Total No. of Printed Pages:2

SUBJECT CODE NO:- H-537
FACULTY OF SCIENCE AND TECHNOLOGY
T.E. (CSE/IT)
Database Management System
(REVISED)

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

Please check whether you have got the right question paper.

N.B
1. Q.No.1 from section A and Q.No.6 from section B are compulsory.
2. Solve any two from remaining from Section A and Section B from each.
3. Assume suitable data.

Section A

Q.1   Attempt any five questions: 10
      i)   List out roles of database administrator.
      ii)   List out DML commands.
      iii)   Define foreign key with example.
      iv)   What is weak entity?
      v)   What is tuple and relation in relational data model?
      vi)   Define multi-valued attribute.
      vii)   What is ternary relationship?
      viii)   List out various Data Model.

Q.2   a) Explain the advantages and disadvantages of DBMS.   08
      b) Describe three schema architecture with example.   07

Q.3   a) Explain Mapping of ER to relational model.   08
      b) What is Relational Model? Explain Domain and attribute with example.   07

Q.4   a) Explain strong and weak entity set with example.   07

      b) Differentiate   08
      i)   Entity Versus Relationship
      ii)   Binary Versus Ternary Relationship

Q.5   a) Construct the ER diagram for Hospital Management   08
      -    Identify attribute, entities and relations.
      -    Identify primary key and foreign key
      -    Specify constraints

      b) Discuss the characteristics of relation that make them different from ordinary tables and files. 07

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Section B

Q.6 Attempt any five questions: 10
    i) What is serial schedule?
    ii) What is conflict equivalent?
    iii) What is multivalued dependency?
    iv) What is functional dependency?
    v) Why normalization is necessary?
    vi) What is order by clause in SQL?
    vii) What is selection and projection in relational algebra?
    viii) What is natural Join?

Q.7 a) Explain Boyce-Codd normal form (BCNF) with example. 08
    b) Explain second normal form with example. 07

Q.8 a) Consider the following relational schema of banking example. 08
branch (branch _name, branch _city, assets)
customer (customer _name, customer _city, customer _street)
account (account _number, branch _name, balance)
loan (loan _number, branch _name, amount)
depositor (customer _name, account _number)
borrower (customer _name, loan _number)
Write following queries using SQL?
    i) Find balance of customer whose account number is 3233
    ii) Find the names of customer who have loan at bank and the loan amount.
    iii) Find all customers who have an account from at least uptown branch.
    iv) Find all loans less than Rs.34000.

    b) What is join dependency? Explain fifth normal form with example. 07

Q.9 a) Explain aggregate functions in SQL. 07
    b) Explain union, intersection, difference and cross product in relational algebra. 08

Q.10 a) What is concurrency control? Explain two phase lock protocol. 08
    b) What is transaction? Explain ACID properties of transaction. 07