

B.TECH.**THEORY EXAMINATION (SEM-IV) 2016-17****DATABASE MANAGEMENT SYSTEM****Time : 3 Hours****Max. Marks : 100****Note : Be precise in your answer.****SECTION – A****1. Attempt the following:****10 x 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 five of the following questions:****5 x 10 = 50**

- (a) Discuss the role of database administrator.
- (b) Explain the Primary Key, Super Key, Foreign Key and Candidate key with example.
- (c) Draw an ER diagram of Hospital or Bank with showing the Specialization, Aggregation, and Generalization. Also convert it in to relational schemas and SQL DDL.
- (d) Discuss Join and Types with suitable example.
- (e) What is Trigger? Explain different trigger with example
- (f) Short Notes on the Following:
 - (i) MVD or JD
 - (ii) Normalization with advantages
 - (iii) BCNF Vs 3NF
- (g) What is Log? How is it maintained? Discuss the features of deferred database modification and immediate database modification in brief.
- (h) What is Two phase Locking (2PL)? Describe with the help of example.

SECTION – C**Attempt any two of the following questions:****2 x 15 = 30**

- 3. What do you mean by serializability? Discuss the conflict and view serializability with example. Discuss the testing of serializability also.
- 4. 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.
- 5. Consider the following relation. The Primary key is Roll No, ISBN –Student (Roll No, Name, Branch), Book (ISBN, Title, Author, Publisher), Issue (Roll No, ISBN, Date_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 'BPP'.
- (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'.

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