YMCA UNIVERSITY OF SCIENCE & TECHNOLOGY, FARIDABAD

M. TECH. 3RD SEMESTER (UNDER CBS)

ADVANCED DATABASE MANAGEMENT SYSTEM (MTCE-16-203)

Time: 3 Hours   Max. Marks: 60

Note:
1. It is compulsory to answer the questions of Part -1. Limit your answers within 20-40 word in this part.
2. Answer any four questions from Part -2 in detail.
3. Different parts of the same question are to be attempted adjacent to each other.

PART -1

Q1 (a) Describe the significance of a weak entity. When may it be used?   (2)
    (b) What is denormalization? What is its use?   (2)
    (c) What is meant by Semantic Query Optimization?   (2)
    (d) Explain the problem of "Dirty Read" in transaction processing taking a suitable example. (2)
    (e) What are multi-way relationships in ODL?   (2)
    (f) What is semi-join operation in distributed query processing?   (2)
    (g) What do you mean by parallel databases?   (2)
    (h) Differentiate between classification and clustering.   (2)
    (i) Differentiate between OLTP and OLAP.   (2)
    (j) How do we access XML data?   (2)

PART -2

Q2 (a) Why BCNF is said to be a stronger normal form than 3NF? Explain giving example.   (5)
    (b) What are Entity Integrity and Referential integrity constraints?   (2)
    (c) Differentiate between network and hierarchical data models.   (3)
Q3 (a) Describe the steps involved in processing a query.   (5)
    (b) What is heuristics query optimization? State the transformation rules.   (5)

Q4 (a) State Thomas Write rule for timestamp based concurrency control.   (5)
    (b) What are multi-version techniques for concurrency control?   (5)
Q5 (a) What primary characteristics should an OID possess?   (5)
    (b) What are the disadvantages of ORDBMS?   (5)
Q6   What are distributed databases? What are the techniques for distributing the database? (10)
         How transaction processing takes place in distributed databases?

Q7   Write short notes on the followings: (10)
         (a) Multimedia databases
         (b) Temporal Databases
         (c) Spatial databases
         (d) Information Retrieval