2006 JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY

IV B.TECH II SEMESTER SUPPLEMENTARY EXAMINATIONS
ADVANCED DATABASES
(COMMON TO COMPUTER SCIENCE & ENGINEERING AND COMPUTER SCIENCE &SYSTEMS ENGINEERING)

APR/MAY 2006

TIME - 3 HOUR
MARK – 80

Answer any FIVE Questions
All Questions carry equal marks

1. Explain ISO/OSI reference Architecture.   [16]

2. Consider the global relations: PATIENT (NUMBER, NAME, SSN, AMOUNT- DUE, DEPT, DOCTOR, MED-TREATMENT) DEPARTMENT (DEPT, LOCA- TION, DIRECTOR) STAFF(STAFFNUM, DIRECTOR, TASK) Define their fragmentation as follows

(a) DEPARTMENT has a horizontal fragmentation by LOCATION, with two locations: Each department is conducted by one DIRECTOR.

(b) There are several staff members for each department, led by the departments director, STAFF has a horizontal fragmentation derived from that of DE- PARTMENT and a semi-joint on the DIRECTOR attribute. Which assump tion is required in order to assure completeness and disjointness? Give also the reconstruction of global relations from fragments.   [8+8]

3. (a) Distinguish between non-redundant and redundant allocation.

(b) Write briefly on the Measure of Costs and Benefits of Fragment Allocation.   [16]

4. What is parametric query. Give an example. Describe cut operation with respect to the example. [16]

5. Discuss about the Query optimization using SDD-1 algorithm.   [16]

6. (a) What are the goals of transaction management.

(b) Define:

i. Atomicity.

ii. Durability.

iii. Serializability.

iv. Isolation.   [4+3+3+3+3]

7. (a) Explain centralized controller methods for deadlock detection. List out the drawbacks.

(b) Explain hierarchical controller method for deadlock detection.   [10+6]

8. (a) Explain the operation of two-phase commitment protocol at the time when al sites are inactive.