

B.E. / B.Tech. Computer Science & Engineering (Model Curriculum) Semester-V
TEE102CS / DATABASE1 - - Database Management System

P. Pages : 2

Time : Three Hours



GUG/S/25/13812

Max. Marks : 80

- Notes :
1. All questions carry equal marks.
 2. Illustrate your answers wherever necessary with the help of neat sketches.
 3. All questions are compulsory.

1. a) Give difference between file-based system and DBMS. 8
- b) Explain types of cardinalities with an example along with their relations. 8

OR

2. a) Write steps to convert ER to relational schema with an example. 8
- b) What is EER diagram? Draw an EER diagram and explain for following A university maintain records of its students and the programs in which they have enrolled. It stores student id, name, address and phone number of a student and program code, name, duration of program. A student is either full time or part time (only one of the types). A student can register for many programs and a program can have many students. 8
3. a) Explain relational algebra and its basic types in detail. 8
- b) Explain views in detail. 8

OR

4. a) State need of key in DBMS and explain following in detail with example- 8
- 1) Super key 2) Primary key
3) Foreign key 4) Candidate key
- b) State and explain aggregate functions in detail with example. 8
5. a) What is normalization? Explain 2nd NF and 3rd NF in detail. 8
- b) Convert a relation from 1st NF to 2nd NF. 8
- R (A, B, C, D)
FD : {A→B, B→C}.

OR

6. a) Explain minimal cover and find the minimal cover of the set of FD: 8
- {AB→C, C→AB, B→C, ABC→AC, A→C, AC→B}
- b) R (A, B, C, D, E) 8
- FD : {A→BCD, B→AE, BC→AED, D→E, C→DE}
- R1(A, B), R2(B, C) and R3(C, D, E).
- Check whether the relation is Dependency preserving decomposition or not.

7. a) Explain time stamp-based schemes of concurrency control. 8
- b) Explain transaction and describe ACID properties in detail. 8

OR

8. a) Explain need of checkpoints in transaction. 8
- b) Explain shadow paging in detail. 8
9. a) Explain the following- 8
- 1) Interconnection network in parallel database
- 2) Types of parallel database architectures
- b) Explain in brief decision-based support systems. 8

OR

10. a) Explain OLAP. 8
- b) Write short notes on: 8
- 1) Centralized systems
- 2) Client Server systems
