Code: CS5T1

III B.Tech - I Semester – Regular Examinations – December 2016

DATABASE MANAGEMENT SYSTEMS
(COMPUTER SCIENCE AND ENGINEERING)

Duration: 3 hours   Max. Marks: 70

PART – A

Answer *all* the questions.   All questions carry equal marks

11x 2 = 22 M

1.
   a) What is database schema?
   b) Write any two types of actions involved in databases?
   c) List different Schema evaluation commands.
   d) When query language is called as relationally complete?
   e) What is the main idea of Triggers?
   f) What can you say about recursive relationship type?
   g) Define Boyce-Codd normal form.
   h) What can you understand by attribute closure?
   i) List the types of locks used in concurrency control.
   j) What is the two-phase locking protocol?
   k) What is meant by catastrophic failure?

PART – B

Answer any **THREE** questions.   All questions carry equal marks.   3 x 16 = 48 M

2. a) Discuss the difference between database system and information retrieval systems.   8 M

   b) Explain about database system utilities.   8 M

3. a) Consider the following tables R and S.   10 M

R			
A	B	C	D
1	2	3	4
2	2	5	1
3	4	2	6
4	2	5	3

S		
A	B	C
1	2	3
2	2	5
3	4	2
4	2	5

   Show the results of the following operations:
   i) $R \bowtie S$ ii) $R \bowtie_{R.C=S.C} S$ iii) $R \bowtie_{R.A=S.C} S$

   b) List the data types that are allowed for SQL attributes.

                                                                                       6 M

4. a) What is subclass? When is a subclass needed in data modeling?   8 M

   b) Explain the difference between an attribute and a value set.

                                                                                       8 M

5. a) What is fourth normal form? When is it violated? When is it typically applicable? 8 M

b) Define fifth normal form and explain why it is called project-join normal form? 8 M

6. a) Explain two multiversion techniques for concurrency control. 8 M

b) Discuss the problems of deadlocks and starvation. 8 M