University of Technology
Computer Science Department
Class: 3rd AI and Security branches
Time: 3 hours

Subject: Database Systems
Examiner: Dr. Saad K. Majeed

Final Exam / First Trail / 2010 -2011

ملاحظه : اجب عن خمسة اسئله على ان يكون السؤال الثاني و الخامس من ضمنها

Q.1 **a.** Compare between data integrity and data independence within DBMS.

b. Give your perception about the term of " data abstraction " , and list the functions of every level interacted with this term.

Q.2 **a.** Construct an E-R diagram for supermarket database with following segments:

البضائع Goods (Gc , Gn , Gp, Gd)
الاجنحه Suites (Sc , Sn , Sot , Sct)
العاملون Emp (Ec , En , Ea , Et)
الفروع Branh (Bc , Bn , Ba , Bm)
الاقسام Dep (Dc , Dn , Dm)

The diagram must include following relationships set : BDE between Branch , Dep , Emp and BGS between Branch , Goods and Suites.

b. Transform the E-R diagram of step " a " into tree-structure diagram .

c. For each of queries below construct an appropriate program:

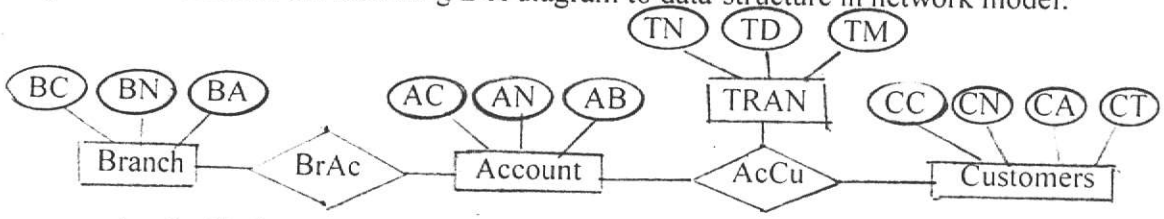
1. Find the names of all employees "En" work in Branch "Bn" = "Baghdad" and department name "Dn" = " Mansur " .
2. Find the suite open time "Sot" and the suite close time "Sct" for all goods in suite name "Sn" = " Men Cloth ".
3. Find the goods price "Gp" and goods expire date "Gd" for all goods in suite name "Sn" = "Ready Food" and En = "Ali" the chief of this suite.

Q.3 Compare the data representation in relational model with data representation In network model in term of ease of construct, ease of learning and ease of use.

Q.4 **a.** Define the concept Generalization . What are the differences between generalization and Specialization.

b. What are the advantages and disadvantages of hierarchical model .

Q.5 **a.** Transform the following E-R diagram to data-structure in network model:



b. **1.** Find customers names "CN" for all customers in branch Baghdad and account balance "AB" = 10000 dinars.

2. Update Branch name "BN" from Baghdad to Rasheed for all customers live in address Basra.

3. Add new customer with data (Ali,Baghdad,07901915142) and BA= Basra

Q.6 Discuss with examples the differences between inverted files and indexed connected files in physical DB in term of speed, size and construct.

مع التمنيات بالنجاح مدرس الماده : د. سعد كاظم مجيد