Code No: NR320505 **NR**

**III B.Tech II Semester Supplementary Examinations, November/December 2005**
**DATA BASE MANAGEMENT SYSTEMS**
**( Common to Computer Science & Engineering, Computer Science & Systems Engineering and Electronics & Computer Engineering)**

**Time: 3 hours** **Max Marks: 80**

**Answer any FIVE Questions**
**All Questions carry equal marks**

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1. (a) Explain
   i. Database
   ii. DBMS
   iii. Entity
   iv. Relationships [2+2+2+2]
   (b) Explain the historical perspective of DBMS [8]
2. (a) Explain the three set-manipulation constructs available in SQL with examples.
   (b) What is a subquery? Explain with examples. [9+7]
3. (a) What happens if there is a page request when all pages in the buffer pool are dirty. Explain. [7]
   (b) Define the terms,
   i. Indexing field
   ii. Clustering field
   iii. Secondary key field
   iv. Block address [2+2+2+3]
4. (a) Describe how to extend the hash-join algorithm to compute the natural left outer join, the natural right outer join and the natural full outer join.
   (b) Explain the structure of optimisation
   (c) What are the usage of query processing techniques?
   (d) Discuss the various steps involved in processing a query with examples?[6+3+3+4]
5. Discuss various cost estimation methods of access based on indexing principle for relation operators. [16]
6. (a) Suppose the scheme R =(A,B,C,D,E) decomposed into R1(A,B,C) and R2(A,D,E). The following set of functional dependencies hold.
   A− > BC
   CD− > E
   B− > D
   E− > A
   Give a lossless-join , dependency-preserving decomposition of the scheme R into BCNF.

(b) Show that if a relation scheme is in BCNF, then it is also in 3NF. [10+6]

7. Write short notes on

   (a) dead lock.

   (b) exclusive lock.

   (c) binary lock.

   (d) live lock. [4+4+4+4]

8. (a) If a system fails repeatedly during recovery, what is the maximum number of log records that can be written (as a function of number of update and other log records written before crash) before restart completes successfully.

   (b) What is the oldest log record that we need to retain?

   (c) If a bounded amount of stable storage is needed for the log, how can we ensure that there is always enough stable storage to hold all log records written during restart? [5+5+6]

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