

MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent unit of MAHE, Manipal)

V SEMESTER B.TECH. (COMPUTER SCIENCE AND ENGINEERING) END SEMESTER EXAMINATIONS, NOVEMBER 2018

SUBJECT: BUSINESS INTELLIGENCE AND ITS APPLICATIONS [CSE 4024]

REVISED CREDIT SYSTEM (26/11/2018)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

✤ Answer ALL the questions.

✤ Missing data may be suitable assumed.

| 1A. | Compare Online Transaction Processing (OLTP) with Online Analytical Processing (OLAP) | 4 |
|--------------|---|---|
| 1 B. | Explain different aspects of supply chain analytics? | 4 |
| 1C. | How to manage semi-structured data? | 2 |
| 2A. | Explain William H. Inmon's approach to data warehousing. | 2 |
| 2 B . | Differentiate between federated databases and data warehouse. | 3 |
| 2C. | What are the visible components of designer window when working on a SQL Server Integration Services (SSIS) Project? Explain each of them. | 5 |
| 3A. | Briefly explain the working of SQL execute task. | 2 |
| 3B. | What are disadvantages of ActiveX script task? | 3 |
| 3C. | Construct an ER diagram and Star schema for the following scenario: There is a house which operates from its offices spread across the country. For their | |

5C. Construct an ER diagram and Star schema for the following scenario: There is a house which operates from its offices spread across the country. For their convenience, the publishing house classifies the country into four regions (North, South, East, and West). Each of their offices belongs to one of the regions. Several authors are in contract with the publishing house for the publication of their work. An author can be associated with more than one publishing house. An author can be in contract for publication of one or more of their works (books), either with the same publishing house or multiple publishing houses. But a particular book by an author can be published by only one publishing house. It can also happen that the book has been co-authored.

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- 4A. Suppose that a data warehouse for *Big University* consists of the four dimensions student, course, semester, and instructor, and two measures count and avg grade. At the lowest conceptual level (e.g., for a given student, course, semester, and instructor combination), the *avg* grade measure stores the actual course grade of the student. At higher conceptual levels, *avg_grade* stores the average grade for the given combination. Draw a snowflake schema diagram for the data warehouse.
- **4B**. Starting with the base cuboid [student, course, semester, instructor], what specific OLAP operations (e.g., roll-up from semester to year) should you perform in order to list the average grade of CS courses for each Big University student. (Refer 4A)
- If each dimension has five levels (including all), such as "student < major < status **4C.** *<university < all*", how many cuboids will this cube contain (including the base and apex cuboids)? (Refer 4A and 4B)
- Explain the four components of metric data: Subject, Stratum, Quantum, and 5A. 4 Application. Use an example to explain your answer. 2
- **5B**. Explain any four critical focus areas of enterprise reporting.
- 5C. Explain four steps for creating dashboards.

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