Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 50424

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024.

Fifth/Sixth Semester

Computer Science and Engineering

CCS 341– DATA WAREHOUSING

(Common to : Computer Science and Design/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/Information Technology)

(Regulations 2021)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define a data warehouse. What are its key components?

2. Compare and contrast an operational database with a data warehouse.

3. What does ETL stand for, and how does it differ from ELT?

4. List the differences between OLAP and OLTP.

5. How to choose data partitioning strategy for Data warehouse?

6. What is data mart?

7. Compare and Contrast star schema and a snowflake schema.

8. What is Data Cube?

9. Name two types of Data Warehousing System Managers and their roles.

10. What is the function of the Load Manager in data warehousing?

PART B — (5 × 13 = 65 marks)

11. (a)   Explain the three-tier data warehouse architecture and its significance.

Or

(b)   Compare and contrast Autonomous Data Warehouses with Snowflake
data warehousing solutions.

12. (a) Explain the characteristics of OLAP and its operations.

Or

(b) Discuss the ETL process in data warehousing.

13. (a) Describe the process of designing a cost-effective data mart.

Or

(b) Explain the role of meta data in a data warehouse. Discuss the challenges associated with metadata management.

14. (a) Detail the process of dimensional modeling and its importance in data warehousing. Discuss the advantages of using a multi-dimensional data model.

Or

(b) Write notes on the following
   (i) Database parallelism and   (7)
   (ii) Data warehouse Tools.   (6)

15. (a) Explain the concept of data warehouse tuning and testing.

Or

(b) Discuss the roles of system and process managers in a data warehousing environment.

PART C — (1 × 15 = 15 marks)

16. (a) Outline a key strategy for ensuring a data warehousing solution remains scalable as a tech startup grows. Highlight one specific technology or approach that could be utilized.

Or

(b) Describe how modernizing the data warehouse architecture could improve data analytics and decision-making for a global retail company. Focus on one major limitation of the old system and how a modern solution addresses it.