VR20 Reg. No: | | | | | | | | | | |

VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

III/IV B.Tech. DEGREE EXAMINATION, NOVEMBER - 2024

Fifth Semester

20CS5301/20AI&ML5301 DATABASE MANAGEMENT SYSTEMS

(CSE, CSE(AI&ML))

Time: 3 hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1.	a.	Define Database.	**(CO1 K1)**
	b.	What is meant by trigger?	**(CO1 K2)**
	c.	Write any two commands in DCL.	**(CO1 K2)**
	d.	Define entity.	**(CO2 K1)**
	e.	Differentiate inner join and outer join.	**(CO2 K2)**
	f.	What is normalization?	**(CO3 K1)**
	g.	Write any two unary relational operations.	**(CO2 K2)**
	h.	Define transaction.	**(CO5 K1)**
	i.	List the problems of concurrency control.	**(CO4 K1)**
	j.	What is Granularity?	**(CO4 K2)**

PART-B

4 x 15 = 60M

UNIT-I

2. a. Explain about aggregate functions used in Querying the relational Data? **(CO5 K2) 8M**

   b. Differentiate File Systems Versus Database Management Systems. **(CO5 K4) 7M**

(or)

3. a. Explain about Database System Architecture with neat Diagram. **(CO1 K2) 10M**

   b. Explain about Views with Syntax and Example. **(CO1 K2) 5M**

UNIT-II

4. a. Discuss the importance of high-level data model in the database design. **(CO2 K2) 8M**

   b. Describe weak entity set with an example. **(CO2 K2) 7M**

(or)

5. a. Design ER Diagram which describes the functionalities of online banking system. **(CO2 K3) 7M**

   b. Describe the structural constraints of Entity-Relationship model. **(CO2 K2) 8M**

UNIT-III

6. a. Explain different integrity constraints over relations. **(CO3 K2) 10M**

   b. Explain about Selection, Projection and Set operation in relational Algebrawith examples by considering the following sailors instance Sailors (sid, sname, rating, age). **(CO3 K3) 5M**

(or)

7. a. Given a relation R (A, B, C, D, E, F) having FD's {AB->C, C->D, D->E, F->B, E->F} identify the prime attributes, candidate keys and Non-prime attributes. **(CO3 K3) 7M**

   b. Explain second and third normal forms with examples. **(CO3 K2) 8M**

UNIT-IV

8. a. Explain the properties of transactions. **(CO4 K2) 8M**

   b. Check whether the given schedule S is conflict serializable or not-S: $R_1(A), R_2(A), R_1(B), R_2(B), R_3(B), W_1(A), W_2(B)$. **(CO4 K3) 7M**

(or)

9. a. Explain the ARIES recovery algorithm. **(CO4 K2) 10M**

   b. Elaborate two phase locking protocol. **(CO4 K2) 5M**

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