

**SUBJECT CODE NO:- P-31**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**T.E.(CSE/IT) Examination May/June 2017**  
**Database Management System**  
**(Revised)**

[Time: Three Hours]

[Max.Marks:80]

Please check whether you have got the right question paper.

N.B	i) Q.No.1 from section A and Q.No.6 from section B are compulsory. ii) solve any two from remaining from sections A and B each.	
Section A		
Q.1	Attempt any five questions. 1) Define data abstraction and levels of data abstraction. 2) Define distributed DBMS & client server DBMS. 3) What is foreign key? List the properties of foreign key. 4) What is mapping cardinality? What are the different types of mapping cardinality? 5) Distinguish EER model from ER Model. 6) Define relational data model concept. 7) Define the terms integrity constraint. 8) Define Null Values? How do you retrieve null values?	10
Q.2	a) Define the two principle integrity rules for the relational model. Discuss why it is desirable to enforce these rules. b) What is a key? Explain in details the type of keys.	08 07
Q.3	a) What is file processing system? Explain disadvantages of file processing system. b) What do you mean by data models? Explain the types of data model with an example for each.	08 07
Q.4	a) Define concept of Aggregation? Give two example of where this concept is useful. a) Discuss the role of data administrator in detail.	08 07
Q.5	a) Discuss the characteristics of relations that make them different from ordinary files and table. b) What is type inheritance? How does a super class relationship represent type inheritance?	08 07
Section B		
Q.6	Attempt any five 1) List the fundamentals of relational algebra 2) Define DDL and DML and list their commands 3) What is lossless decomposition? 4) List different types of join operation. 5) Define serial schedule and non-serial schedule. 6) What is Normalization? Explain why it is needed. 7) Need for concurrency control 8) What is dirty read Anomaly.	10

- Q.7 a) What is backup recovery? Explain techniques of backup recovery. 08  
 b) Explain insertion, deletion and modification anomalies with example. 07
- Q.8 a) Define Boyce-Codd normal form and third normal form. How does BCNF differ from 3NF? 08  
 b) What is transaction? Explain ACID Properties of a transaction. 07
- Q.9 a) Difference between left outer join, right outer join and full outer join with suitable example. 08  
 b) What is deadlock? Explain deadlock prevention techniques 07
- Q.10 a) Consider the following schema and answer the following SQL queries. 08  
 Employee ( person\_name , street, city)  
 Works (person\_name, company\_name, salary)  
 Company (company\_name, city )  
 Manages (person\_name , manager\_name)  
 i) Find name and cities of residence of all employees who work for Wipro.  
 ii) Find the name of all employees in this database who live in the same city as the company for which they work.  
 iii) Find the name of all employees in this database who do not work for Wipro.  
 iv) Find the name street address and cities of all employees who work for Wipro and earn more than Rs. 10000  
 b) Explain Two-phase locking protocol with the help of example. 07