C. U. SHAH UNIVERSITY
Winter Examination-2019

Subject Name: Database Management System

Subject Code: 4TE03DMS1   **Branch: B.Tech (CE)**

Semester : 3   **Date : 26/11/2019**   **Time : 02:30 To 05:30**   **Marks : 70**

Instructions:
- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

Q-1   **Attempt the following questions:**   **(14)**

a)	Define Schema and instance.	(1)
b)	What is data independence?	(1)
c)	What is deadlock?	(1)
d)	What is data dictionary?	(1)
e)	Write down the definition of DBMS.	(1)
f)	Which command is used to delete entire table in database	(1)
g)	All super key is candidate key? True or False	(1)
h)	Define Tuple.	(1)
i)	Define Weak entity set.	(1)
j)	List down different mapping cardinality constraint explain anyone.	(1)
k)	Define Entity	(1)
l)	Write down syntax for the update data in table with example.	(1)
m)	When a table is said to be in BCNF write down the condition for it.	(1)
n)	What is data abstraction	(1)

Attempt any four questions from Q-2 to Q-8

Q-2   **Attempt all questions**   **(14)**
(a)   Explain disadvantage of file processing system compared to database   **(7)**
         management system.
(b)   What is key? Explain different types of key with example.   **(7)**

Q-3   **Attempt all questions**   **(14)**
(a)   What is Relational Algebra? List out the relational algebra operators and   (7)
         explain any two with example.
(b)   What is normalization? Explain 1NF, 2NF , 3NF with example in detail.   (7)

Q-4   **Attempt all questions**   **(14)**
(a)   Explain various types of JOINS with example.   (7)

	(b)	What is E-R model? Draw an E-R diagram for Railway reservation System.	(4)
	(c)	Given relationship R(ABCDE) F= {AB->C, C->D , B->E} check if it is in 2NF or not ?	(3)

Q-5   **Attempt all questions**   **(14)**

(a) Explain the Architecture of Database Management System in detail with diagram.   (7)

(b) What is concurrency control? Why it is needed?   (7)

Q-6   **Attempt all questions**   **(14)**

(a) Explain various steps involved in query evaluation.   (7)

(b) Explain two phase commit protocol.   (7)

Q-7   **Attempt all questions**   **(14)**

(a) What is transaction? List and explain ACID Property of transaction.   (7)

(b) What is decomposition? Explain different types of decomposition with example.   (7)

Q-8   **Attempt all questions**   **(14)**

(a) List out database languages and explain them in detail.   (7)

(b) Write down the characteristics of SQL.   (3)

(c) Write down different types of database users and role of DBA.   (4)