End Term Exam

Roll no...........

Fourth Semester

May-2019

B.Tech. COE

CO 202 Database Management System

Duration: 3 Hrs.

Max Marks: 40

NOTE: Attempt all the questions. Assume the missing data, if any.

Q1. Answer the following questions in brief   (2x5=10)
a) Compare the DBMS with file processing system.
b) What are the problems caused by deadlocks?
c) Explain the different levels of data abstraction.
d) Explain the two types of participation constraint.
e) List out few salient features of open source databases.

Q2. a) Consider the following relational schema   (5)
employee(empno, name, office, age)
books(isbn, title, authors, publisher)
loan(empno, isbn, date)

Write the following queries in relational algebra.
  i)   Find the names of employees who have borrowed a book
       published by TMH.
  ii) Find the names of employees who have borrowed more than
       five different books published by TMH.

b) Compute the canonical cover of the following set of functional
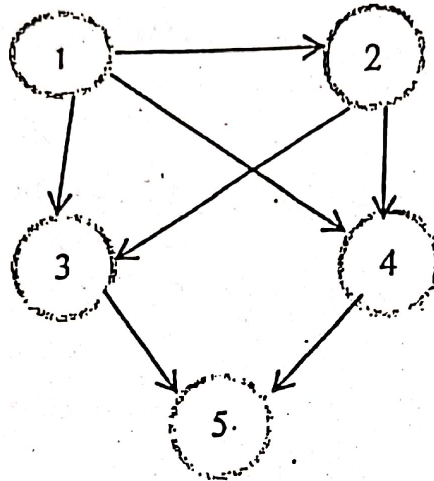dependencies for relation schema   (5)
R = (A, B, C, D, E).

$$A \rightarrow BC$$
$$CD \rightarrow E$$
$$B \rightarrow D$$
$$E \rightarrow A$$

P.T.O.

Q3. a) Consider the following precedence graph. Is the corresponding schedule conflict serializable? Explain your answer.   (3)

b) Discuss with example how updates are made in B^+ trees.   (3)

Q4. a) Prove that the two-phase locking protocol ensures conflict serializability.   (3)

b) What is recoverable schedule? Why is the recoverability desirable? Explain with suitable example.   (3)

Q5. Differentiate between: (4x2=8)
   a) Procedural and non-procedural DMLs
   b) Disjoint and overlapping generalization
   c) Sparse and dense Indexing
   d) BCNF and 3NF

END