Total No. of printed pages = 3

DATABASE MANAGEMENT SYSTEM

Full Marks – 70

Pass Marks – 28

Time – Three hours

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

Answer question No. 1 and any *five* from the rest.

1. Answer the following short questions : 5×2=10

   (a) Define transaction.

   (b) State the meaning of foreign key.

   (c) What is a weak entity?

   (d) Write the definition of normalisation.

   (e) What is a key attribute?

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2. Define the following terms :   6×2=12

   (a) Schema

   (b) Instance

   (c) Data model

   (d) View

   (e) Multivalued attribute

   (f) Candidate key.

3. (a) State the meaning of data independent. Explain logical and physical data independence.   6

   (b) Describe 3–schema architecture with diagram.   6

4. (a) What are the advantages of using database approach ?   4

   (b) Illustrate Client server architecture.   3

   (c) Describe the characteristics of distributed database.   5

5. Compare the following :   3×4=12

   (a) 3NF and BCNF

   (b) Prime and non-prime attribute

   (c) Deadlock and starvation.

6. (a) Explain the following clauses of SELECT command : 6

(i) Group by

(ii) Order by

(iii) Like.

(b) Why concurrency control is needed ? State three problems related to it. 6

7. (a) Illustrate data encription. 3

(b) Explain different ways of granting of privileges. 4

(c) What is authorization ? 2

(d) State how security is ensured in a database environment. 3

8. Write short notes on any *three* : 3×4=12

(a) SQL.

(b) ACID properties of transaction.

(c) Components of E–R diagram.

(d) Data fragmentation.