10CS54

Fifth Semester B.E. Degree Examination, June/July 2018
Database Management Systems

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1   a.   Define : (i) Schema   (ii) Data model   (iii) Database state   (iv) Catalog   (v) DBMS. **(05 Marks)**
    b.   What are different types of End users? Discuss the main activities of each. **(05 Marks)**
    c.   Explain three schema architectures. **(06 Marks)**
    d.   List the advantages of DBMS. **(04 Marks)**

2   a.   Write the different notation used in ER diagram. **(08 Marks)**
    b.   Design an ER-diagram for keeping track of information about a company database taking into account of least five entities. **(08 Marks)**
    c.   Illustrate recursive relationship. **(04 Marks)**

3   a.   Define the following terms with an example of each:
        (i) Superkey   (ii) Domain   (iii) Tuple   (iv) Nulls.
        (v) A relational database Schemas   (vi) Entity integrity constraint. **(12 Marks)**
    b.   Explain DIVISION operation, find the quotient for the following: $\dfrac{A}{B_1}$, $\dfrac{A}{B_2}$ and $\dfrac{A}{B_3}$ where
        A, B_1, B_2 and B_3 are, **(08 Marks)**

A=

S_{NO}	P_{NO}
S_1	P_1
S_1	P_2
S_1	P_3
S_1	P_4
S_2	P_1
S_2	P_2
S_3	P_2
S_4	P_2
S_4	P_4

B_1=

P_{NO}
P_2

B_2=

P_{NO}
P_2
P_4

B_3=

P_{NO}
P_1
P_2
P_4

4   a.   Write SQL syntax with example for the following SQL statements:
        (i) CREATE TABLE   (ii) SELECT Statement   (iii) UPDATE Command
        (iv) ALTER TABLE **(08 Marks)**
    b.   Consider the following schema and write the SQL queries:
        STUDENT (Snum, Sname, Major, Level, Age)
        CLASS (Cname, Meetsat, room, fid)
        ENROLLED (Snum, Cname)
        FACULTY (Fid, Fname, deptid)
        (i)   Find the names of all Juniors (level = JR) who are enrolled in a class '5A', OR '5B'.
        (ii) List all the students name where there age is greater than average the age of all students.
        (iii) Find the names of a faculty member who teaches to class '5A' and '5B'.
        (iv) List the names of all students beginning with 'S' and ending with letter 'X'. **(12 Marks)**

PART – B

5   a.   How is view created and dropped? What are the problems associated with updating views?   **(08 Marks)**

b.   Write a note on Aggregate functions in SQL with examples.   **(12 Marks)**

6   a.   What is the need for normalization? Explain the 1NF, 2NF and 3NF with examples.   **(14 Marks)**

b.   Explain the concepts of BCNF.   **(06 Marks)**

7   a.   Define multivalued dependency and explain 4NF with an examples.   **(12 Marks)**

b.   Discuss the null value and dangling tuple problems.   **(08 Marks)**

8   a.   What are the ACID properties? Explain.   **(08 Marks)**

b.   Explain 2PL.   **(04 Marks)**

c.   What is a schedule? Explain with examples serial, non serial and conflict serializable schedules.   **(08 Marks)**

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