

Total No. of Questions : 10]

SEAT No. :

**P3636**

[Total No. of Pages : 2

**[5560]-592**

**T.E. (IT) DATABASE MANAGEMENT SYSTEM  
(2015 Course) (Semester - I)**

*Time : 3 Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) *Neat diagrams must be drawn wherever necessary.*
- 2) *Black figures to the right indicate full marks.*
- 3) *Your answers will be valued as a whole.*
- 4) *Assume suitable data, if necessary.*
- 5) *All questions are compulsory.*

**Q1) a)** Specify codd's Norms to be satisfied by RDBMS? **[5]**

b) Explain the problems that may arrive if the DBA doesnot discharge the responsibilities properly? **[5]**

OR

**Q2) a)** Explain different Join operations in Relational Algebra with suitable example. **[6]**

b) What is Normalization? State & explain 2NF & 3 NF. **[4]**

**Q3) a)** What are the possible causes of transaction failure? Explain the siganificance of ACID properties. **[5]**

b) Why is query optimization important for databases? **[5]**

OR

**Q4) a)** What are the issues in determinig lock granularity? What is multiple granularity. **[5]**

b) Explain the motivations for using news. Is it possible to update news? **[5]**

**P.T.O.**

- Q5)** a) What is the basis of immediate updates recovery technique? What does the deferred updates recovery technique involve? [8]
- b) Explain major objectives of distributed database design. [8]

OR

- Q6)** a) What are the different techniques of data replication? Explain with suitable example. [8]
- b) Explain the concept of log & how it helps with database recovery with suitable diagram. [8]

- Q7)** a) Define JSON. What is the rule for writing JSON? Differentiate between JSON and XML. [10]
- b) What is mobile database? state the functionality required for mobile database. [8]

- Q8)** a) What are XML namespaces? How to solve name conflict? [6]
- b) Write a short note on : (any 3) [12]
- i) Cloud databases
  - ii) Internet data bases
  - iii) HBase Data model
  - iv) HDFS

- Q9)** a) What is motivation behind supervised classification? What is training data set? In what situations can this technique be useful? How can a decision tree be constructed? [8]
- b) Explain the significance of machine learning to Big data. Give applications. [8]

OR

- Q10)** a) Define & explain Data mining. What are major applications of data mining? [8]
- b) Define Big Data? Explain the characteristics of Big data. [8]

