53 (EC 813) DBMS

2019

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 first, second and third normal forms. Differentiate between BCNF and 3NF. 6+4=10

   (b) Discuss the two-phase locking protocol. What are the desirable properties of a transaction ? 6+4=10

2. *(a)* Describe the three-schema architecture. 6

   (b) Discuss cardinality ratio of binary relationship. Give proper example. 8

Contd.

(c) Explain the different types of attributes used in a DBMS. Give examples for each. 6

3. (a) Discuss the problems, giving examples, faced with concurrent transactions executed in uncontrolled manner. 10

(b) Explain optimistic concurrency control technique. Name its phases. How is minimum overhead reached ? 10

4. (a) What are the advantages of DBMS approach over traditional file systems ? 7

(b) What do you mean by database schema ? Discuss data independence. 3+5=8

(c) Draw an E-R diagram of your institute. Take *any* relevant aspect. 5

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

(b) Discuss the problems of deadlock and starvation. Write about *any one* approach to deal with each of these problems. 10

6. (a) Explain Referential Integrity constraint and the concept of Foreign Key. 10

(b) What is a transaction ? Discuss about transaction state diagram. 2+8=10

7. Write short notes on : 5×4=20

(i) Binary and Ternary relationships

(ii) Full functional dependency

(iii) Weak entity type and Owner entity type

(iv) Primary key and Super key.