Code: 15A05301

R15

B.Tech II Year I Semester (R15) Supplementary Examinations June 2018
DATABASE MANAGEMENT SYSTEMS
(Common to CSE & IT)

Time: 3 hours   Max. Marks: 70

PART – A
(Compulsory Question)
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1   Answer the following: (10 X 02 = 20 Marks)
   (a)   What is data model? List any two data models.
   (b)   State the differences between total and partial constraints.
   (c)   What is division operation? Give an example.
   (d)   Define outer joins. Give an example.
   (e)   Mention the main differences between trivial and non-trivial dependencies.
   (f)   Write any two properties of decompositions.
   (g)   List the ACID properties.
   (h)   State Thomas' write rule.
   (i)   What is ordered index? Give an example.
   (j)   Mention any two differences between linear and extendible hashing.

PART – B
(Answer all five units, 5 X 10 = 50 Marks)

UNIT – I

2   Explain the architecture of database system with a neat diagram.

OR

3   Draw an E-R diagram for a core banking enterprise system and identify the derived and composite attributes, the strong and weak entity sets, and relationships.

UNIT – II

4   Explain tuple relational calculus and domain relational calculus with an example for each.

OR

5   Explain three set relational and set membership operations in SQL with its form.

UNIT – III

6   (a)   Compare and contrast between third normal form and BCNF.
     (b)   Write about loss-less join decomposition with an example.

OR

7   (a)   Discuss multivalued dependencies with fourth normal form with an example.
     (b)   Explain join dependencies with fifth normal form with an example.

UNIT – IV

8   Explain about two-phase locking and timestamp-based protocols with its transactions and schedules.

OR

9   Write and discuss any two advanced recovery techniques and their uses.

UNIT – V

10   Discuss about hash based indexing and tree based indexing with their data structures and indices.

OR

11   Explain about B^+ - tree file organization with its data structure, search and deletion operations.

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