



**Tshwane University  
of Technology**

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**YEAR:** 2014  
**EXAMINATION:** A August Exit/Special

**SUBJECT NAME:**

Development Software IIB/Software Skills IIB

**SUBJECT CODE:**

DSO23BT/SFW20BT

**QUALIFICATION(S):**

ND: Business Informatics  
ND: Software Development  
ND: Cost and Management Accounting  
ND Technical Programming

**PAPER DESCRIPTION:** Computer-based

**DURATION:** 4 Hrs

**PAPER:** Only

**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:** 7

**TOTAL NUMBER OF ANNEXURES:** 0

**EXAMINER:** Mr S.K. Mogapi

**FULL MARKS:** 106

**MODERATOR:** Ms MT Dlamini

**TOTAL MARKS:** 100



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### INSTRUCTIONS TO CANDIDATES

This paper is a practical paper. The students are required to use a note pad that must be uploaded into a folder which is saved as **student number**. Send the folder to the lecturer's computer or upload it to ec. Name the notepad as **DSO23BT\_EXAM\_S1\_2014**. Write your details at beginning of your note pad and list your questions appropriately. The database to be used is **BUDGET** and will be distributed to the students' computer for them to upload it to their computer's hard drive. Answer **ALL** the questions.  
**REQUIREMENTS:** Never tear any page from this question paper. Complete this cover page before you start answering the questions.

**Time : 240 Minutes/4Hours**

**Full Marks : 106**

**Total Marks : 100**

**Total Pages : 7 including this page**

**Examiner : MR SK MOGAPI**

**Moderator : Ms MT DLAMINI**

Sign below to confirm that you understand the instructions above.

**SIGNATURE**

### DEPARTMENT OF SOFTWARE ENGINEERING

**S1 2014**

**EXAM**

**CHAPTERS : CH1 - CH10**

**SUBJECT CODE : DSO23BT/SFW20BT**

**SUBJECT NAME : DEVELOPMENT SOFTWARE IIB  
: SOFTWARE SKILLS IIB**

**COURSE NAME : SOFTWARE ENGINEERING**

Lecturer's Name

Venue

PC Number

### STUDENT NUMBER

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| Q 1 | Q 2 | Q 3 | Q 4 | Q 5 | Q 6 | Q 7 |
|-----|-----|-----|-----|-----|-----|-----|
| 10  | 18  | 10  | 15  | 10  | 18  | 25  |
|     |     |     |     |     |     |     |

**Full Marks :106; Total Marks :100**

**%**

**Question 1**

**[10]**

At a state college, tuitions fees charge are R750.00 per subject, with a maximum charge of R4,500.00 no matter how many subjects are registered. Thus a student registering 4 subjects pays R3,000.00, whereas a student taking 8 subjects would pay the maximum charge of R4,500.00. Write a PL/SQL block program in which the number of subject is input and the tuition fees charge is output.

**Enter value for no\_of\_subject: 4**

The total fees amount: 3000

Discount: 0

The total fees payable: 3000

**Enter value for no\_of\_subject: 8**

The total fees amount: 6000

Discount: 1500

The total fees payable: 4500

**Question 2**

**[18]**

The powers of 2 are 1, 2, 4, 8, 16, 32, 64 and so on. Write a PL/SQL program that will compute and display the first power of 2 that exceeds 2,000 using BASIC loop.

```
1
one
2
two
4
four
8
eight
16
sixteen
32
thirty-two
64
sixty-four
128
one hundred twenty-eight
256
two hundred fifty-six
512
five hundred twelve
1024
one thousand twenty-four
*****
No. of power of 2 < 1000: 11 => eleven
Sum of power of 2 < 1000: 2047 => two thousand forty-seven
```

**Question 3**

**[10]**

Create a PL/SQL block that will prompt the user to input an employee number and then displays the relevant information about the employee as shown below:

**Enter the value for:EmployeeNumber: 1**

Employee STELLA , T aged 66 will receive a salary review in 12 months which will be in APRIL 2015

**Enter the value for:EmployeeNumber: 3**

Employee MATTHEW , P aged 64 will receive a salary review in 12 months which will be in APRIL 2015

**Question 4**

**[15]**

*Write a PL/SQL block of record that will prompt the user to enter the employee number and then displays the relevant information about the employee refer to the sample output given below.*

**Enter value for staffno: 7**

Nick G.(ENGINEER) age 46 years works in dept. DISTRIBUTION ENGINEERING under Williams

PL/SQL procedure successfully completed.

