Total No. of Questions : 4]

SEAT No. :

PC-41

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T.E. (Electronics/E & TC) (Insem)

DATABASE MANAGEMENT

(2019 Pattern) (Semester - I) (304183)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates :

1) ***Solve Q1 or Q2, Q3 or Q4 from following questions.***
2) ***Neat diagrams must be drawn whenever necessary.***
3) ***Figures to right indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Explain overall Database System Structure. **[5]**

b) What is meant by Mapping cardinality? Explain different types of cardinalities for a binary relationship with example. **[5]**

c) Explain any five applications of the database management system. **[5]**

OR

Q2) a) Perform the Natural Join operation on following table i and ii **[5]**

i) Employee

Emp_Id	Name	Dept Name
205	Anjali	Finance
509	Rahul	Sales
289	Ranjit	Finance
545	Priyanka	Sales

ii) Department

Dept_Name	Manager
Finance	Amarjit
Sales	Sandhy
Finance	Saurbhi

P.T.O.

b) Explain the concept of specialization and generalization w.r.t. EER diagram. **[5]**

c) Information about a bank is about customers and their account. Customer has a name, address which consists of house number, area and city and one or more phone numbers. Account has number, type and balance. We need to record customers who own an account. Account can be held individually or jointly. An account cannot exist without a customer. Arrive at an E R diagram. Clearly indicate attributes, keys, the cardinality ratios and participation constraints. **[5]**

Q3) a) Explain in detail any five Codd's rules. **[5]**

b) Explain the DELETE anomaly with an example. How to avoid it? **[5]**

c) Compare BCNF and 3NF with minimum five points of comparison. **[5]**

OR

Q4) a) Differentiate between primary key constraints and foreign key constraints. **[5]**

b) Design following given 1 NF relation into 2NF, 3NF. **[5]**

S_ID	C_ID	S_name	C_name	Grade	Faculty	F_No
1	IS318	Adams	DBM	A	CAM	601
1	IS301	Adams	OS	B	RSP	584
2	IS318	Jones	DBM	A	CAM	601
3	IS318	Smith	DBM	B	CAM	601
4	IS301	Baker	OS	A	RSP	584
4	IS318	Baker	DBM	B	CAM	601

c) What is decomposition? Explain any one desirable property of decomposition with an example? **[5]**

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