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# SCHOOL OF COMPUTING, ENGINEERING AND MATHEMATICS SEMESTER 1 EXAMINATIONS 2016/2017

**CI112/CI102**

**A Practical Introduction to Databases/Introduction to databases**

**Time allowed: TWO** hours

**Answer: ALL** questions by copying and pasting your solutions into a Word document. Create the Word document on the H drive and identify it with your student number. Make sure you write the question number against each answer.

**Items permitted:** Lab tutorial workbook – 22 pages - no new pages, printed version only.

**Items supplied:** Exam database

**Marks for whole and part questions are indicated in brackets ( )**

**NOTE: Question 6 requires you to create a database and populate it from a script supplied to you, so that you can examine it and continue to build the database. This carries no marks, but is essential for the following questions.**

## Section One – Multiple Choice

**Write your answers to Section One on your Word document e.g. Q1- f Each question in Section One is worth 3 marks**

**Question 1**

We use databases:

1. to store the persistent data for an application
2. to store the transient data for an application
3. to store programming code
4. to hide personal data on computers
5. all of the above

**Question 2**

SQL Server Management Studio is a:

a) desktop database

b) server based database

c) client front end to SQL Server

d) software application for designers

e) All of the above

## Question 3

Which of the following statements about Middleware is FALSE:

1. ODBC is a type of Middleware
2. Middleware could be used to connect Microsoft Access to an XML dataset
3. Middleware is where the database server is located
4. Middleware links front end applications with back end processing and databases
5. Middleware can be used to connect to heterogeneous data sources

## Question 4

A foreign key is:

1. a representative of the primary key from another table
2. used to make a link between two tables
3. always unique for the table
4. the way a DBMS searches tables
5. both A and B

## Question 5

Views can be used to:

1. provide only appropriate data for a task
2. increase datatypes available
3. restrict access to data
4. enforce referential integrity
5. A and C

## Section Two - Practical Exam

**When you have completed each question use Alt/Prt Scr and paste evidence of your work into a word document.**

**Remember to number the answers in your word document. We will mark your word document.**

**Question 6**

Create a new SQL Server database with your exam account as the database name. Open the file exam.sql in a Management Studio query window in your new database. Exam.sql is on your H: drive. Run the script from exam.sql and it will create two tables in your database. **Examine these tables in preparation for the next question**.

(0 marks)

## Question 7

In your new database create a table for holding complaints - tComplaint. Your table will have a unique primary key, a short complaint title, a long complaint description [if the complaint requires it] and a creation date. The business needs to record which customer the complaint is from. They also need to record which department is dealing with the complaint. Ensure that your table design supports these requirements.

(6 marks)

## Question 8

Enter appropriate data for two complaints.

(3 marks)

## Question 9

Write an SQL select statement to display all the data except short complaint title from your tComplaint table.

(3 marks)

## Now use the dbexam database on CSSQL:

**Question 10**

List firstname and surname from tmember for all the members in the computing department and sort the result by surname

(5 marks)

## Question 11

List all the loans due on the 8th June 2005 displaying book and member identifiers.

(5 marks)

## Question 12

List all the loans due in June 2005 displaying bookno and memberno.

(7 marks)

## Question 13

List all the book titles where the title includes the word *SQL*

(7 marks)

## Question 14

List book title, author and class name for all books that have a class name starting

with the word ‘fiction’

(9 marks)

## Question 15

Display and calculate the total sick leave hours for all employees.

(4 marks)

## Question 16

List all the member identifier for those who have taken more than 3 loans

(12 marks)

## Question 17

Find the name of all products sold by vendors based in the city of Lebanon. Rename the results columns VendorCity, VendorName and ProductName.

(15 marks)

## Now use the database you created in task 6 Question 18

Create a **view** that displays the complaint short titles with the name of the department linked to the complaint.

(9 marks)