Academic year 2024-2025 (Odd Sem)

DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

Date	25th November 2024	**Maximum Marks**	10+50
Course Code	CD252IA	**Duration**	20+90 Minutes
Sem	V	Faculty: CNS/PD/SB/HR/PT//PHMNV/SNM	

Database Management Systems (Common to CS, IS, CD, AI & CY)

Sl.No		PART-A	M	BT	CO
1.		Identify two tasks performed by "actors on the scene" and "workers behind the scene" in a database environment. Provide examples of job roles for each category.	2	L3	1
2.		Which data model balances ease of understanding for end users and its implementation on computer systems? Give an example.	2	L3	1
3.		Given the scenario of a Library Management system, Transaction record entity that represents the details of books issued to members can be treated as a weak entity. Justify the statement with reason for weakness.	2	L3	2
4.		Differentiate between multivalued and composite attributes. Give an example representation for each.	2	L2	2
5.		Outline the importance of NULL value. Mention two instances where a value of given attribute can be NULL.	2	L2	1
Sl. No.		**PART-B**	**M**	**BT**	**CO**
1		For a **relationship type** *R* among *n* entity types *E*1, *E*2, ..., *En* mathematically define: *i)* Relationship Set *ii)* Relationship instances Also determine using an example, *iii)* Degree of relationship type *iv)* Relationship as attribute *v)* Role names in Recursive Relationship.	10	L2	1
2	(a)	With the help of a neat diagram, explain the three schema architecture.	06	L2	1
	(b)	Using the above architecture, outline the types of data independence.	04	L2	1
3	(a)	Explain the characteristics of database approach.	06	L2	1
	(b)	Differentiate between the total participation constraint and partial participation constraint. Give example	04	L2	1
4		A Farmer/Consumer Management system needs to be developed. The main objective of this project is to build an application which will help farmers from Indian villages to sell their products to different cities. Farmers wishing to avail the facility can directly register in the system, and sell their product. On the other side, consumers and wholesalers from urban settlements can procure their products from such agricultural colonies. The validity of all such transactions is tabulated for all future references. Requirements could be but not limited to • Upload of the crop to be sold. • Displays a list of the crops and their prices by that farmer. • Ordering any of the produce. • Update logs and transactions on sale. • The quantity and price of all the produce must be known to the farmer at the time of uploading. a) Design an ER diagram for the above requirements. Make suitable assumption wherever required and justify the same explicitly. b) Make suitable assumption to represent all participation types, cardinality ratios. Identify and represent different types of attributes. Justify your answer.	10	L4	2
5		For the above E-R Diagram, Apply the ER to Relational Mapping algorithm to convert ER to Relational Schema. Depict all steps appropriately and justify your answer.	10	L4	2