

Roll No. ....

Total No. of Questions : 13]

[Total No. of Pages : 02

## Paper ID [A0217]

(Please fill this Paper ID in OMR Sheet)

BCA (402) (Old) (Sem. - 4<sup>th</sup>)

DBMS

Time : 03 Hours

Maximum Marks : 75

### Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Nine** questions from Section - B.

### Section - A

Q1)

(15 × 2 = 30)

- a) What is database?
- b) Describe few disadvantages of databases.
- c) Define data independence.
- d) What is partial key?
- e) Differentiate referential integrity constraints and entity integrity constraints.
- f) Describe the division operation in relation algebra.
- g) Describe the types of relational calculus.
- h) What is multivalued dependency?
- i) What is the need of normalization?
- j) Describe DML statements in SQL.
- k) What is the difference between UNDO and REDO operation?
- l) What is database audit?
- m) Describe inplace updating and dirty read in concurrency problem.
- n) What is the difference between horizontal and vertical fragmentation?
- o) Describe WAL (write ahead logging) protocol.

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## Section - B

(9 × 5 = 45)

- Q2)** What is database administrator? Explain its responsibilities.
- Q3)** Explain three level architecture of database.
- Q4)** Compare Network, Hierarchical and Relational models.
- Q5)** Explain the naming conventions in design of E-R model.
- Q6)** What is relational algebra? Explain different relational algebra operations.
- Q7)** Explain different constraints in SQL.
- Q8)** What is normalization? Explain first three normal forms.
- Q9)** What are inference rules? How we can derive further rules using Armstrong rules.
- Q10)** What is database recovery? Explain immediate update and deffered update technique of recovery.
- Q11)** What is shadow paging? Explain its advantages and disadvantages.
- Q12)** Explain the structure of distributed databases.
- Q13)** What is database security? Explain different security techniques.

