



**Tshwane University  
of Technology**

*We empower people*

**YEAR:** 2013  
**EXAMINATION:** February Exit

**SUBJECT NAME:**  
**SUBJECT CODE:**  
**QUALIFICATION(S):**

SFW20BT DSO23BT

SOFTWARE SKILLS IIB

**PAPER DESCRIPTION:** Closed Book

**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:** Select one

**TOTAL NUMBER OF PAGES INCLUDING COVER PAGE:** 5

**TOTAL NUMBER OF ANNEXURES:** 6

**EXAMINER:** MR T MADZUNYE

**FULL MARKS:** 100

**MODERATOR:** MR G LEROKE

**TOTAL MARKS:** 100

**QUESTION1****[10]**

A program is required to receive as parameter, the length and width of a room and calculate the area of the room. Determine the price of wall-to-wall carpet if the price of the carpet is R12,58 per square meters. However a discount of 10% is given to a customer buying carpet for more than 144 square meters. Write the measurement of the room and the price to pay.

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**QUESTION 2****[15]**

2.1 Add a new project D1000005 named "The upgrade of hardware" which is requested that it is completed on the last day of the year. The project will be focusing in the Western Douglas County and must be assigned to the department of TRANSMISSION ENGINEERING. Assigned to 13. (7)

**Question 3****[15]**

The Institution determines the students' year marks using the system of weighing the continuous assessment marks that the student obtained from series of test written. The system also determines whether the student has 'Passed or failed' and equally prints the symbols. Write a program to Accept two test marks from the user, compute the weighted average (test1 weight is 40%, test2 weight is 60%), determine whether the student has 'Passed' or 'Failed' (a pass mark is 50% and above) and print the symbol based on the following table:

Average marks	Symbol
75 and above	A
70 – 74	B
65 – 69	C
55 – 64	D
40 – 54	E
30 – 39	R
29 and below	F

**NB USE IF STATEMENT ONLY**

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#### QUESTION 4

[15]

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**

EMPLOYEE	JOB	AGE	DEPARTMENT
TYSON STELLA	MANAGER	60	SUBSTATION ENGINEERING
PALINSKI MATTHEW	MANAGER	59	TRANSMISSION ENGINEERING
MILCZSKI WILLIAM	MANAGER	57	DISTRIBUTION ENGINEERING
BENFELDT KATIE	MANAGER	56	SUBSTATION CONSTRUCTION
MILLER ANNE	MANAGER	55	DISTRIBUTION CONSTRUCTION

PL/SQL procedure successfully completed.

**Enter value for retire\_age: 59**

EMPLOYEE	JOB	AGE	DEPARTMENT
TYSON STELLA	MANAGER	60	SUBSTATION ENGINEERING
PALINSKI MATTHEW	MANAGER	59	TRANSMISSION ENGINEERING

PL/SQL procedure successfully completed.

## QUESTION 5

[20]

A project co-ordinator and assignment report is required. Write a PL/SQL program block that will receive the employee\_id of the employee assigned to a particular project and later display the report as shown below. Otherwise, if for any reasons the report could not be extracted, the situation must be handled as follows:

- If the employee or staff code does not exist, use ORACLE PREDEFINE error handler to deal with the error.

**Enter value for project\_supervisor: 99**

**This staff does not exist / valid, Re-enter!**

PL/SQL procedure successfully completed.

- If the employee has been assigned more than one project, use ORACLE NON-PREDEFINE (ORA -01422) error handler to deal with the error.

**Enter value for project\_supervisor: 12**

**Staff is supervising more projects - should be excused!**

PL/SQL procedure successfully completed.

- If the employee has been assigned one and only one project and he or she has put in more than 25 years active, he/she is allowed to be assigned to handle any particular projects and a report should be printed as shown (sample report):

**Enter value for project\_supervisor: 10**

**Project D1000003-Build feeder circuit 207 was assigned to XXXXXXX, A  
from DISTRIBUTION ENGINEERING**

- Otherwise, If the employee has been assigned one project and he or she has put in less or 25 years active service, use ORACLE USER DEFINE error handler to deal with such case and a report should be printed as shown below:

**Enter value for project\_supervisor: 11**

**Staff still in-experience to handle this project**

PL/SQL procedure successfully completed.

## QUESTION 6

[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**

PL/SQL procedure successfully completed.

**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**

PL/SQL procedure successfully completed.

