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**SUBJECT CODE NO:- E-214**  
**FACULTY OF ENGINEERING AND TECHNOLOGY**  
**T.E.(CSE/IT) Examination Nov/Dec 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 section A and section B from each.
  - iii. Assume suitable data.

**Section A**

- Q.1 Attempt any five questions. 10
- 1) What do you mean by mapping operation?
  - 2) What are total and partial participation constraints?
  - 3) Define attribute. What is key attribute?
  - 4) List different types of End-users.
  - 5) Define Relation Model Concept.
  - 6) Explain distributed and client-server DBMS.
  - 7) Define foreign key. What is the concept used for?
  - 8) Explain properties of Relation.
- Q.2
- a) Describe how strong and weak entities differ and provide an example of each. 07
  - b) Design an ER schema for part of bank database. Each bank can have multiple branches and each branch can have multiple accounts. 08
- Q.3
- a) Explain Mapping of E-R to Relational model. 07
  - b) What is key? Explain different types of keys. 08
- Q.4
- a) What is file processing? Explain disadvantages of file processing. 07
  - b) Explain Aggregation with one of the example. 08
- Q.5 Write short notes on the following (Any three) 15
- a) Role of different levels of abstraction in detail.
  - b) Data models
  - c) Entity and Referential integrity constraints.
  - d) Generalization and Specialization.

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## Section B

Q.6 Attempt any five questions.

- 1) Need for concurrency control
- 2) Define BCNF
- 3) Explain ACID properties
- 4) Define Lock, shared and Exclusive lock.
- 5) Difference between Truncate and Delete.
- 6) What is Normalization?
- 7) List different types of Joins.
- 8) What is Multivalued dependency?

10

Q.7 a) What is functional dependency? Describe second normal form in detail.

07

b) What is decomposition? Explain lossy and lossless decomposition with example.

08

Q.8 a) What is back-up recovery? Explain techniques of backup recovery.

07

b) Consider following schema & answer the following Queries.

08

Employee (employee-name, street, city) works (employee-name, company-name, salary)  
company (company-name, city) manages (employee-name, manger-name)

- i) Find he names, street, city of all employees who works for 'Infosys' & earn more than \$50,000
- ii) Find the name of all employees in the database who live in the same cities as the companies for which they work.
- iii) Find the name of the all employees in the database who do not work for 'Infosys'.
- iv) Find the names of all employees in the database who earn more than every employee of 'TCS'.

Q.9 a) What is deadlock? What are different ways of handling deadlock?

08

b) What is serializability? Explain concept of view serializabilitiy.

07

Q.10 Write short notes on the following (Any three)

15

- a) Two phase Locking protocol.
- b) Aggregation Function in SQL.
- c) Define Join dependency. Explain 5NF.
- d) Dirty Read problem. Explain?