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Sub Code: NCS502

Paper Id:

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B TECH
(SEM V) THEORY EXAMINATION 2017-18
DATABASE MANAGEMENT SYSTEM

Time: 3 Hours

Total Marks: 100

Notes: Attempt all Sections. Assume any missing data.

SECTION-A

1. Attempt all questions of the following: **(10×2=20)**
- a) Explain Specialization.
 - b) Write Advantages of Database.
 - c) Define DML.
 - d) Explain Logical data Independence.
 - e) Explain Entity Integrity Constraints.
 - f) Define 2 NF.
 - g) Explain I in ACID Property.
 - h) Define schedule.
 - i) Define Exclusive Lock.
 - j) Define replication in distributed database.

SECTION-B

2. Attempt any **Three** of the following: **(10×3=30)**
- a) Discuss the role of database administrator.
 - b) Discuss Join and Types with suitable example.
 - c) What is Trigger? Explain different trigger with example
 - d) Write difference between BCNF Vs 3 NF.
 - e) What is Two phase Locking (2PL)? Describe with the help of example.

SECTION-C

3. Attempt any **One** of the following: **(10×1=10)**
- a) What do you mean by serializability? Discuss the conflict and view serializability with example. Discuss the testing of serializability also.
 - b) What are multi version schemes of concurrency control? Describe with the help of an example. Discuss the various Time stamping protocols for concurrency control also.
4. Attempt any **One** of the following: **(10×1=10)**
- a) Consider the following relation. The Primary key is Rollno, Isbn, Student(RollNo, Name, Branch), Book(Isbn, Title, Author, Publisher) Issue(Rollno, Isbn, te_of_issue). Write the query in Relational algebra and SQL of the following-
 - i) List the Roll Number and Name of All CSE Branch Student.
 - ii) Find the name of students who have issued a book of publication 'BPB'.
 - iii) List the title and author of all books which are issued by a student name started with a.
 - iv) List the title of all books issued on or before 20/09/2012.
 - v) List the name of student who will read the book of author named 'Sanjeev'.
 - b) Draw an ER diagram of Hospital or Bank with showing the Specialization, Aggregation, Generalization. Also convert it in to relational schemas and SQL DDL.

5. Attempt any **One** of the following: **(10×1=10)**

- a) Explain the Primary Key, Super Key, Foreign Key and Candidate key with example.
- b) Short Notes of the Following-
 - i) MVD or JD
 - ii) Normalization with advantages

6. Attempt any **One** of the following: **(10×1=10)**

- a) What is Log? How is it maintained? Discuss the features of deferred database modification and immediate database modification in brief.
- b) What do you mean by Transaction? Explain transaction property with detail and suitable example.

7. Attempt any **One** of the following: **(10×1=10)**

- a) Explain all database languages in detail with example.
- b) Explain data fragmentation with types.