Printed pages: 01 **Sub Code: NCS502**

Paper Id: | 1 | 0 | 3 | 7 | **Roll No:** | | | | | | | | | | |

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 serialzability 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.

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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.

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