

School of Computing and Information Technology**Student to complete:**

Family name
Other names
Student number
Table number

**CSCI235
Database Systems****Final Examination Paper
Session 4 2020
(2 December 2020)**

Exam duration	3 hours and 40 minutes
Weighting	40% of the subject assessment
Marks available	40 marks
Items permitted by examiner	Text-book, Lecture slides, and Tutorial notes
Directions to students	Answer all the 4 questions. Marks for each question are shown beside the question. All answers must be hand-written in A4-size or foolscap paper.

This examination is a take-it-home examination to be done on-line on the date of examination.

Version 3.0

Question 3 - (Total 12 marks)

PL/SQL

Time allocated: 45 minutes

Start time: 4:00 pm SGT

End time: 4:45 pm SGT

Submission time start: 4:40 pm SGT

Submission time end: 4:50 pm SGT

Consider the relational table DRUG listed below. The table DRUG is described by the pharmaceutical name, tradename of a drug produced, the formula of the drug as well as the list-price of the drug. Tradename refers to the name of the drug in non-scientific terms, that is the name used in business trading. For examples Panadol, Salt Water, Codeine, or Aspirin, etc.

DRUG(pharName, tradename, formula, sideEffect, listPrice)

Primary key: (pharName, tradename)

Foreign key: pharName references PHARMACEUTICAL(pharName)

You may assume the data type of the attributes are as follow:

pharName varchar2(30)

tradename varchar2(25)

formula varchar2(50)

sideEffect varchar2(50)

listPrice number(7,2)

- a) Implement a PL/SQL **function** that finds and returns total number of drugs supplied by a pharmaceutical company. Name the function TOTALDRUG, and make the name of pharmaceutical company a parameter of the function, that is, TOTALDRUG(pharName). Next, use the function in a **SELECT** statement to show the total number of drugs supplied by each pharmaceutical company. **(6.0 marks)**

- b) Implement a stored PL/SQL procedure SUPPLIER(Tradename) that lists all the pharmaceutical companies, the tradename, the formula of the drugs, and the list price such that the tradename of the drugs is the same but the drug is supplied by different pharmaceutical company. The procedure should output the tradename of the drug, and for each tradename, in the next line the list of pharmaceutical company, the formula, and the list-price separated by comma. You may use the function rpad(trim(fieldName||','),width), where fieldname is the attribute you use to store the pharmaceutical company, the formula, or the list-price, and width is the width for the field, to format the output.

A sample output of the SUPPLIER(Tradename)

Acetaminophen:

Biomed,	Acetaminophen,	\$1.80
Kleenxin,	Acetaminophen,	\$1.80
Medcineco,	Acetaminophen,	\$1.81
Medmed Shine,	Acetaminophen,	\$1.80
Peter Martin,	Acetaminophen,	\$1.80

Anxiolytic:

Medmed Shine,	Anxiolytic,	\$2.10
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Aspirin:

Medmed Shine,	Paracetamol, aspirin, caffeine citrate,	\$1.20
Peter Martin,	Paracetamol, caffeine, acetylsalicylic acid,	\$1.20

Azithromycin:

Medcineco,	Azithromycin monohydrate,	\$1.30
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Beclomethasone:

Kleenxin,	Beclometasone dipropionate, formoterol fumarate di	\$1.23
Peter Martin,	Beclometasone dipropionate,	\$1.20

Codeine:

Kleenxin,	Paracetamol, codeine phosphate, Caffeine,	\$.72
Medmed Shine,	Paracetamol, codeine phosphate,	\$.70
Peter Martin,	Paracetamol, codeine phosphate, hemihydrate,	\$.73

(6.0 marks)

===== End of Question 3 =====