



## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

### Program : M.Tech. in Computer Science & Engineering

Date	27 March 2023	Maximum Marks	50
Course Code	22MCE13	Duration	120 Min
Sem	I Semester	CIE -1 ( QUIZ-1 & TEST-1)	
ADVANCES IN DATA BASE MANAGEMENT & MINING			

#### PART A

Q. No.	Questions	M	BT	CO
1.	What are the significance of the unique identity in Object oriented database system and write its properties ?	2	L2	CO2
2.	List the 5 Types of Constructors in OODB.	2	L2	CO2
3.	Differentiate between Transient collection, Persistent collection and Extents in OODB.	2	L2	CO2
4.	List any 6 Data Model. Identify how are they different?	2	L1	CO1
5.	Identify 3 main types of XML documents.	2	L1	CO1

#### PART B

Q. No	Questions	M	BT	CO
1.	Identify the operations of the built in interfaces of collection objects: 1. cardinality() 2. is_empty() 3. create_iterator() 4. is_superset_of () 5. contains_element()	10	L2	CO2
2.	In the ER schema diagram for a simplified UNIVERSITY database consider the root as the "COURSE" as shown in the Fig B21. Write the Complete XML schema document with 'COURSE' as the root and also with 'STUDENT' as the root as specified in Fig B22	10	L2	CO2
3.	Considering any database of your choice explain the 7 steps in ER to Relational mapping.	10	L3	CO3
4.	For the above chosen database , explain the mapping from EER to Relational mapping.	10	L4	CO4
5.	Write the XML queries for the following statement below, consider company DB. 1. Write the query to retrieve the first and last names of employees who earn more than 70000. Such that the variable \$x is bound to each employee Name element that is a child of an employee element, but only for employee elements that satisfy the qualifier that their employee Salary is greater than 70000. 2. Write a XML query to illustrates how a join operation can be performed by having more than one variable. Here, the \$x variable is bound to each projectWorker element that is a child of project number 5, whereas the \$y variable is bound to each employee element. The join condition matches SSN values in order to retrieve the employee names.	5	L4	CO4
6	Write the Different XPath expression on XML documents that follow XML scheme file Company.	5	L4	CO4

Hierarchical (tree) view with 'COURSE' as the root

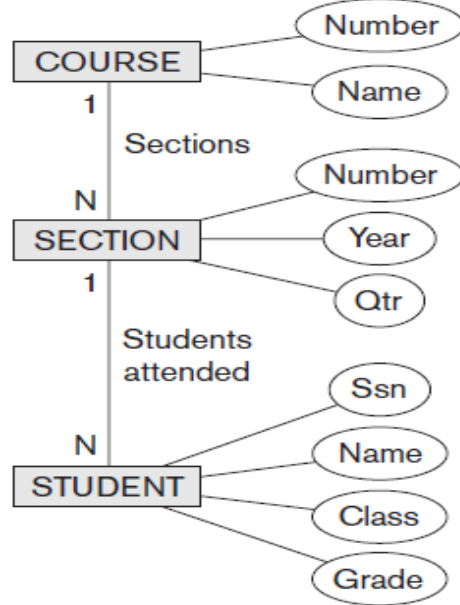


Fig B21

Hierarchical (tree) view with 'STUDENT' as root

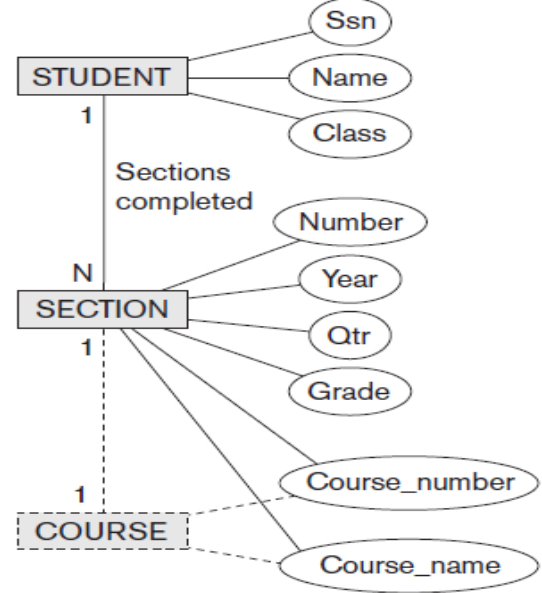


Fig B22

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max Marks	4	26	10	20	4	26	10	20	-	-

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RVCE22MCE004

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### Program: M.Tech. in Computer Science & Engineering

Date	27 April 2023	Maximum Marks	50
Course Code	22MCE13	Duration	120 Min
Sem	1 Semester	CIE -2( QUIZ-II & TEST-II)	

### ADVANCES IN DATA BASE MANAGEMENT & MINING

PART A				
Q. No.	Questions	M	BT	CO
1.	List and explain the 3 categories of Data Cube measures.	2	L2	CO2
2.	List 6 Heterogeneity problem in integration information.	2	L2	CO2
3.	Exemplify Mediators in integration information.	2	L2	CO2
4.	Why is Integration information is needed? Specify the reasons.	2	L1	CO1
5.	List the distributed Join problem.	2	L1	CO1

PART B				
Q. No	Questions	M	BT	CO
1.	Identify three ways of data cube materialization in a cuboid. List out the factors encountered during materialization. Differentiate between Iceberg cube and Shell cube.	10	L2	CO2
2.	a. Draw and explain the recommended Data warehouse Systems. b. Write any 6 comparisons of OLAP and OLPT.	5+5	L1	CO1
3.	Differentiate between the approaches used in the constructing the data in the warehouse with examples for each approach. (Write the Datawarehouse arrangement)	10	L3	CO3
4.	Differentiate between the following with examples: 1. Join indexing and bit map indexing. 2. Star and snowflake schema.	10	L3	CO3
5.	Apply Roll up, Drill down, Slice and Dice, all 4 operations for the following figure 1 below. Perform Roll up on location from city to country, Drill down from Time from quarter to month, Slice for Q1, Dice for Location = ("Toronto" or "Vancouver") and title = ("Q1" or "Q2") and (Item = "Mobile or "Modern"). Explain the same.	10	L4	CO4
<p>Locations (cities)</p> <p>Time (Quarter)</p> <p>Items (types)</p> <p>figure 1</p>				

BT-Blooms Taxonomy, CO-Course Outcomes, M-Marks

Marks Distribution	Particulars		CO1	CO2	CO3	CO4	L1	L2	L3	L4	L5	L6
	Test	Max	4	26	20	10	4	26	20	10	-	-