Tshwane University of Technology

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YEAR: 2011

EXAMINATION: JUNE SUPPLEMENTARY

SUBJECT: DSO23BT

SUBJECT CODE: DEVELOPMENT SOFTWARE IIB

QUALIFICATION(S):

PAPER DESCRIPTION: ~~Closed~~ BOOK **DURATION:** 3 HOURS **PAPER:** ONLY

SPECIAL REQUIREMENTS

- [ ] NONE
- [ ] NON-PROGRAMMABLE POCKET CALCULATOR
- [ ] SCIENTIFIC CALCULATOR
- [ ] COMPUTER ANSWER SHEET
- [ ] GRAPH PAPER
- [ ] DRAWING INSTRUMENTS

OTHER: DATABASE

INSTRUCTIONS TO CANDIDATES: ANSWER ALL QUESTIONS

TOTAL NUMBER OF PAGES INCLUDING COVER PAGE: 5

TOTAL NUMBER OF ANNEXURES:

EXAMINER: Mr SK Mogapi **FULL MARKS:** 148

MODERATOR: Mr D Masethe **TOTAL MARKS:** 148

Question 1 [13]

Write a PL/SQL block for the following. Declare three variables to which you respectively assign values to hold your First name, Last name, and today's date. Concatenate these three variables to create a string and assign the result to the host / bind variable named g_msg. The program must prompt the user to enter first and last name and print the message below: Make use of substitution variables.

```
Enter value for Fname: LERATO
Enter value for Lname: PRINCESS

SQL> print g_msg;

G_MSG
--------------------------------------------------------------------
I P Lerato wrote DSO23BT Exam in June / July exams of 2011
```

Question 2 [21]

Write the PL/SQL block to display the number of subjects that a specific student has registered for and total subject fee for all of those subjects needed for a registered Diploma Qualification. The user must be prompted to enter the student and the following information must be displayed. Make use of substitution variables.

```
Enter value for studnr: 96445566

The student Sleepy has registered for 6 subjects for the
Information Technology Qualification which costs R8763 for subjects
alone

Enter value for studnr: 97003650

The student Barnard has registered for 3 subjects for the Cost And
Management Qualification which costs R1800 for subjects alone
```

Question 3 [17]

Create a PL/SQL program that updates the bonus for a given staff member (provided by the user) according to the following guidelines:

- If the staff member does not earn a bonus, change the bonus as follows:
  - If the SALARY is greater than 1500 and the job iS LECTURER, the BONUS should be 1200
  - If the SALARY is greater than 1500 and the job if SPECIALIST, the BONUS should be 10000
  - If the staff member is either a LIBRARIAN, ARTISAN or CLERK, the BONUS should be 600

- In all other cases, the bonus should be 500.

Make use of substitution variables.

Question 4 [6]

Write a PL\SQL block that will compute the factorial of an input positive integer and display the factorial of N. Where N is any positive integer. The output will show the factorial of ten to be 36288000, 5 factorial to be 120, Factorial =Factorial * I, where I is an incremental variable.

Sample output:
5
4
3
2
1
The factorial is 120

Sample Output
10
9
8
:
1
The factorial is 36288000

Question 5 [11]

It was decided that two (2) Faculties of the Tshwane University of Technology has to relocate from Pretoria campuses to satellite Campuses. The affected faculties are: INFORMATION SCIENCES and NATURAL SCIENCES.

Create a PL/SQL program that allows the user to enter faculty code. The record of that supplied / specified faculty code must be retrieved from the s_faculty table and stored into the **FAC_REC** variable, which must be declared using the %ROWTYPE attribute. Information about the relocating faculty must be added to a table (**S_RELOCATED_FACULTY**) that holds information about relocated faculties.

The s_Relocated_faculty table must contain the following data when you confirm the table's contents. (Use SELECT * FROM S_RELOCATED_FACULTY)

FA	FACR_NAME	FACR_HEAD
--	----------	----------
IS	FACULTY OF INFORMATION SCIENCES	800700
NS	NATURAL SCIENCES	400300

Question 6 [20]

The Dean of the ICT faculty wants to do some analysis on subject fees and has requested that subject fees be increased for all subjects that has prerequisites. For every subject which has the subject fee of less than 1500, the subject fee should be increased by 10%.For every subject which has the subject fee of more than 1500 but below1800, the subject fee should be increased by 8%.For every subject which has the subject fee of more than 1800, the subject fee should be increased by 5%. Create a PL/SQL program that uses a cursor for loop to calculate and update the subject fees.
Your report must contain the following: Subject code, subject name, subject fee, diploma name.

Question 7 [18]

The faculty of ICT advised TUT's management to add a levy fee on all subjects that has a word Systems in each subject. The levy fee is calculated 25% of that subject fee.

Create a PL/SQL block that declares a **cursor** named **SUBJECT_LEVY_CUR** and define a **record** based on that cursor with the %ROWTYPE attribute. The cursor must retrieve the Subject code, name, fee, and the 25% of levy fee, name 25% the levy fee as "**LEVY FEE**". Use an explicit cursor to FETCH values INTO a record from the **s_subject** table.

```
Subjects With Levies
*********************************************
INFORMATION SYSTEMS 1[IS1] fee is R1200 and its levy is R300
INFORMATION SYSTEMS 2[IS2] fee is R1300 and its levy is R325
INFORMATION SYSTEMS 3[IS3] fee is R1400 and its levy is R350
SYSTEMS PROGRAMMING 1[SP1] fee is R1400 and its levy is R350
MANAGEMENT INFORMATION SYSTEMS 3[MI3] fee is R1900 and its levy is R475
PRICIPLES OF INFORMATION SYSTEMS [POI] fee is R1200 and its levy is R300

PL/SQL procedure successfully completed.
```

Question 8 [14]

Write a PL\SQL block to create an index-by table that store the details of staff members that has a staff number that lies between the 808080 and 808083;. Make use of two loops. One loop to retrieve information of subjects, and the other one to display the information below.

```
ELS       CLEANER    12000
NKOSI     CLEANER    60000
JANSEN    CLEANER    12600
BASSON    CLEANER    15000
```

Question 9 [28]

Find below a sample output from the staff information report. Answer the questions that follow:

Enter value for student_number: 96004450

The gender of MKASI is F
Student age: 35

PL/SQL procedure successfully completed.

Enter value for student_number: 95665432

The gender of MASHILE is M
Student age: 38

PL/SQL procedure successfully completed.

9.1 Write a PL/SQL procedure called student_info that will receive an student number and later display the staff information report showing the student name and gender as shown. (8)

9.2 Write a PL/SQL function called birth_info to calculate the student age as shown in the sample report. (10)

9.3 Also, write the anonymous block that will execute the calling statement. (10)

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MEMORANDUM

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Contact person(s) to collect the scripts:

	Examiner	Moderator:

MAIN EXAM		SUPPLEMENTARY	X	EXIT/SPECIAL EXAM	

SUBJECT CODE:	DSO23BT
SUBJECT NAME:	DEVELOPMENT SOFTWARE IIB
EXAMINATION DATE: (For Office use only)	

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ARCADIA		
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GA-RANKUWA		
NELSPRUIT		
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