PART B

Q. No	Questions	M	BT	CO
1.	Describe the following OQL Concepts: Database entry point, path Expression, Iterator variable, Named Queries, Grouping operator and Qualifiers.	10	L2	CO2
2.	a. Discuss the general principles behind the C++ binding of the ODMG standard. b. List and differentiate all 3 types of Literals in ODMG object model	10	L2	CO2
3.	Write the Steps needed to Map the EER diagrams (all 8 steps) in Figures 1 into relational schemas. Justify your choice of mapping options. Mention any assumptions you make.	15 (5 +5+ 5)	L4	CO4
4.	Consider the LIBRARY relational database schema in Figure 2 Create an XML schema document (xsd) that corresponds to this database schema. Write the hierarchical structure. Mention any assumptions you make	15(5 +5+ 5)	L4	CO4

PART B

Q. No	Questions	M	BT	CO
1.	Consider the following relations: BOOKS(Book#, Primary_author, Topic, Total_stock, $price) BOOKSTORE(Store#, City, State, Zip, Inventory_value) STOCK(Store#, Book#, Qty) Total_stock is the total number of books in stock and Inventory_value is the total inventory value for the store in dollars. a) Give an example of two simple predicates that would be meaningful for the BOOKSTORE relation for horizontal partitioning. b) How would a derived horizontal partitioning of STOCK be defined based on the partitioning of BOOKSTORE? c) Show predicates by which BOOKS may be horizontally partitioned by topic. d) Show how the STOCK may be further partitioned from the partitions in (b) by adding the predicates in (c). Explain each of the fragmentation with suitable tuples or data.	10	L3	CO3
2.	Discuss the semijoin method for executing an equijoin of two files located at different sites. Under what conditions is an equijoin strategy efficient?	10	L2	CO2
3.	For the following concepts in information integration, identify its purpose and operations, with neat diagram: - 1. Federated Database Systems. 2. Data Warehouses. 3. Mediators.	15	L2	CO2
4.	Show how the following updates, if applied in sequence, would change the contents of the bitemporal EMP_BT relation in Figure 1. For each update, state whether it is a retroactive or proactive update. a. On 2004-03-10,17:30:00, the salary of Narayan is updated to 40000, effective	15(5 +5+ 5)	L4	CO4

on 2004-03-01.

b. On 2003-07-30,08:31:00, the salary of Smith was corrected to show that it should have been entered as 31000 (instead of 30000 as shown), effective on 2003-06-01.

c. On 2004-03-18,08:31:00, the database was changed to indicate that Narayan was leaving the company (that is, logically deleted) effective on 2004-03-31.

d. On 2004-04-20,14:07:33, the database was changed to indicate the hiring of a new employee called Johnson, with the tuple < 'Johnson', '334455667', 1, NULL > effective on 2004-04-20.

e. On 2004-04-28,12:54:02, the database was changed to indicate that Wong was leaving the company (that is, logically deleted) effective on 2004-06-01.

f. On 2004-05-05,13:07:33, the database was changed to indicate the rehiring of Brown, with the same department and supervisor but with salary 35000 effective on 2004-05-01.

DEPARTMENT OF COMPUTER
Program: M.Tech. in Computer Science & Engineering

Date	14 May 2024	Maximum Marks	50
Course Code	22MCE13	Duration	120 Min
Sem	I Semester	TEST-3	

ADVANCES IN DATA BASE MANAGEMENT & MINING

PART A

Q. No	Questions	M	BT	CO
1.	List and explain different types of multidimensional Schema model.	10	L2	CO2
2.	List and explain different types of database Views	10	L1	CO1
3.	With relevant diagrams explain Roll up, Drill down, Slicing and Dicing in OLAP Operations.	10	L2	CO2
4.	Differentiate the following with examples. 1. Document Driven and Data Driven 2. Communication Driven and Knowledge Driven	10	L3	CO3
5.	Write the Steps for the Frequency Pattern tree construction. For the following transaction construct FP-Tree and the Header Table.	10	L4	CO4

TID	Item Bought
100	f,a,c,d,g,i,m,p
200	a,b,c,f,l,m,o
300	b,f,h,j,o
400	b,c,k,s,p
500	a,f,c,e,l,p,m,n