C 47543 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2008

IT/CS 2K 602—DATABASE MANAGEMENT SYSTEMS

Time : Three Hours Maximum : 100 Marks

1. (a) Explain data independence.
   (b) What are the duties of a database administrator ?
   (c) Define the terms key, super key, entity set and candidate key.
   (d) Discuss in detail the different operations like retrieval operations and updation operation performed on files.
   (e) State the rules known as inference rules that are applicable for functional dependencies.
   (f) Explain views in SQL. What is its significance ?
   (g) What is the difference between weak and strong entity set ? Explain.
   (h) What is shadow paging ?

   (8 × 5 = 40 marks)

2. (a) With a neat block diagram, illustrate the three schema architecture. (8 marks)
   (b) What is a data model ? Explain various data models. (7 marks)

   Or

   (c) Summarize the advantages of using DBMS and highlight the capabilities that a good DBMS should possess. (15 marks)

3. (a) Discuss different RAID organizations. (7 marks)
   (b) What are the types of user-friendly interfaces ? (8 marks)

   Or

   (c) Explain the following file organizations :
      (i) Sequential.
      (ii) Indexed sequential.
      (iii) Direct.

   (15 marks)

4. (a) Define BCNF. How does it differ from ONF ? (7 marks)
   (b) Discuss the pitfalls in relational database design. (8 marks)

   Or

   (c) State and explain the inference rules for functional and multivalued dependencies. (8 marks)
   (d) What is data security ? Explain the different aspects of database security. (7 marks)

Turn over

5. (a) Discuss how time stamp ordering prevents deadlocks. (7 marks)

(b) Explain two phase locking protocol. What is its major drawback ? Explain any one of the solutions to this problem. (8 marks)

Or

(c) Explain with the help of a state diagram, the typical stages that a transaction goes through during execution. (8 marks)

(d) Discuss the two multiversion techniques for concurrency control. (7 marks)

(4 × 15 = 60 marks)