University of Technology
Computer Science Department
Branch: Software & Information Sys.
Class : 2nd

Time: 3 hrs.
Examiner: Khalil I. Ghathwan
Subject: System Analysis & Database Design
Year : 2009-2010

1st Trial

Note: Answer only (5) Questions.

Q1/***Show in details*** [*10 marks*]

a- What the DBMS can provide to manage data? And how the DBMS do that?

b-What is the key in a database? And how many types of keys are there?

Q2/ [*10 marks*]

a- Explain the two types of participation constraints with examples by E.R?

b- What is meant by 'Instance' and 'Schemas'? And what are the types of schemas?

Q3/ [*10 marks*]

a- Suppose employees of bank may have jobs at multiple branches with different jobs at different branches, show that by E.R

b- Creates two tables (***S1, S2***) and joins it by SQL? Then show the result of relational algebra ***S1***U ***S2, S1***∩ ***S2*** and ***S1- S2***

Q4/ ***Define only (5) of the terms*** [*10 marks*]

Object-oriented model, Concurrency Control, Network model, Logical data independence, Application programmers, sophisticated users, , Class Hierarchies, query evaluation engine.

Q5/ [*10 marks*]

a- Name the type of languages used in DBMS and define each type?

b- Sketch the taxonomy of file structures in physical layers and show the types of Hashing methods?

Q6/ ***If you are given the following relations***

Take (StudentID, CourseID)

RequiredForGraduation (CourseID)

Explain what the result find is if the DBMS run the query as follow:

SELECT StudentId
FROM Take ***AS*** T, RequiredForGraduation ***AS*** R
WHERE T.CourseID = R.CourseID
GROUP BY T.StudentID
HAVING COUNT (T.CourseId) = 2 [*10 marks*]