Date: 17/5/2017
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GANPAT UNIVERSITY

B. TECH SEM- IV (COMPUTER ENGINEERING/INFORMATION TECHNOLOGY)
CBCS REGULAR EXAMINATION APRIL-JUNE 2017
2CE403/2IT403:Database Management System-II

TIME: 3 HRS]   [TOTAL MARKS :60

Instructions: (1) This Question paper has two sections. Attempt each section in separate answer book.
      (2) Figures on right indicate full marks.
      (3) Be precise and to the point in answering the descriptive questions.
      (4) Assume suitable data if require.

SECTION: I

Q-1 [A] List followings   [5]
    1) Explicit mode locks in multiple granularity protocol.
    2) Rules of locking and unlocking in multiple granularity protocol.

[B] Explain graph based protocol.   [5]

OR

Q-1 [A] Discuss: when transaction can perform successful execution of READ and WRITE   [5]
operation on any data item in timestamp based protocol?

[B] Design any concurrent schedule with two transactions that validate the rules of two   [5]
phase locking protocol without any dead lock situation.

Q-2 [A] Write a PL/SQL code that define trigger T1 whose task is to maintain unique key   [5]
concept on ACCOUNT_NO attribute in ACCOUNT table whenever user perform
any insert or update operation. Assume unique key constraint is not defined on
ACCOUNT_NO attribute at the time of table creation.

[B] Write a PL/SQL code which define function F1 that check whether string received   [5]
as an argument is palindrome or not. If string is palindrome then it displays "String
is palindrome" otherwise display "Not a Palindrome String".

OR

Q-2 [A] Consider there are 120 students studying computer database course. Each one is   [5]
assigned unique numeric user id. First student have id 1 and last student have id
120.Write a single PL/SQL code that define trigger T1 on STUDENT_MASTER
table such that
    1) Student with even user id and in the range 1 to 60 can only perform insert
       operation. Other operations are rejected.
    2) Student with even user id and in the range 61 to 120 can only perform
       update operation. Other operations are rejected.
    3) Student with odd user id and in the range 1 to 60 can only perform delete
       operation. Other operations are rejected.
    4) Student with odd user id and in the range 61 to 120 cannot perform any
       operation.

[B] Discuss transaction servers and data servers.   [5]

[P. T.O]

Q-3 **[A]** Discuss various storage types. [5]

[B] Write a PL/SQL code that define procedure ALL_OP which receive two numeric [5] arguments and perform all basic mathematical operations like Add, Sub, Multiply, Division and returns all answers to calling PL/SQL code. Also write calling PL/SQL code that call procedure ALL_OP and print all answers in appropriate format.

SECTION: II

Q-4 **[A]** List transaction properties. Explain any two in detail. [6]

[B] Discuss query processing steps with diagram. [4]

OR

Q-4 **[A]** Discuss followings state transition in transaction state diagram. [6]
    1) Partial committed state to committed state.
    2) Partial committed state to failed state.

[B] Discuss the advantages of concurrent execution of transactions. [4]

Q-5 **[A]** Discuss horizontal fragmentation and vertical fragmentation of data in distributed [6] database system in detail.

[B] Explain in detail: Transaction Coordinator and Transaction Manager in distributed [4] database system structure.

OR

Q-5 **[A]** Discuss two phase commit protocol in distributed database system. [6]

[B] Discuss the advantages and disadvantages of data replication approach in [4] distributed database system.

Q-6 **[A]** Explain REDO and UNDO operation in immediate database modification [6] approach with example.

[B] Explain conflict serializable schedule with example [4]

-----End of Paper-----