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Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(Automation & Robotics) (DE-I 2011 & Onward)/  
(ECE)/(ETE) (E-I 2011 Onwards) (Sem.-6)**

**RELATIONAL DATA BASE MANAGEMENT SYSTEM**

**Subject Code : BTEC-901**

**M.Code : 71125**

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**Q1. Answer briefly :**

- a) Write advantages of DBMS.
- b) Write in brief about DBMS Layers.
- c) What is clustered index organization?
- d) Define Entity, Attributes, Entity set, relationship.
- e) Differentiate between Cartesian product and natural join operations used in relational algebra.
- f) Differentiate between SQL commands DROP TABLE and DROP VIEW.
- g) What is the need of the normalization? Explain the first three steps involved in the normalization.
- h) Explain the classification of functional dependency
- i) Why is concurrency control needed?
- j) Explain in brief about Encryption and Digital Signatures.

### SECTION-B

- Q2. Differentiate between File Systems and DBMS.
- Q3. Explain the following terms in brief.
- a) Hashing
  - b) B-trees
- Q4. Explain in detail about Hierarchical Data Model.
- Q5. Write a detailed note on Relational Algebra.
- Q6. Explain in detail about Basic query Optimization Strategies.

### SECTION C

- Q7. a) Define BCNF. How does BCNF differ from 3NF? Explain with example.
- b) What is meant by multivalued dependency? Explain with example.
- Q8. a) Explain ACID properties of transaction management
- b) Explain in detail about deadlock handling.
- Q9. Explain in detail about following terms :
- a) Role Based Security
  - b) Bell-la-Padula Model

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