

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Seventh Semester

Computer Science and Engineering

CCS341 – Data Warehousing

(Common to Fifth Semester Artificial Intelligence and Data Science)

Regulations - 2021

Duration: 3 Hrs

Maximum: 100 Marks

PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	What is a Data Warehouse?	RE	1	2
2.	How does an operational database differ from a data warehouse?	RE	1	2
3.	Define ETL.	RE	2	2
4.	Classify the types of data warehouses.	UN	2	2
5.	Define metadata.	RE	3	2
6.	What is the purpose of a metadata repository in a data warehouse?	RE	3	2
7.	Define snowflake schema.	RE	4	2
8.	What is fact constellation schema?	RE	4	2
9.	Illustrate the role of system manager in data warehousing.	UN	5	2
10.	Outline the role of data warehouse manager?	UN	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Describe the three-tier data warehouse architecture in detail. How does each layer contribute to the data warehouse's functionality, and why is this architecture beneficial?	AN	1	13
	Or			
	b Analyze the differences between an autonomous data warehouse and a Snowflake data warehouse. Compare their architectures, features, and use cases in terms of scalability, cost, and performance.	AN	1	13
12.	a Explain the ETL process in detail. How does it contribute to the effective functioning of a data warehouse, and what challenges can arise during its implementation?	UN	2	13
	Or			
	b Compare and contrast the different types of OLAP systems: ROLAP AND MOLAP. Discuss their architectures, advantages, and use cases.	UN	2	13
13.	a Analyze the challenges involved in metadata management. Discuss issues such as metadata consistency, integration, governance, and scalability in large data warehouse environments.	UN	3	13
	Or			

	b	Design a data mart for a marketing department in a retail company. Discuss the steps involved in designing a data mart, including partitioning strategies (vertical and horizontal), normalization, and considerations for cost-effective implementation.	CR	3	13
14.	a	Explain in detail about multidimensional database, data mart and data cube. Explain schemas for multi-dimensional database.	UN	4	13
		Or			
	b	Explain in detail about types of data base parallelism.	AP	4	13
15.	a	Explain the role of any three data warehousing system manager in maintaining the smooth operation of a data warehouse.	AP	5	13
		Or			
	b	Explain the responsibilities of the Data Warehousing Process Managers. How do their functions interrelate to ensure data consistency, accuracy, and accessibility?	AN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Design a data warehouse model for a finance company, explaining the steps involved in the data warehouse design and modeling process, including ETL, delivery process, and the role of OLAP in analytics.	CR	2	15
		Or			
	b	A data warehouse can be modeled by either a star schema or a snowflake schema. Briefly describe the similarities and the differences of the two models, and then analyze their advantages and disadvantages with regard to one another with example.	CR	4	15