Total number of printed pages–3

53 (EC 813) DBMS

2021

DBMS

Paper : EC 813 (Back)

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1. *(a)* Define various normal forms citing appropriate example. 10

   (b) What do you mean by DBMS ? Describe three-schema architecture of DBMS. 2+8=10

2. *(a)* Define cardinality ratio of binary relationship type. What are its various kinds ? Give examples of each. 2+8=10

Contd.

(b) What do you mean by degree of a relationship type? What is a role name? How is it important for recursive relationships? 2+2+6=10

3. (a) Discuss various types of locks used in concurrency control. 10

(b) Describe optimistic concurrency control technique. 10

4. (a) Define weak entity type, owner entity type, identifying relationship and partial key. Give example. 10

(b) What is the difference between 3NF and BCNF? 4

(c) What is data independence? What are their types? Which one of them is harder to achieve? 6

5. (a) Draw a transaction state diagram and discuss the typical states that a transaction goes through during execution. 10

(b) Discuss about deadlock and starvation. Write about *any* deadlock prevention scheme. 10

6. *(a)* Define the following terms : 2×5=10

(i) Entity

(ii) Domain

(iii) Attribute

(iv) DDL and

(v) DML

(b) What do you mean by a transaction in DBMS ? What are the ACID properties of a transaction ? 2+8=10

7. *(a)* What are the advantages of DBMS approach over traditional file system ? 10

(b) Draw an E-R diagram of a 'COMPANY' database considering employees, their departments and projects undertaken. 10