

Roll No.

Total No. of Pages : 02

Total No. of Questions : 18

MCA (Sem.-1)

ADVANCED DATABASE MANAGEMENT SYSTEM

Subject Code : PGCA-1953

M.Code : 79038

Time : 3 Hrs.

Max. Marks : 70

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
- 2. SECTION - B & C. have FOUR questions each.**
- 3. Attempt any FIVE questions from SECTION B & C carrying TEN marks each.**
- 4. Select atleast TWO questions from SECTION - B & C.**

SECTION-A

Write short notes on :

- 1) What do you mean by redundancy & how can it be avoided?
- 2) What is the difference between the strong entity set and weak entity set?
- 3) Discuss the four data allocation strategies in case of Distributed Databases.
- 4) What is Relational Calculus?
- 5) What is a NOSQL database? List any 2 NOSQL databases.
- 6) Differentiate between a super key and a candidate key.
- 7) What is Multivalued dependence?
- 8) What is a Spatial Database?
- 9) Differentiate between 2-tier and 3-tier client-server architecture of database systems.
- 10) List the different activities of a Database Administrator.

SECTION-B

- 11) Define Relational Algebra. Explain the Fundamental operations of Relational Algebra with the help of examples.
- 12) What are Integrity Constraints? Explain different Integrity constraints in detail.
- 13) What is normalization? Discuss the role of normalization in database design. Explain in detail the first three forms of normalization with suitable examples.
- 14) What is a timestamp? How does the system generate timestamps? Discuss the timestamp ordering protocol for concurrency control.

SECTION-C

- 15) a) What Is a Parallel Database? What are the Benefits of Parallel Database? (5)
b) Explain concurrency control in distributed database. (5)
- 16) What is a multidatabase system? Describe its reference architecture. (10)
- 17) a) What are the advantages of a distributed database management system over a centralized DBMS? (4)
b) Explain Concurrency Control and Recovery in Distributed Databases. (6)
- 18) Discuss in detail about XML DTDs, and their types with suitable examples. (10)

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.