



**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 :**

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="M. C. A. (SEM. - 2)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="203 - RELATIONAL DATABASE MANAGEMENT SYSTEM"/>	<input type="text"/>
Subject Code No. : <input type="text" value="4"/> <input type="text" value="8"/> <input type="text" value="0"/> <input type="text" value="3"/>	<input type="text"/>
Section No. (1, 2,.....) : <input type="text" value="NIL"/>	
	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) Explain 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.

- (c) Consider the following schedule and decide
- Whether the schedule is conflict serializable or not? Justify your answer.
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Transaction 1	Transactions 2	Transactions 3
Read (X)		
	Read (Y)	
	Write (Y)	
		Write (X)
Write (X)		

**3** Attempt any three : **21**

- Compare immediate and deferred modification approach of log base recovery schemes.
- Explain 'shadow paging' as recovery scheme. State limitation of 'shadow paging'.
- What is a lock? What is lock compatibility matrix? Explain two-phase locking protocol.
- 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**

- Explain basic steps in query processing.
- What is Distributed database system? Explain replication as distributed storage approach. Also discuss advantages and limitations of replication.
- Explain Parallel external Sort-Merge for parallel database system.