ONE TIME EXIT SCHEME

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10CS54

Fifth Semester B.E. Degree Examination, April 2018
Database Management Systems

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Explain the different components of DBMS, with a neat diagram. **(10 Marks)**
b. Differentiate between file oriented approach and Database approach. **(06 Marks)**
c. What are the responsibilities of DBA? **(04 Marks)**

2 a. Explain the different types of attributes, with examples. **(12 Marks)**
b. Define the following with example : i) Strong Entity type ii) Weak Entity type iii) Relationship type iv) Cardinality ratio. **(08 Marks)**

3 a. Consider the following relation schema : **(12 Marks)**
Supplier (Sid : integer , Sname : String , address : string)
Parts (Pid : integer , Pname : String , color : string)
Catalog (Sid : integer , Pid : integer, cost : real)
Write the following queries in relational algebra.
i) Find the names of suppliers who supply some red part.
ii) Find the Sids of suppliers who supply some red part or are at 221 packer street.
iii) Find the Pids of parts supplied by atleast two different suppliers.
b. Explain the following operations in relational algebra with example :
i) SELECT ii) PROJECT iii) JOIN iv) DIVISION. **(08 Marks)**

4 a. Consider the same data given in Q3(a) and write the following queries in SQL : **(12 Marks)**
i) Find the Sids of supplier who supply every part.
ii) Find the Sids of supplier who supply every red part.
iii) Find pairs of Sids such that the supplier with the first Sid charges more for some part than the supplier with the second sid.
b. Explain SELECT – FROM – WHERE structure of basic SQL query with example. **(08 Marks)**

PART – B

5 a. Explain Database stored procedure and functions. **(08 Marks)**
b. Explain the main approaches for database programming. **(06 Marks)**
c. Explain the concept of views in SQL with example. **(06 Marks)**

6 a. Explain the informal design guidelines for relation schema. **(08 Marks)**
b. Define Functional dependency. Explain BCNF, with an example. **(08 Marks)**
c. What is Normalization? Why we need normalization? **(04 Marks)**

7 a. What is Nonadditive (Lossless) Join property of a decomposition? Write an algorithm testing for non additive join property. (10 Marks)

b. Consider R(A, B, C, D, E, F, G, H, I, J) with functional dependency
F = {AB → C , A → DE , B → F , F → GH , D → IJ}
i) Find the candidate key (s) for R.
ii) Decompose R into 2NF and 3NF. (10 Marks)

8 Write short notes on :
a. Two phase locking techniques.
b. ARIES Recovery algorithm.
c. ACID properties.
d. Transaction support in SQL. (20 Marks)

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