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الفرقة الرابعة

صبراً ٢٠١٩

حاجات

Menoufia University
Faculty of Electronic Engineering
Computer Science and Engineering Dept.
Forth Year – (2018/2019)



Mid Term Exam
CSE 426: Elective course
Date: 3-4-2019
Time: 60 min

NAME: Section:

Answer the following questions:

First question:

Choose the correct answer:

1. Some of the columns of a relation are at different sites is which of the following?
(a) Data Replication (c) Vertical Partitioning
(b) Horizontal Partitioning (d) Data Localization
2. Location transparency allows for which of the following?
(a) Users to treat the data as if it is at one location (c) Programmers to treat the data as if it is at one location
(b) Managers to treat the data as if it is at one location (d) All of the above
3. A distributed database has which of the following advantages over a centralized database:
(a) Software complexity (c) better Scalability
(b) Slow Response (d) better data integrity
4. A homogeneous distributed database is which of the following:
(a) A different DBMS is used at each location and data are distributed across all nodes (c) The same DBMS is used at each location and data are distributed across all nodes
(b) The same DBMS is used at each location and data are not distributed across all nodes (d) A different DBMS is used at each location and data are not distributed across all nodes.
5. The purpose of query localization step in query processing is to reduce the communication overhead?
(a) True (b) False

Second question:

Consider the following database schema:

There are two relations:

Employee (ID, DeptID, Name, Rank, Salary)

Department (ID, Name, Location)

The relations keys are underlined, and employee.DeptID is the foreign key for Department.

The database is fragmented are the following:

Brisbane site: $\sigma_{\text{Location} = \text{"North"}} \text{Department}; \pi_{\text{ID, DeptID, Name}} \text{Employee}$

Sydney site: $\sigma_{\text{Location} = \text{"Other"}} \text{Department}; \pi_{\text{ID, DeptID, Rank, Salary}} \text{Employee}$

Consider the following query:

Select e.Name, e.Salary

From Department d, Employee e

Where d.Location = "North" and e.Salary >= 100000 and d.ID = e.DeptID

- i. Draw the query graph for the above query
- ii. Construct the query tree for the above query
 - a) After query decomposition using the global schema
 - b) after query localization based on the fragments