



**KC-8071**  
**B. E. II (Sem. III) Examination**  
**November/December – 2012**  
**Database Management System**

Time : 3 Hours]

[Total Marks : 100

**Instruction :**

<p>नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : B. E. II (Sem. III)</p> <p>Name of the Subject : Database Management System</p> <p>Subject Code No. : 8 0 7 1 Section No. (1, 2,.....): Nil</p>	<p>Seat No. : □ □ □ □ □ □ □ □</p> <p style="text-align: center; border: 1px solid black; border-radius: 15px; padding: 10px;">Student's Signature</p>
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- 1 (a) Define the following terms : (any five) 10
- (i) Foreign key
  - (ii) DBA
  - (iii) Instance and Schema
  - (iv) Super Key
  - (v) Relational Algebra
  - (vi) 3 NF
  - (vii) Multivalve Attribute
- (b) Explain Database System Structure with diagram. 7
- OR**
- (b) What do you mean by data abstraction ? Explain 7  
3-levels of data abstraction in detail.
- 2 (a) Attempt any three : 18
- (i) Define functional dependency. Explain trivial and non-trivial FD with example
  - (ii) Given relation R with attributes A, B, C, D, E, F and set of FDs as A-> BC, E->CF, B->E and CD-> EF. Find out the closure {A, B}<sup>+</sup> of the set of attributes.
  - (iii) Explain BCNF with example.
  - (iv) Explain DDL, DML, DCL.

- 3 (a) Give Symbol used in E-R Diagram and Draw the E-R diagram for Library Management System. 7

OR

Give Symbol used in E-R Diagram and Draw the E-R diagram for RAILWAY RESERVATION SYSTEM.

- (b) Attempt any two : 8
- (i) Explain selection and projection operation with example.
  - (ii) Explain aggregation in E-R Diagram.
  - (iii) Explain natural join operation with example.
- 4 (a) Describe the following : (any ten) 10
- (i) Foreign Key
  - (ii) Transaction
  - (iii) Trigger
  - (iv) COMMIT
  - (v) Data dictionary
  - (vi) Timestamp
  - (vii) Atomicity
  - (viii) Two types of data encryption standard
  - (ix) Disadvantage of pipelining
  - (x) UPDATE command
  - (xi) Group by in SQL
  - (xii) Procedure in PL/SQL
- (b) Explain any three types of locking techniques. 6
- (c) Explain with diagram query decomposition. 4
- 5 (a) Consider the employee data. 8
- Employee (employee-name, street, city)  
Works (employee-name, company-name, salary)  
Company (company-name, city)  
Manages (employee-name, manager-name)
- Give an expression in SQL for the following query :
- (i) Modify the database so that Ramesh now lives in Mumbai
  - (ii) Give all employees of Central bank a 10 percent raise.

- (iii) Give all managers of Central bank a 10 percent raise unless the salary becomes greater than Rs. 1,00,000; in such cases; give only a 3 percent raise.
- (iv) Delete all tuples in the works relation for employee of SBI Bank.

(b) What is query optimization ? Explain it with a detailed block diagram. 7

**OR**

(b) Write short note on cursors in PL/SQL. 7

**6** (a) What is data encryption ? How it is used in database security ? 4

(b) Explain Two-Phase commit protocol. 4

(c) What is join ? Explain various type of joins with example. 7

**OR**

(c) Explain the concepts of serial, non-serial and serializable schedule. 7

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