Q.P. Code: 24230

(3 Hours) **Total marks : 80**

Note:

- Question No. 1 is compulsory.
- Attempt any Three questions out of remaining questions.
- Make suitable assumptions whenever necessary.

Q1: **[5 X 4]**

a) What are the different deadlock avoidance techniques ?
b) What are the approaches for global query optimization ?
c) Compare federated databases with non-federated databases.
d) What are the Concurrency Control Anomalies ?

Q2:

a) Explain Design issues of Distributed DBMS. **[10]**
b) Discuss Allocation of fragments in detail. **[10]**

Q3:

a) Explain ACID properties of transaction management . **[10]**
b) Discuss different types of Locking Mechanisms. **[10]**

Q4:

Consider the global schema: **[20]**
PATIENT(Number, name, UID, Amount_due, Dept, Doctor, Med_treatment)
DEPARTMENT (Dept, Location, Director)
STAFF (Staffnum, Director, Task).

1) Show 2 example of horizontal fragmentation.
2) Show 2 example of Vertical fragmentation.
3) Show 2 example of Derived fragmentation.

Q5:

a) Explain different Types of Failures in a Distributed Database System. **[10]**
b) Design XML DTD file and XML document file for the following relational schema: **[10]**
customer(cname,cresidence,ctel)
item(item-name,item-code)
order-request(customer, set of product)
ctel can be a residence number or a mobile number.

Q6:

Write notes on the following. (any two) **[10 X 2]**

a) Reference Architecture of Distributed DBMS.
b) Objectives of query processing.
c) 3PC recovery protocols.
d) Querying and transformation of XML data.