

M.E. First Semester (Computer Science & Engg.) (F.T.) (CGS)
13145 : Database Processing : 1 RMEF 5 / 3 RME 2

P. Pages : 2

Time : Three Hours



AX - 3405

Max. Marks : 80

- Notes :
1. Due credit will be given to neatness and adequate dimensions.
 2. Assume suitable data wherever necessary.
 3. Diagrams and equations should be given wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Explain the similarities & differences between E-R model and semantic object model. 7
b) List the limitations of file processing system. Explain how database technology overcomes the limitations. 6

OR

2. a) Name the major components of database system and briefly explain the function of each. 7
b) Explain difference between the HAS-A and IS-A relationship. Give an example for each. 6
3. a) Explain why 4th Normal form is more desirable than BCNF. Give an example of a relation. 7
b) Explain with suitable example the concept of functional dependencies and multivalued dependencies. 6

OR

4. a) Define Normalization and discuss the relationship between all the normal forms. Explain 2NF and 3NF with example. 7
b) What is anomaly? Explain different types of anomalies with an example. 6
5. a) Give an example of a simple object and composite object and show how to represent this by means of a relation. 7
b) Define the surrogate key and explain the statement "Surrogate keys serve to maintain entity identity". 7

OR

6. a) Explain the following. 8
i) Tree
ii) Simple Network
iii) Complex Network
iv) Bills of Material
b) Brief out the Hybrid objects with suitable example. 6

7. Consider the following schema:
 Employee (EmpId, EmpName, Department, Dt_join, Salary, Dept_Id).
 Department (Dept_Id, Dept_Name, Manager, Location)
 Write SQL statement for the following:
- i) Write DDL statements to create above tables/relation.
 - ii) Insert one record in each table assuming suitable data.
 - iii) Show the name of employees, who are earning salary between 1000 to 6000 (using BETWEEN operator).
 - iv) Delete the record of employee 'DAVID AUER'.
 - v) In employee relation, increase the salary of employee having department as RESEARCH with 10%
 - vi) Show the average salary of employee.

OR

- 8. a) What are view instances? Explain how they are updated and deleted. 7
- b) Explain the five major function of a database application. 6
- 9. a) What is the concurrent update problem? What is the two phase locking strategy and how it can be used to prevent the concurrent update problem. 7
- b) Explain cursor type in detail. 7

OR

- 10. a) What is Rollback? Explain why it is important to write log before changing database values. 7
- b) List and explain the data administrator task. 7
- 11. a) What is JDBC? List the steps used in JDBC. 7
- b) What is DTD? Explain with an example. 6

OR

- 12. a) Explain the importance of XML to database application. 7
- b) What are the goals of OLEDB? Explain in detail. 6
