

## Assignment 2 (Distributed Database Systems) (due Thursday, July, 21, 2003)

1. (8-1) Replicate the following query, expressed in SQL, on our example database using the primary index:

```
SELECT EMPID  
FROM EMP  
WHERE DEPTNO = "Sales"  
AND SAL >= 1000  
AND SAL <= 1200  
AND DNAME = "IT"
```

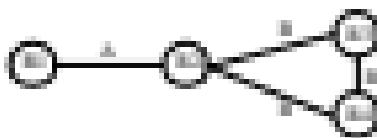
2. (8-2) Assume the relation PROD and ABC are functionally fragmented as follows:

PROD1 = $\pi_{\text{prodno}, \text{prodname}}(\text{PROD})$	ABC1 = $\pi_{\text{prodno}, \text{prodname}}(\text{ABC})$
PROD2 = $\pi_{\text{prodno}, \text{prodname}}(\text{PROD})$	ABC2 = $\pi_{\text{prodno}, \text{prodname}}(\text{ABC})$
	ABC3 = $\pi_{\text{prodno}, \text{prodname}}(\text{ABC})$

Transform the following query into a combined query on fragments, and determine whether it is answerable under given schema:

```
SELECT EMPID, DEPTNO  
FROM ABC, PROD  
WHERE ABC.PRODNO = PROD.PRODNO  
AND PROD.DNAME = "CUST-CAM"
```

3. (8-3) Consider the following join graph:



and the statistics collected for A and B. Apply the SSS-1 algorithm with  $T_{\text{max}} = 0$  and  $T_{\text{min}} = 1$ .

Table 1:

Relation	Card
A	10000
B	10000
C	20000
D	10000

Table 6

Parameter	Value	Units
FCR- $\alpha$	0.05	-
FCR- $\beta$	0.05	-
FCR- $\gamma$	0.05	-
FCR- $\delta$	0.05	-
FCR- $\epsilon$	0.05	-
FCR- $\zeta$	0.05	-

4.10.10) Which of the following vehicles are similar/similarly? (Answer for example (C) and answer (D) respectively.)

(A) - White, White, White, White, C1, White, White, C1, White, C1

(B) - White, White, White, White, White, White, White, C1, C1, C1, C1

(C) - White, White, White, White, White, White, C1, White, C1, C1

(D) - White, White, White, C1, White, White, C1, White, C1