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SEAT No. :

P5008

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T.E./Insem.-149

T.E. (Computer Engineering)

DATABASE MANAGEMENT SYSTEMS APPLICATIONS

(2012 Pattern) (Semester - I)

Time :1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

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

Q1) a) Design Entity Relationship Model using ER diagram with extended ER features for Online Book Shopping database application. Consider different entities, entity set, attributes and constraints. **[4]**

b) Define Normalization. Explain how 2NF remove various Data Anomalies with suitable example. **[4]**

c) Write a short note on database view. **[2]**

OR

Q2) a) Consider following database **[4]**

Cricket_player(p_id, Name, Address)

Matches(Match_code, match_date, match_place)

Score(p_id, match_code, score)

Write following queries in SQL

i) List player name, match_date, match_place and score of each player.

ii) List all those players, whose maximum score is higher than 50.

b) What is Data Abstraction? Explain various levels of data abstraction in database. **[4]**

c) Define DBMS. List its advantages over file systems. **[2]**

P.T.O.

Q3) a) Define unstructured database. List advantages of NoSQL databases. **[4]**

b) Explain CRUD operations in MongoDB database with suitable example. **[4]**

c) Explain in brief key value pair based model in NoSQL databases. **[2]**

OR

Q4) a) Define aggregation. Explain it with suitable example in MongoDB. **[4]**

b) Consider the collection of "movies" which contain documents as **[4]**

(movie_name, type, budget, producer [p1, p2]}

Write MongoDB statements for the following queries.

i) Find all movies having budget more than 50 million.

ii) Find all movies produced by "Prakash" and "Satyadev" together.

c) Write a short note on CAP theorem. **[2]**

Q5) a) Define Transaction Management. Explain ACID properties with suitable example. **[4]**

b) Explain lock-based protocol to control concurrency in databases. **[4]**

c) Write a short note on Performance Tuning in NoSQL databases. **[2]**

OR

Q6) a) Check whether given schedule is view serializable. Justify your answer. **[4]**

T3	T4	T5
Read(Q)		
	Write(Q)	
Write(Q)		
		Write(Q)

b) What is query optimization? Explain it with suitable example in NoSQL databases. **[4]**

c) Write a short note on Deadlock in database. **[2]**