**Enter value for staffno: 13**

Leah B.(ENGINEER) age 50 years works in dept. SUBSTATION ENGINEERING under STELLA

**Question 5**

[10]

Create a PL/SQL block record that displays the relevant information about the employee who's First Name begins with the letters "MIL". The program should display the employee name, ID and the SSN showing only the last 3 numbers with the rest of numbers left padded and right padded after the last number as shown below.

MILCZSKI(5-SSN\*\*\*\*\*749\*\*\*\*\*) is assigned 3 projects

**QUESTION 6**

[18]

Due to high inflation rate and high cost of production, the company decided that some employees who has attain a particular age will be encouraged to take early retirement. Write a PL/SQL block that defines record based cursor using %ROWTYPE that will receive the proposed retirement age and pass it as a parameter to the cursor and later print the employees' information having that age or more as displayed in the sample output below. Make use of explicit cursor and basic loop to read and processed the record from the cursor.

Enter value for retire\_age: 55

TYSON STELLA 66 has been employed as a MANAGER for SUBSTATION ENGINEERING department for 43 years  
PALINSKI MATTHEW 64 has been employed as a MANAGER for TRANSMISSION ENGINEERING department for 40 years  
BENFELDT KATIE 62 has been employed as a MANAGER for SUBSTATION CONSTRUCTION department for 45 years  
MILCZSKI WILLIAM 62 has been employed as a MANAGER for DISTRIBUTION ENGINEERING department for 38 years  
MILLER ANNE 61 has been employed as a MANAGER for DISTRIBUTION CONSTRUCTION department for 42 years  
HAMPTON JOEL 56 has been employed as a ENGINEER for DISTRIBUTION ENGINEERING department for 35 years  
BRYSON LEAH 56 has been employed as a ENGINEER for SUBSTATION ENGINEERING department for 34 years  
MILLER KEVIN 56 has been employed as a MANAGER for TRANSMISSION CONSTRUCTION department for 36 years

## QUESTION 7

[25]

A PL/SQL named block is required to generate a sample work order and project report as follows:

```
Enter value for work_order_no: 30001

Wo# 30001 - main project S1000000 (Build 345 kv substation 3467 ) report
=====
The Sub 3467 - Grade Foundation was assigned to JOEL of SUBSTATION ENGINEERING
department

The total number of hours is: 510
The total material and equipment is: 14593

Enter value for work_order_no: 30001

Wo# 30009 - main project T1000001(Build 50 miles of transmission line to
substation 3467 ) report
=====
The Construct 20 miles of 345 kv transmission line from Fremont to Elkhorn was
assigned to LEAH of TRANSMISSION ENGINEERING department

The total number of hours is: 0
The total material and equipment cost is: 65000
```

- 7.1 Write a procedure called work order report that will receive the work order number from a calling program and at end, generate the header and body of the work order report as display below: (10)

```
Wo# 30001 - main project S1000000 (Build 345 kv substation 3467 ) report
=====
The Sub 3467 - Grade Foundation was assigned to JOEL of SUBSTATION
ENGINEERING department
```

- 7.2 Write a function called work order input that will receive the work order number as a input and then generate the footer of the report (total number of hours and the total material/equipment cost) as display below: (10)

**The total number of hours is: 510**

**The total material and equipment is: 14593**

- 7.3 Write the PL/SQL anonymous block that will execute the calling statement and then print and display the sample report as shown above. (5)

## BUDGET DATABASE

