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II B.Tech II Semester Regular Examinations, Apr/May 2008
DATA BASE MANAGEMENT SYSTEMS
(Common to Computer Science & Engineering, Information Technology
and Computer Science & Systems Engineering)

Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Define the concept of aggregation. Give an example of where this concept is useful.

   (b) Explain the difference between a weak and a strong entity-set.   [8+8]

2. (a) What is a relational database query? Explain with an example.

   (b) Explain the following fundamental operations of relational algebra.   select project set rename.   [8+8]

3. (a) Explain the following.

      i. Query Processing
      ii. Pipelined evaluation

   (b) For the following relational database, give the expressions in SQL.   [8+4+4]
   student (stuno, stuname, major,level,age)
   Class(Classname, meets_at, Room, fid)
   Faculty(fid,fname,deptid)

      i. Find the age of the oldest student who is either a history major or is enrolled in a course taught by I.Teach?
      ii. Find the names of all classes that either meet in room R128 or have five or more students enrolled?
      iii. Find the names of all students who are enrolled in two classes that meet at the same time?
      iv. Find the names of faculty members who teach in every room in which some class in taught?

4. Explain the 4NF. Why is it useful? Explain with example   [16]

5. (a) Define the concept of schedule for a set of concurrent transaction. Give a suitable example.   [8]

   (b) Explain read-only, write-only & read-before-write protocols in serialazability.
                                                                                 [8]

6. (a) Explain how the index locking works in transaction taking sailor record.   [8]

   (b) With an example illustrate B+ tree locking scheme   [8]

7. Define the term dangling pointer. Describe how the unique-id scheme helps in detecting dangling pointers in an object-oriented database.   [16]

8. What are the causes of bucket overflow in a hash file organization? What can be done to reduce the occurrence of bucket overflows? [16]

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