

Total No. of Questions : 6]

SEAT No. :

P43

[Total No. of Pages : 2

Oct.-16/TE/Insem.-43

T.E. (Computer Engineering)

DATABASE MANAGEMENT SYSTEMS APPLICATIONS

(2012 Pattern)

Time : 1 Hour]

[Max. Marks : 30

Instructions to the candidates:

- 1) Answer Q1 or Q2, Q3 or Q4, Q5 or Q6.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right side indicate full marks.
- 4) Answer suitable data, if necessary.

- Q1) a) Draw ER Diagram for Online Book Shop which should consist of Entity Sets, attributes, relationships, mapping cardinality and keys. It will maintain information about all Customers, Books, Book Authors, publishers, billing, etc. [5]
- b) Explain Second and Third Normal Form with suitable example. [5]

OR

- Q2) a) What is the use of views in database? Explain when view becomes updatable? [5]
- b) Consider the relational database [5]

Supplier (sid, sname, address)

Parts (pid, pname, color)

Catalog (sid, pid, cost)

Write SQL queries for the following requirements: (any 2)

- i) Find name of all parts whose color is green.
- ii) Find names of suppliers who supply some red parts.
- iii) Find names of all parts whose cost is more than Rs. 25

P.T.O.

Q3) a) Consider following structure for MongoDB collection and write a query for following requirements in MongoDB (any 2) [5]

Student (Roll_No, Class, Marks_obtained).

- i) Create above collections and insert minimum 2 documents into collection
 - ii) Find all students who belongs to Class SE_Comp and Obtained more than 60 Marks.
 - iii) Use Update method to insert documents.
- b) Explain CAP theorem with suitable example. Also list different properties of BASE transactions. [5]

db.

OR

Q4) a) Explain how NOSQL databases are different than relational databases? [5]

b) Explain Key-value store NOSQL data Model. [5]

Q5) a) What is starvation? How two phase lock protocol will solve the problem of starvation? [5]

b) List and explain different states through which transaction goes during its execution. [5]

OR

Q6) a) Write note on Performance Tuning in SQL databases. [5]

b) Check whether following schedules are conflict equivalent or not. Justify your answer. (T1 & T2 are transactions) [5]

T ₁	T ₂
read(A) write(A)	
	read(A) write(A)
read(B) write(B)	
	read(B) write(B)

T ₁	T ₂
read(A) write(A) read(B) write(B)	
	read(A) write(A) read(B) write(B)

