge**, where charge is the fee that a doctor charges a patient for a visit. Dimension time contains following entries time_key, day, day_of_week, month, quarter, year. Dimension doctor contains following entries doctor_id, doctor_name, phone#, address, sex. Dimension patient contains following entries patient_id, patient_name, phone#, sex, description, address.

i. Draw the star schema for the above problem.
ii. Starting with the base cuboid [**day, doctor, patient**], what specific OLAP operations should be performed in order to list the total fee collected by each doctor in 2004?
iii. Draw the snowflake schema.
iv. Identify the different types of facts in star schema.
v. Identify the RCD and SCD in star schema and explain how to tackle them.

(5*2 = 10)

5A. What is a dimension hierarchy? List the attributes which describe the dimension table.
5B. Explain the term i) Degenerate dimension ii) Role Playing dimension
5C. Differentiate between tabular reports and list reports. List the critical focus areas of enterprise reporting.
5D. How will the airlines company retain its customers and increase its customer satisfaction rate. Write the balanced scoreboard for the above requirement.
(2+2+2+4)
6A. What are the different types of containers used in control flow of SSIS? Explain any two.
6B. What is an ActiveX script with respect to SSIS?
6C. Explain fuzzy grouping in data flow transformation with respect to SSIS.
6D. Write the steps for creating dashboards. (2+2+2+4)