

5E3161

Roll No. \_\_\_\_\_

Total No. of Pages : 3

**5E3161**

**B. Tech. V Sem.(Re-Back) Exam. Dec. 2012  
Computer Science  
5CP/SC3 Data Base Management System  
Common with 5IT3**

**Time: 3 Hours****Maximum Marks: 80****Min. Passing Marks: 24***Instructions to Candidates:*

*Attempt any five questions Selecting One question from each unit.  
All Question carry equal marks. Schematic diagram must be shown  
wherever necessary. Any data You feel missing suitable be assumed  
and stated clearly.*

*Units of quantities used/calculated must be stated clearly.*

Use of following supporting material is permitted during examination.

1. \_\_\_\_\_ Nil                      2. \_\_\_\_\_ Nil

**UNIT-I**

- Q.1. (a) Give overall system structure of DBMS and Explain function of each component. (8)
- (b) Why DBMS is preferred over conventional file system? Explain. (8)

OR

- Q.1. (a) Describe the 3 schema approach. Using it explain logical and physical Data independence. (8)
- (b) What is DBMS? How are data stored in DBMS? Explain. (8)

**UNIT-II**

- Q.2 (a) What is the role of E-R model in Database design? Draw an E-R diagram for bank management system. (8)
- (b) Discuss the naming conventions and symbols used in E-R diagram? (8)

OR

- Q.2. Design a generalization specialization on hierarchy for a motor vehicle sales company. The company sell motorcycles, cars, Vans and Buses, Justify the placement of attribute at each level of hierarchy. Explain why they should not be placed at higher or lower level? (16)

### UNIT-III

- Q.3. what is meant by a safe expression in Relational calculus? How does Tuple Relational Calculus differ from Domain Relational Calculus? (16)

OR

- Q.3. (a) Explain various types of join operations? (8)  
 (b) Write short note on:-  
 (1) Expressive power of language.  
 (2) Universal and Existential quantifier (4 x 4)

### UNIT-IV

- Q.4. (a) What are views? What is their significance? (8)  
 (b) Explain various constraints used in SQL? (8)

OR

- Q.4. (a) Consider the following relation:  
 Student (Rollno, Name, Subject, Marks) Find the names of the following students:  
 (1) Who have secured the highest marks in the class?  
 (2) Who have secured more than the average marks in the class? (8)
- (b) Why should we create indexes on relations? What is the advantage? (8)  
 Explain using example.

### UNIT-V

- Q.5 (a) Explain the concept of determinant with the help of Boyce-codd normal form. (8)  
 (b) Explain Armstrong's axioms with example. (8)

OR

Q.5. (a) Consider the following relations:

Student ((Roll no, Name, Subject, Marks)

Teacher (Tid, Tname, Subject, Roll no)

Check to which normal form this relation belongs to.

If required, normalize it further. (10)

(b) What is denormalisation? Differentiate between 3NF and BCNF. (6)

-----

sales  
the  
uld  
(16)  
tuple  
(16)  
(8)  
4 x 4)  
(8)  
(8)  
Follow-  
s? (8)  
age?  
(8)  
nor  
(8)  
(8)