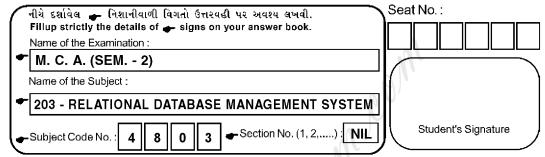**RF-4803**

M. C. A. (Sem. - II) Examination

April / May – 2010

203 - Relational Database Management System

(Old & New Course)

Time : **3** Hours]

[Total Marks : **70**

Instructions :

નીચે દર્શાવેલ ➤ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ➤ signs on your answer book.

Name of the Examination :

➤ **M. C. A. (SEM. - 2)**

Name of the Subject :

➤ **203 - RELATIONAL DATABASE MANAGEMENT SYSTEM**

➤ Subject Code No. : **4 8 0 3** ➤ Section No. (1, 2,.....) : **NIL**

Seat No. :

Student's Signature

1 Attempt any three : **21**

(a) Define primary index and secondary index. Give proper example and explain secondary index where search key is non-candidate key.

(b) Explain static hashing. Discuss advantages and limitation of hashing over indexing.

(c) Differentiate transaction server and data server for client server architecture.

(d) Expain Grant and Revoke statements. Explain - How role can be used for managing privileges in DBMS.

2 Attempt any two : **14**

(a) Explain the meaning of transaction in DBMS. Discuss different states and state transitions of transaction.

(b) Explain timestamp ordering protocol.

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1

[Contd...

(c) Consider the following schedule and decide
   (i) Whether the schedule is conflict serializable or not? Justify your answer.
   (ii) Whether the schedule is conflict serializable or not? Justify your answer.

Transaction 1	Transactions 2	Transactions 3
Read (X)		
	Read (Y)	
	Write (Y)	
		Write (X)
Write (X)		

3 Attempt any three :   **21**

(a) Compare immediate and deferred modification approach of log base recovery schemes.

(b) Expain 'shadow paging' as recovery scheme. State limitation of 'shadow paging'.

(c) What is a lock? What is lock compatibility matrix? Explain two-phase locking protocol.

(d) Let relations r1 (A, B, C) and r2 (C,D,E) have the following properties :

   - r1 has 20,000 tuples and r2 has 45,000 tuples

   - 25 tuples of r1 fit on one block and 30 tuples of r2 fit on one block.

   Estimate the number of block transfers using nested-loop join and block nested-loop.

4 Attempt any two :   **14**

(a) Explain basic steps in query processing.

(b) What is Distributed database system? Explain replication as distributed storage approach. Also discuss advantages and limitations of replication.

(c) Explain Parallel external Sort-Merge for parallel database system.

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