2011

MCA

3rd SEMESTER EXAMINATION

DBMS

PAPER—2301

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *five* questions.

1. (a) Compare BCNF and 3NF. Explain with example. 3

(b) What are the differences between meta data and data dictionary? 2

(c) What is Index? Why it is created? How does it work in Database? 2+1+2

(d) Given FD = {AB $\longrightarrow$ E, E $\longrightarrow$ C, BE $\longrightarrow$ I, CI $\longrightarrow$ D}

Show that AB $\longrightarrow$ CD. 4

2. (a) What are the functions of DBA? What are the advantages of view? 3+2

(b) What is Functional Dependency? Give example. 2+1

(c) What is view? How does it work in data base? 1+2

(d) What is cursor? How does it work in data base? 1+2

3. (a) What derived attribute? Give example. 1+1

(b) What is decoding function in SQL? 2

(c) What are the advantages of using DBMS over file processing system? 5

(d) Describe different levels of abstraction in DBMS? 3

(e) What is data model? 2

4. (a) Discuss about relationship cardinality? 3

(b) What do you mean by Instance and Schemas? 3

(c) Describe the ACID properties of a transaction 2

(d) What is the difference between view equivalence and view serializibility? When are the two operations said to be in conflict? When a schedule is said to be

conflict serializable ? 2+2+2

5. (a) What is blind write ? When a schedule is said to be a complete schedule ? 1+2

(b) What is data base trigger ? How it is created in data base ? 1+2

(c) What is sequencing ? Give an example of sequencing. 2+2

(d) What do you mean by lost update problem ? Explain with example. 2+2

6. Consider the following schema relation : $3\frac{1}{2} \times 4$

employees (e–number, e–name, address, bas-sal, job–sta);

projects (p–name, p_number, no-of-staff) ;

work-in (p–number, e–name, p–job) ;

Write the following any *four* Query in SQL and in Relational Algebra (if any).

(i) Find out the names of employee who are working in a project DBMS.

(ii) Find the numbers and names of the employees whose employee nos. are 5, 7, 10, 12.

(iii) Find the names of employees who are not working in any project.

(iv) Find project name of where 'PRASEN' works as an Team Leader (Job-status).

(v) Find the details of the employees whose basic salary is more than 10,000.

7. Explain any *four* of the following : $3\frac{1}{2} \times 4$

(a) Query optimization.

(b) Generalization and Specialization.

(c) B+ Tree.

(d) Super Key and Candidate Key.

(e) Amstrong's Axiom for FD.

(f) RDBMS.

***Internal Assessment* — 30**

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