

Total No. of Questions : 12]

SEAT No. :

P1428

[Total No. of Pages : 3

[4858] - 201

T.E. (IT)

DBMS

Database Management Systems

(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates :

- 1) *Answers to the two sections should be written in separate answer books.*
- 2) *Answer any three questions from each section.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right side indicate full marks.*
- 5) *Use of Calculator is allowed.*
- 6) *Assume suitable data if necessary.*

SECTION - I

- Q1)** a) How following Problems are handled with DBMS. [8]
i) Data Isolation.
ii) Data Redundancy and Inconsistency.
iii) Data Integrity.
b) Explain various Data Models used in DBMS. [10]

OR

- Q2)** a) Explain the structure of DBMS. [10]
b) What do you mean by key? State & explain Codd's rules. [8]

- Q3)** a) What do you mean by Cursor? Explain the types of cursor with example. [8]
b) Explain various set operation in SQLwith example. [8]

OR

- Q4)** a) Explain Natural Join & division operation in relational algebra with example. [8]
b) Explain Stored Procedures & Triggers. [8]

P.T.O.

- Q5)** a) What is Normalization? Explain 1NF & 2 NF with example. [8]
b) What do you mean by decomposition? Explain lossless decomposition & dependency preserving decomposition with suitable example. [8]

OR

- Q6)** a) Specify, Armstrong's axioms. Use Armstrong's axioms to prove the soundness of pseudo transitivity rule. [8]
b) Describe the concept of transitive dependency and explain how this concept is used to define 3 NF. [8]

SECTION - II

- Q7)** a) Define Hashing. Explain the difference between static & Dynamic Hashing. [8]
b) Explain detail use of B Tree as an indexing technique. Compare B Tree and B⁺ Tree. [10]

OR

- Q8)** a) Define Query Processing. Explain Merge Join algorithm in Query processing. [10]
b) Explain Following : [8]
i) Dense Index.
ii) Sparse Index.
iii) Clustered Index.

- Q9)** a) State and Explain Thomas Write rule. [8]
b) Explain Shadow Paging mechanism with diagram along with the benefits. [8]

OR

- Q10)** a) Explain the concept of 'transaction'. Describe ACID properties for transaction. [8]
b) Show that two phase locking protocol ensures conflict serializability. [8]

- Q11) a)** What short note on : **[8]**
- i) Data Warehouse Manager
 - ii) Pointer Swizzling Techniques
- b) What do you mean by Distributed Database system? Explain its working with proper diagram with advantages. **[8]**

OR

- Q12) a)** Explain 2 Tier & 3 Tier architecture of Databases. **[8]**
- b) Explain the need of Backup and Replication. **[8]**

