



Name :
Roll No. :
Invigilator's Signature :

CS/BCA/SEM-6/BCAE-602C/2012

2012

ADVANCED DATABASE MANAGEMENT SYSTEM

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

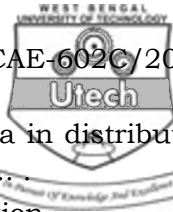
GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :
10 × 1 = 10
 - i) The timestamp schedule which accepts view serializable schedules is
 - a) basic timestamp
 - b) Thomas Write Rule
 - c) both (a) & (b)
 - d) neither (a) nor (b).
 - ii) Consider the SQL query :
select * from emp group by deptno
Which of the following is true ?
 - a) 1 row output
 - b) Error
 - c) 0 row output
 - d) Cannot say.
 - iii) Isolation is ensured by
 - a) Transaction Manager
 - b) User
 - c) Recovery Manager
 - d) Concurrency Control System.



- iv) A Trigger is
 - a) a statement that enables to start any DBMS
 - b) a statement that is executed by the user when debugging an application program
 - c) a condition the system tests for the validity of the database user
 - d) a statement that is executed automatically by the system as a side effect of a modification to the database.
- v) Locking all data item before beginning of transaction is part of
 - a) Basic 2PL Protocol
 - b) Strict 2PL Protocol
 - c) Rigorous 2PL Protocol
 - d) Conservative 2PL Protocol.
- vi) In which of the following schedules, all the instruction of a transaction execute consecutively ?
 - a) Serial Schedule b) Serializable Schedule
 - c) Recoverable Schedule d) Cascadeless Schedule.
- vii) Which is Shadowing paging ?
 - a) UNDO/REDO b) UNDO/No REDO
 - c) No UNDO/REDO d) No UNDO/No REDO.
- viii) Either all operations of the transaction are reflected properly in the database or none is called
 - a) durability b) consistency
 - c) isolation d) atomicity.
- ix) If a transaction T_1 has obtained a shared-mode lock on item Q , than T_1 can, but cannot
 - a) output, read b) write, read
 - c) output, write d) read, write.



- x) There are 2 approaches in storing a data in distributed database Fragmentation and
 - a) availability b) replication
 - c) transparency d) none of these.
- xi) Transitive dependency is not allowed in
 - a) 1NF b) 2NF
 - c) 3NF d) all of these.
- xii) In Public Key Encryption is a process where data is encrypted using
 - a) Receiver's Public Key
 - b) Sender's Public Key
 - c) A Global Public Key
 - d) A User Generated Public Key.

GROUP - B

(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

- 2. What is Fragment ? How many types are there ? Briefly explain each of them with suitable example.
- 3. Discuss the advantages and disadvantages of Distributed Database.
- 4. Explain Multivalued dependency with an example.
- 5. Discuss the ACID properties of database.
- 6. What is a view ?
View does not take any memory space. Justify.

GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

- 7. a) Explain Wound-Wait and Wait Die Technique for deadlock prevention. 4
- b) Explain why deferred update technique is called NO UNDO/REDO technique. 3



- c) Explain different transaction states with diagram. 4
- d) What is Two-Phase Locking ? Discuss. 4
- 8. a) Why concurrency control techniques are required ? 5
- b) When are two operations said to be at conflict ? 3
- c) Explain foreign key with example. 3
- d) What is Data Dictionary ? What is its use ? 2 + 2
- 9. a) What is the advantage of Shared/Exclusive Locking Technique over Basic ? 3
- b) Write the read_lock (x), write_lock (x) and unlock (x) functions in the Shared and Exclusive Locking Technique. 8
- c) State the algorithm for determining conflict serializability using precedence graph. 4
- 10. a) Explain 5th normal form with an example. 3
- b) What is Full replication ? What are its advantages ? 2 + 2
- c) What is multi-database system ? 2
- d) What is critical section ? 2
- e) What is Live Lock ? 2
- f) What is super key ? Give example. 2
- 11. Write short notes on any *three* of the following : 3 × 5
 - a) Embedded SQL
 - b) Triggers
 - c) 3-phase commit
 - d) Thomas' Write Rule
 - e) Shadow paging.

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