DHARMSINH DESAI UNIVERSITY, NADIAD
FACULTY OF TECHNOLOGY
B.TECH. SEMESTER V [IT]
SUBJECT: (IT502) DATABASE MANAGEMENT SYSTEM

Examination	**:Third Sessional**	**Seat No.**	**: _____**
Date	**: 20/10/2012**	**Day**	**: Saturday**
Time	**: 11:15 to 12:30**	**Max. Marks**	**: 36**

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1 Do as directed. **[12]**

(a) Checkpoints are a part of (A) Recovery measures. (B) Security measures. (C) Concurrency measures. (D) Authorization measures. **[1]**

(b) Precedence graphs help to find a (A) Serializable schedule. (B) Recoverable schedule. (C) Deadlock free schedule. (D) Cascadeless schedule. **[1]**

(c) Shadow paging has (A) no redo (B) no undo (C) redo but no undo (D) neither redo nor undo **[1]**

(d) In multiple granularity of locks SIX lock is compatible with(A) IX (B) IS (C) S (D) SIX **[1]**

(e) Assume transaction A holds a shared lock R. If transaction B also requests for a shared lock on R. (A) It will result in a deadlock situation. (B) It will immediately be rejected. (C) It will immediately be granted. (D) It will be granted as soon as it is released by A. **[1]**

(f) For correct behavior during recovery, undo and redo operation must be (A) Commutative (B) Associative (C) idempotent (D) distributive **[1]**

(g) Cascading rollback is avoided in all protocol except (A) Strict two-phase locking protocol. (B) tree locking protocol (C) Two-phase locking protocol (D) Validation based protocol. **[1]**

(h) Which of the following is not a recovery technique? (A) Deferred update (B) Immediate update (C) Two-phase commit (D) Shadow paging **[1]**

(i) Advantages of Replication is/are (A) Transparency (B) Availability (C) Improved performance (D) Centralized processing **[1]**

(k) Validation scheme is known as _____ scheme. Why? **[1]**

(l) Blind writes appears in _____ schedule. **[1]**

(h) Every conflict serializable schedule is view serializable. State True or False. **[1]**

Q.2 Attempt *any two* from the following. **[12]**

(a) What are deferred modification and immediate modification technique for recovery? How recovery does take place in case of failures in these techniques? **[6]**

(b) Explain the two-phase commit protocol with how it handling failures of distributed database system. **[6]**

(c) What is deadlock? And How to handle deadlock detection and recovery? **[6]**

Q.3 (a) Consider three transactions: T1, T2 and T3. Draw the precedence graph for the following schedule consisting of these three transactions and determine whether it is Serializable OR not. If so, give its serial order(s). **[6]**

Time	T1	T2	T3
t1 :			read(Y)
t2 :			read(Z)
t3 :	read(X)		
t4 :	write(X)		
t5 :			write(Y)
t6 :			write(Z)
t7 :		read(Z)	
t8 :	read(Y)		
t9 :	write(Y)		
t10 :		read(Y)	
t11 :		write(Y)	
t12 :		read(X)	
t13 :		write(X)	

And also state what is serial schedule and serializable schedule.

(b) Explain Two-phase locking protocol with example. Differentiate between strict two-phase and rigorous two-phase with conversion protocol. **[6]**

OR

Q.3 (a) Explain Multiple Granularity protocol. **[6]**

(b) Compare wait-die deadlock prevention scheme with wait-wound scheme. **[4]**

(c) Compare the shadow paging with the log-based techniques. **[2]**