[Time: 3 Hrs]   **[Marks: 80]**

Please check whether you have got the right question paper.

N.B: 1. Q. 1 is compulsory.
        2. Solve any three from reaming questions.
        3. Draw neat diagrams wherever necessary.

Q. 1	a) Explain types of users of the database system with suitable example & responsibilities of DBA.	(10)
	b) Explain extended ER features.	(10)
Q. 2	a) Explain types of join with suitable example.	(10)
	b) Explain constraints in SQL.	(10)
Q. 3	a) Explain relational algebra operators.	(10)
	b) What is Log.? Explain Log based recovery.	(10)
Q. 4	a) What is 2PL. Explain 2PL (2- phase) Locking protocol with its types.	(10)
	b) What is trigger? Write syntax and example.	(10)
Q. 5	a) Explain view serializability with suitable examples.	(10)
	b) What is Normalization? Explain 1NF, 2NF and 3NF with suitable is example.	(10)
Q. 6	Write note on **(Any two)**	(20)
	a) Timestamp Based Protocol	
	b) Transaction state diagram	
	c) Functional dependency in dbms	

****

76957

2FC8B81F0F26A74E5132017E088DC094