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**Question Paper Code : 20404**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth Semester

Computer Science and Design

CCS 341 — DATA WAREHOUSING

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(Common to : Computer Science and Engineering/Computer Science and Engineering (Artificial Intelligence and Machine Learning/Computer Science and Engineering (Cyber Security)/Computer and Communication Engineering/Artificial Intelligence and Data Science/Computer Science and Business Systems and Information Technology)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is data warehouse? List out the benefits of Data warehousing.
2. How is data warehouse different from a database? Identify the similarity.
3. Compare OLTP and OLAP Systems.
4. List out the views in the design of a data warehouse.
5. Differentiate metadata and data mart.
6. Propose the features of Metadata repository in data warehousing.
7. Define star schema.
8. What is snowflake schema?
9. Define Query Manager.
10. What are the various sources for data warehouse?

PART B — (5 × 13 = 65 marks)

11. (a) Explain with three-tier architecture diagram and give the steps for design and construction of Data warehouses.

Or

- (b) Describe the technologies used to improve the performance in data warehouse environment. Mention a few alternate technologies also.

12. (a) Explain the different types of OLAP tools. What type of OLAP tool is best suited for datasets that require both detailed and summarized analysis?

Or

- (b) Diagrammatically illustrate and describe the architecture of MOLAP and ROLAP. Find the major difference between MOLAP and ROLAP.

13. (a) Illustrate the various classification of Meta data with suitable examples and explain the same.

Or

- (b) Elaborate in detail about the various issues to be considered when designing and implementing a data-warehousing environment.

14. (a) Describe in brief about various schemas in multidimensional data model.

Or

- (b) Discuss the various types of database parallelism with suitable examples.

15. (a) Discuss the various access types to the data stored in a data warehouse and consider the data types of online shopping.

Or

- (b) Explain how to use a familiar approach help reduce training costs associated with building a query and reporting environment with suitable example.

PART C — (1 × 15 = 15 marks)

16. (a) Discuss in detail about the case study of Data Warehouse storage and accessibility for the Government of Tamilnadu for any two schemes in practice.

Or

- (b) Assume you are working as a data analyst for a retail company. The company has a data warehouse that stores information about customers, products, salespersons, and sales time. The data warehouse has three measures: sales amount (in rupees) VAT (in rupees), and payment type (in rupees). You have been ask to analyze the sales data to identify the top-selling products in each region. Which schema would you use to model the data warehouse? Explain your reasoning.