

Total No. of Questions : 10]

SEAT No. :

P3000

[Total No. of Pages : 2

[5669]-592

**T.E. (Information Technology)**  
**DATABASE MANAGEMENT SYSTEM**  
**(2015 Pattern) (Semester - I)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Answer Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8 and Q9 or Q10.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume suitable data if necessary.*

**Q1)** a) Describe the three level architecture of DBMS. Explain how is it useful for achieving data independence. **[5]**

b) List out different Data Models. Explain any two. **[5]**

OR

**Q2)** a) Explain insertion, deletion & modification anomalies with example. **[5]**

c) Explain the concept of view along with its operations. **[5]**

**Q3)** a) Explain embedded & dynamic SQL. **[5]**

b) What is trigger? Explain trigger with suitable example. **[5]**

OR

**Q4)** a) Explain join operations with example. **[6]**

b) Explain the types of attributes with example. **[4]**

**Q5)** a) Explain deadlock detection and prevention techniques. **[6]**

b) Explain log-based recovery techniques. **[6]**

c) Explain two phase locking protocol and its forms. **[6]**

OR

**P.T.O.**

- Q6)** a) Draw and explain all parallel database architectures. [9]  
b) Explain types of fragmentation and replication with example. [9]

- Q7)** a) Explain advantages of NOSQL over SQL. Also explain CRUD operations in NOSQL. [8]  
b) Write a short note on (any two) : [8]  
i) Cloud database  
ii) SQLite database  
iii) Mobile database

OR

- Q8)** a) Describe key points in JSON along with its data types. Compare JSON with XML. [8]  
b) Draw and explain architecture of HDFS. [8]

- Q9)** a) Explain various data processing techniques. [8]  
b) Explain different schema in Data Warehouse. [8]

OR

- Q10)** a) Write a short note on : [8]  
i) Machine Learning for Business Intelligence  
ii) KDD process  
b) Explain characteristics and applications of Big data. [8]

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