



**Tshwane University
of Technology**

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EXAMINATION

SPECIAL

SUBJECT:

DEVELOPMENT SOFTWARE IIB

SUBJECT CODE:

DSO23BT/ISY34AB / sFW20BT

QUALIFICATION(S)

ND: IT

PAPER:

ONLY

PAPER DESCRIPTION:

CLOSED BOOK

DURATION:

3 HOURS

SPECIAL REQUIREMENTS

☒ NONE

☐ NON-PROGRAMMABLE POCKET CALCULATOR

☐ SCIENTIFIC CALCULATOR

☒ COMPUTER ANSWER SHEET

☐ GRAPH PAPER

☐ DRAWING INSTRUMENTS

OTHER:

INSTRUCTIONS TO CANDIDATES:

ANSWER ALL QUESTIONS

TOTAL NUMBER OF PAGES INCLUDING COVER PAGE:

6

TOTAL NUMBER OF ANNEXURES:

EXAMINER:

SK MOGAPI

TOTAL MARKS:

100

MODERATOR:

FULL MARKS:

102

QUESTION 1

[6]

Write a PL/SQL block that will use a **host** variable to calculate the sum of the number of first, second and third year students in the ICT faculty. The number of first year, second year and third year students must be supplied using a DEFINE statement (using numbers of 350, 200 and 150 for the first, second and third years respectively). Ensure that the output is displayed as shown.

Ensure that the declaration statement and the statement to display the data are included in your script.

PL/SQL procedure successfully completed.

G_ICT#

700

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

[13]

The Human Resources department would like to send a report to the University's Hiring committee to improve employees' working conditions. But first, they need a sample of four employees recently hired. Write a PL/SQL anonymous block that declares an INDEX BY TABLE OF RECORDS to hold and display data about 4 employees whose employee number falls between 800115 and 800118 as shown below.

```
READY ,800115 works as a LIBRARIAN ,earns R 24000
BARENDSEN ,800116 works as a LIBRARIAN ,earns R 30000
DE WET ,800117 works as a LIBRARIAN ,earns R 36000
DE WET ,800118 works as a LIBRARIAN ,earns R 36000
```

QUESTION 4

[20]

After the last protests by all University's cleaners, management has decided to improve their salary. Create a PL/SQL block making use of a cursor with a parameter that specifies a job. By making use of the FOR UPDATE clause, you should implement the recommendations by management. Management has requested that salaries for all employees working as CLEANERS should be doubled and that the rest of staff receive a 10% increase.

The program should not be case sensitive as shown below:

```
Enter value for job: librarian

These employees work as  LIBRARIANS
=====
Mr/Mrs READY
-----> Office number:L10
-----> Salary : R24000
Mr/Mrs BARENDSEN
-----> Office number:L10
-----> Salary : R30000
Mr/Mrs DE WET
-----> Office number:L10
-----> Salary : R36000
Mr/Mrs DE WET
-----> Office number:L10
-----> Salary : R36000
Their salaries have been increased by 10%

PL/SQL procedure successfully completed.
```

Enter value for job: Cleaner

These employees work as CLEANERS

=====

Mr/Mrs ELS

-----> Office number:C05

-----> Salary : R48000

Mr/Mrs NKOSI

-----> Office number:Z99

-----> Salary : R240000

Mr/Mrs JANSEN

-----> Office number:C05

-----> Salary : R50400

Mr/Mrs BASSON

-----> Office number:C05

-----> Salary : R60000

Their salaries have been increased by 100%

PL/SQL procedure successfully completed.

QUESTION 5

[12]

Some staff members have left the University, you are supplied with a list of their staff numbers and required to remove them from the database. However, some numbers on this list are not correct. Write a PL/SQL anonymous block to deal with this issue by displaying an appropriate message when you input these incorrect numbers. Note that you have to handle this exception explicitly.

Enter value for id: 8080547

This employee does not exist

PL/SQL procedure successfully completed.

Enter value for id: 808082

Details for Mr/Mrs JANSEN have been successfully removed from the system

PL/SQL procedure successfully completed.

QUESTION 6

[15]

Create a procedure named subj_info that receives a subject code as parameter and displays information as shown in the sample output below. The procedure makes use of a CURSOR to retrieve and display the required information. Execute the procedure using any subject code. Show how you would accomplish this.

When you invoke the procedure with **SP1** as the subject code, this is the expected output:

SMUTS,12-JAN-70 registered for SYSTEMS PROGRAMMING 1 on 10-JAN-97
SLEEPY,07-APR-72 registered for SYSTEMS PROGRAMMING 1 on 10-JAN-97

QUESTION 7

[15]

A. Create a function named calc_tax that receives an employee's salary as a parameter and then returns 14% of that amount as tax.

/5/

B. Create a procedure called display_tax that receives a staff number as a parameter , computes the corresponding payable tax by making use of the function created in **Question 7 A**, and then displays information as shown in the sample below. Execute the procedure using any staff number. Show how you would accomplish this.

/10/

READY works as a LIBRARIAN ,earns R 26400 and pays R 3696 as tax

PL/SQL procedure successfully completed.

STUDENT DATABASE

