**OCTOBER 2011** **P/ID 6031/MEP**

Time : Three hours Maximum : 80 marks

PART A — ($8 \times 5 = 40$ marks)

Answer any EIGHT questions.

All questions carry equal marks.

1. Explain the pitfalls of DBMS.

2. Compare BCNF and 3NF.

3. Why navigation is simpler in relational data model than in hierarchical data model?

4. Explain the concept of aggregation.

5. What is form designer? Explain its features.

6. Draw the overall system structure of a DBMS.

7. Explain the function of database administrator.

8. List the challenges faced by distributed databases.

9. Would you call a 1:1 relationship a functional dependency or a transitive dependency? Justify your answer.

10. Write short note on :

    (a) Relational algebra,

    (b) Relational calculus.

11. What are the two types of constraints in E-R diagram? Explain.

12. What are the design goals of a good relational database design?

PART B — (4 × 10 = 40 marks)

Answer any FOUR questions.

All questions carry equal marks.

13. Compare traditional file system with database system.

14. Explain the role of Functional Dependencies (FD) in the process of normalisation.

15. What are the advantages and disadvantages of the hierarchical database model?

16. What do you mean by data abstraction? Explain the difference between physical, logical and view level of data abstraction.

17. Explain the important properties of transaction that a DBMS must ensure to maintain database.

18. A University office maintains data about the following:

    (a) Courses including credits, syllabus, prerequisites

    (b) Course offering including year, semester, section, instructors, timing, classroom

    (c) Student including student-id, name, program and

    (d) Instructors including id-no, name, department.

Further the enrolment of students in course and grades awarded to students in each course they are enrolled for must be appropriately modelled.

Construct a E-R diagram for the University office. Make your own assumptions.

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