MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL (A constituent unit of MAHE, Manipal)

Time: 3 Hours

V SEMESTER B.TECH. COMPUTER SCIENCE AND ENGINEERING MAKEUP EXAMINATIONS, DEC 2019

SUBJECT: BUSINESS INTELLIGENCE AND ITS APPLICATIONS (CSE 4024)

REVISED CREDIT SYSTEM (27-12-2019)

	Instructions to Candidates:	
	 Answer ALL the questions. 	
	 Missing data may be suitably assumed. 	
1A.	Explain briefly different types of data.	3M
1B.	Explain the different OLAP architecture.	3M
1C.	Draw a neat diagram of the evolution of business intelligence. Describe any six OLAP operations on multidimensional data. Give example for each.	4M
2A.	Give the difference between ER modelling and Dimensional modelling.	3M
2B.	What constitutes a data warehouse? Support your answer with the help of neat diagram.	4 M
2C.	Explain the following:a) Market Analyticsb) Dimension hierarchy and its attributesc) BI for Process Improvement and Performance Improvement	3M
3A.	UPS prides itself on having up-to-date information on the processing and current location of each shipped item. To do this, UPS relies on a company-wide information system. Shipped items are the heart of the UPS product tracking information system. Shipped items can be characterized by item number (unique), weight, dimensions,	4M

uniqueID, and address. Shipped items make their way to their destination via one or more standard UPS transportation events (i.e., flights, truck deliveries). These transportation events are characterized by a unique scheduleNumber, a type (e.g, flight, truck), and a deliveryRoute. Draw an Entity Relationship diagram that captures this information about the UPS system.
3B. How to ensure metric relevance to business using SMART test. Explain KPI.
4M

insurance amount, destination, and final delivery date. Shipped items are received into the UPS system at a single retail center. Retail centers are characterized by their type,

3C. What are the different methods of loading dimension table? How is an ODS different **2M** from an enterprise data warehouse.

MAX. MARKS: 50

- 4A. 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.
- 4B. What is a balanced scorecard? How will the airlines company retain its customers and increase its customer satisfaction rate? Write the balanced scoreboard for the above requirement.
- 5A. What are the visible components of designer window when working on a SSIS project? 5M Explain each of them.

5B.	What is an ActiveX script with respect to SSIS?	3M
5C.	Differentiate between tabular reports and list reports.	2M
