PVP 14

Code: EE7T5C

IV B.Tech - I Semester – Regular/Supplementary Examinations
March - 2021

DATABASE MANAGEMENT SYSTEMS
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11 x 2 = 22 M

1.

a) Differentiate schema and Instance.
b) List out DBMS advantages.
c) Differentiate relationship type and relationship set.
d) Define owner entity, weak entity, and partial key.
e) What is a transaction? How does it differ from an Update operation?
f) List out the data types that are allowed for SQL attributes.
g) Differentiate Foreign key and Primary key with suitable example.
h) What are anomalies that occur when the database in not normalized?
i) Define Functional Dependency.
j) Define the violations caused by each of the following: dirty read, nonrepeatable read, and phantoms.
k) Define complex attribute, key attribute and domain.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks.
3 x 16 = 48 M

2. Explain components modules of a DBMS 3-Scheme Architecture and their interactions using a neat diagram. 16 M

3. Construct an ER diagram for the BANK database schema, and perform all possible relationships among all Entities:
   Entities are:
   BANK (code, Name, Address),
   BANK_BRANCH (address, Branch_No),
   ACCOUNT (Type, Acc_No, Balance),
   LOAN (Loan_No, Amount, Type),
   CUSTOMER (Phone, Name, Address)
   Relations are: BRANCHES, ACCTS, LOANS, Account_C, Loan_C 16 M

4. Explain relational model constraints and relational database schemas. 16 M

5. Explain Normalization in a database. Suppose there is a company wherein employees work in more than one department. The table is as follows:

emp_id	emp_nationality	emp_dept	dept_type	dept_no_of_emp
1001	Austrian	Production and planning	D001	200
1001	Austrian	stores	D001	250
1002	American	design and technical support	D134	100
1002	American	Purchasing department	D134	600

Find out functional dependencies and convert this table into BCNF. 16 M

6. a) Discuss the desirable properties of Transactions? 8 M

b) Explain concurrency control based on Timestamp ordering. 8 M