Total No. of Printed Pages:2

SUBJECT CODE NO:- P-46
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CSE/IT) Examination MAY/JUNE-2016
Database Management System
(Revised)

[Time:Three Hours] **[Max Marks:80]**

"Please check whether you have got the right question paper."

N.B 1) Question no.1 from section A & Q. no.6 from section B are compulsory.
2) Solve any two questions from each section A & B from remaining questions.

Section A

Q.1 Attempt any five questions. 10

1) Define and compare the difference between signal valued and multi valued attributes.
2) What do you understand by the term data abstraction?
3) Define domain, attributes, tuples and relations.
4) List four significant differences between a traditional file system and DBMS.
5) Explain the distinctions among the terms primary key, candidate key & super key.
6) Explain the distinction between total and partial participation constraint.
7) Describe the differences in meaning between the terms relation and relation schema.

Q.2 a) What are the different types of database end users? Discuss the main activities of each. 07
b) Explain centralized and basic client/ server architecture of database. 08

Q.3 a) When is the concept of weak entity used in data modeling? Define the terms owner entity type, weak entity type, identifying relationship type and partial key. 07
b) Define an EER schema for a database application that you are interested in. Specify all constraints that should hold on the database. The schema should have at least five entity types & four relationship types. 08

Q.4 a) What are the characteristics of relations that make it different from ordinary tables and files? 08
b) Briefly discuss the different types of update operations on a relation. 07

Q.5 a) Explain the concept of aggregation. Give two examples where this concept is useful. 07
b) Explain the entity integrity and referential integrity constraints. Why each is considered important? 08

Section-B

Q.6 Attempt any five 10

1) What is first normal form?
2) What is a check point and when does it occur?
3) What is consistency in database?
4) Define concurrency control?
5) List act ACID properties of transaction.
6) With suitable example define view.
7) What is isolation?
8) Explain group by clause of SQL.

Q.7 a) Define multivalued dependency. Explain fourth normal form. 07
b) Explain binary relational algebra operations in detail. 08

Q.8 a) Consider the following relations. 08
Employee (Ename, Minit, Lname, Ssn, Bdate, Address, Sex, Salary, Super_Ssn, Dno)

Department (Dname,Dnumber, Mgr_Ssn, Mgr_start_date)
DEPT_ Locations (Dnumber,Dlocation)
Project (Pname, Pnumber, Plocation,Dnum)
Works_on(ESSn, Pno,Hours)
Dependent (ESSN, dependent_name, Sex, Bdate,Relationship)
Write down queries expressed in SQL

i) For each department whose average employee salary is more than $30,000, retrieve the department name, and the number of employees working for that department.
ii) Delete the record of project where project number is 09.
iii) Increase the salary of each employee by 05%.
iv) List the names of all employees who have a dependent with the same first name as themselves.

b) Explain integrity constraints with suitable example. 07

Q.9 a) What is timestamp based protocol. Explain in detail. 07

b) What is database recovery? Explain recovery techniques in detail. 08

Q.10 Write short notes on following 15

1) Nested sub queries
2) Functional dependencies
3) Deadlock handling