Reg. No. :

Question Paper Code: U8307

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Professional Elective

Computer Science and Business system

21ITV307 DATAWAREHOUSING

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks
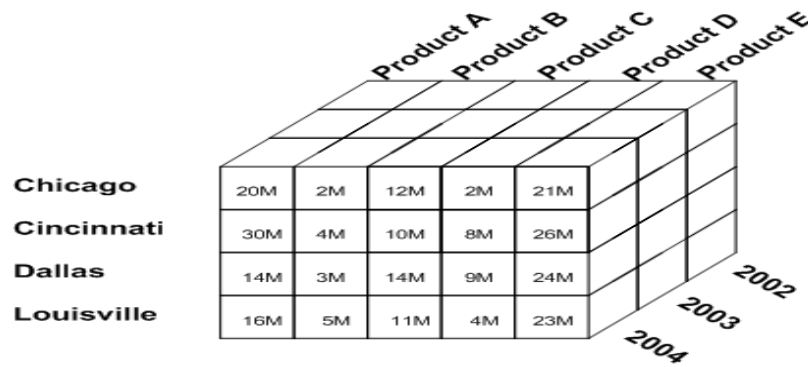
Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Define a Data Warehouse with diagram.	CO1- U
2.	What is virtual warehouse?	CO1- U
3.	List out the OLAP operations in multidimensional data model.	CO1 -U
4.	Differentiate ETL with ELT.	CO1 -U
5.	Write short notes on Meta data.	CO2 -App
6.	Apply the concept hierarchy for the dimension location (India , Pakistan, Delhi , Islamabad).	CO2 -App
7.	How is Data warehouse analysis helpful in business process?	CO1 -U
8.	Define star schema and its types.	CO1 -U
9.	What are the Functions of Warehouse Manager?	CO1 -U
10.	Discuss about Tuning?	CO1 -U

PART – B (5 x 16= 80 Marks)

11. (a) Describe Data warehouse architecture in detail.   CO1 -U   (16)

Or

(b) Explain any four operational applications from which data will be extracted and fed into the data warehouse of an airline.   CO1 -U   (16)

12. (a) Find i) Slice ii) Dice iii) Pivot from the below diagram.   CO2 -App   (16)

Or

(b) Suppose that a data warehouse for Big University consists of the   CO2 -App   (16)
following four dimensions: student, course, semester, and instructor,
and two measures count and avg_grade. When 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.

   (i)   Draw a three multi-dimensional data model diagram for the
         data warehouse.
   (ii) Starting with the base cuboid [student, course, semester,
         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.

13. (a) Discuss briefly about the Horizontal and Vertical Parallelism with   CO1 -U   (16)
suitable Examples.

Or

(b) Explain the types of Data Mart? Why we need to create a data mart?   CO1 -U   (16)
Reasons.

14. (a) Design a data warehouse for a regional weather bureau. The weather   CO2 -App   (16)
bureau has about 1,000 probes, which are scattered throughout
various land and ocean locations in the region to collect basic
weather data, including air pressure, temperature, and precipitation at
each hour. All data are sent to the central station, which has collected
such data for over 10 years. Your design should facilitate efficient
querying and on-line Analytical processing, and derive general
weather patterns in multidimensional space.

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<center>Or</center>

(b)   Apply the Snowflake schemas for a BANKING.COM in Data-warehouse.   CO2 -App   (16)

15. (a)   What is Testing? Explain in it detail.   CO1 -U   (16)

<center>Or</center>

(b)   Discuss about the Query Data warehouse Architecture with the suitable diagram.   CO1 -U   (16)

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