B.E. Computer Science & Engineering Fourth Semester

CS 403 - Database Management System

P. Pages : 1 **GUG/W/18/1541**

Time : Three Hours * 1 2 1 5 * Max. Marks : 80

Notes : 1. All questions are compulsory.
2. All questions carry equal marks.
3. Due credit will be given to neatness and adequate dimensions.
4. Assume suitable data wherever necessary.
5. Illustrate your answers wherever necessary with the help of neat sketches.

1. a) What is data model? Explain various data models in detail. **8**

b) Draw the ER diagram for library management system. **8**

OR

2. a) Explain levels of data abstraction. **8**

b) Who is DBA? What are the responsibilities of database administrator explain. **8**

3. a) What is an attribute? What are the various types of attribute in designing ER model? **8**

b) What are the basic relational algebra operators? Explain with example. **8**

OR

4. a) Explain extended ER features. **8**

b) Explain the set operations in sql with example. **8**

5. a) Explain Codd's 12 rules. **8**

b) What is normalization? Explain 3NF with example. **8**

OR

6. a) Explain Armstrong's axiom for finding closure. **8**

b) What is an attribute closure? Explain the algorithm for finding attribute closure. **8**

7. a) What are schedules? Explain the types of schedules with example. **8**

b) What is an transaction? Explain the transaction states. **8**

OR

8. a) Explain shadow paging technique. **8**

b) Explain log based recovery. **8**

9. a) Write ROLAP in detail. **8**

b) Discuss spatial databases. **8**

OR

10. Write notes on: **16**

1) Horizontal & vertical fragmentation in distributed system.
2) Data Warehousing.
3) Parallel systems.
4) Web enabled system.

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