APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIRST SEMESTER M.TECH DEGREE EXAMINATION, DECEMBER 2015

Computer Science and Engineering

08CS 6031 Advanced Database Technology

Max. Marks : 60   Duration : 3 Hours

Answer ALL six questions. Part (a) of each question is compulsory. Answer
EITHER part (b) or part (c) of each question.

Q.No.   Marks

Module I

1a.   Why do we need Normalization in DB?   3

Answer b or c

b.   Explain the concept of query processing with steps and optimization with example. 6

c.   Consider the relation Refrig(model,year,price,manu_plant,color). It decomposes into
D={R1(m,y,p),R2(m,mp,c)}.Is this decomposition lossless? Show why?   6

Module 2

2a.   What is range partitioning?   3

Answer b or c

b.   Discuss about inter and intra query parallelism in parallel databases.   6
c.   Briefly describe the different types of architectures in DBMS.   6

Module 3

3a.   Discuss the timestamp ordering protocol for concurrency control.   3

Answer b or c

b.   Consider the transactions t1, t2 and t3 and a schedule S given below.
S : read1(A); read2 (B); write1(C); read3(B); read3(C); write2 (B); write3(A)
Where the subscript denotes the transaction number. Assume that the time stamp of
t1<t2<t3. Using time-stamp ordering scheme for concurrency control find out if the
schedule will go through. If there is to be a rollback, which transaction(s) will be rolled
back?   6
c.   Explain the application and characteristic's Three tier Client Server Architecture in detail
                                                                           6

Module 4

4a.   What are the differences between structured, semistructured, and unstructured data? 3

b.   Explain Xpath and Xquery with suitable examples.   6
c.   Given hierarchical (tree) view with COURSE as the root. Find its XML schema
      document with course as the root.   6
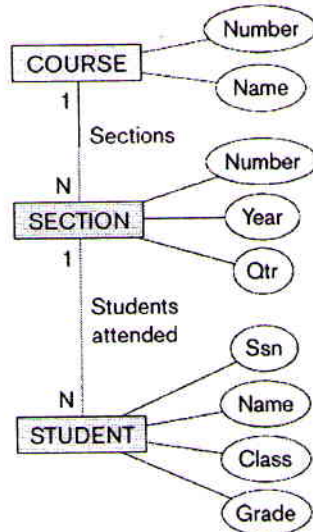
Module 5

5a.   What is key value data stores?   4

Answer b or c

b.   Explain the features of NoSQL databases.   8
c.   Describe graph databases with example.   8

Module 6

6a.   Differentiate between soft handoff and hard handoff?   4

Answer b or c

b.   Explain the different transaction models in mobile databases?   8
c.   Discuss in detail about any two mobile database recovery schemes?   8