- 6.1 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**

- 6.2 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**

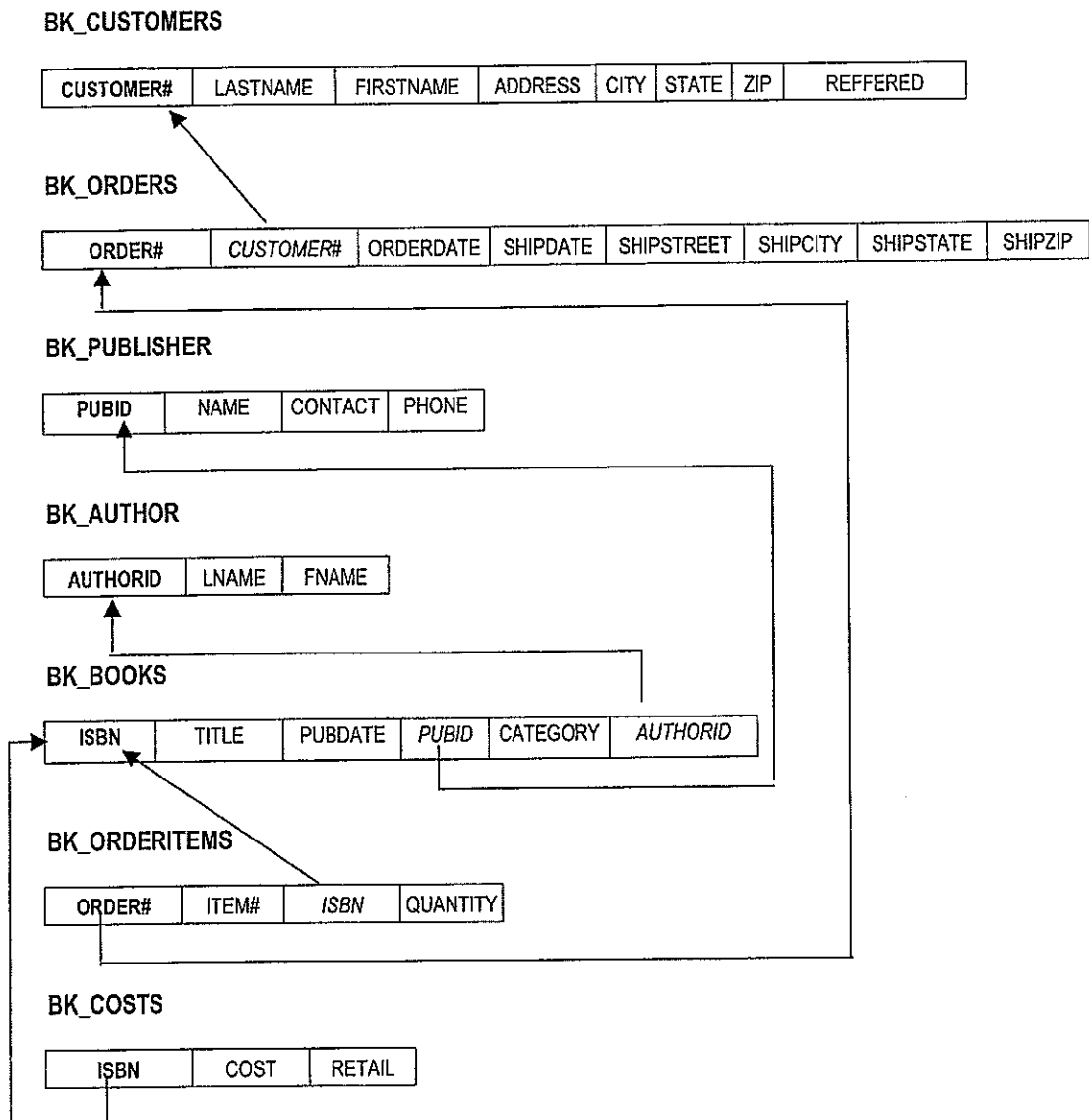
**The total material and equipment is: 14593**

- 6.3 Write the PL/SQL anonymous block that will execute the calling statement and then print and display the report . (5)

# KALEIDOSCOPE

# DATABASE

**Source:** Oracle9i: SQL, with an Introduction to PL/SQL  
Morris-Murphy, L  
ISBN: 0-619-06475-7  
Course Technology  
2003



## BK\_COSTS

Name	Null?	Type
ISBN	NOT NULL	VARCHAR2(10)
COST		NUMBER(5,2)
RETAIL		NUMBER(5,2)

ISBN	COST	RETAIL
1059831198	18.75	30.95
0401140733	14.2	22
4981341710	37.8	59.95
8843172113	31.4	55.95
3437212490	12.5	19.95
3957136468	47.25	75.95
1915762492	21.8	25
9959789321	37.9	54.5
2491748320	48	89.95
0299282519	19	28.75
8117949391	5.32	8.95
0132149871	17.85	29.95
9247381001	15.4	31.95
2147428890	21.85	39.95

14 rows selected.

## BK\_ORDERITEMS

Name	Null?	Type
ORDER#	NOT NULL	NUMBER(4)
ITEM#	NOT NULL	NUMBER(2)
ISBN		VARCHAR2(10)
QUANTITY		NUMBER(3)

ORDER#	ITEM#	ISBN	QUANTITY
1000	1	3437212490	1
1001	1	9247381001	1
1001	2	2491748320	1
1002	1	8843172113	2
1003	1	8843172113	1
1003	2	1059831198	1
1003	3	3437212490	1
1004	1	2491748320	2
1005	1	2147428890	1
1006	1	9959789321	1
1007	1	3957136468	3
1007	2	9959789321	1
1007	3	8117949391	1
1007	4	8843172113	1
1008	1	3437212490	2
1009	1	3437212490	1
1009	2	0401140733	1
1010	1	8843172113	1
1011	1	2491748320	1
1012	1	8117949391	1
1012	2	1915762492	2
1012	3	2491748320	1
1012	4	0401140733	1
1013	1	8843172113	1
1014	1	0401140733	2
1015	1	3437212490	1
1016	1	2491748320	1
1017	1	8117949391	2



ORDER#	ITEM#	ISBN	QUANTITY
1018	1	3437212490	1
1018	2	8843172113	1
1019	1	0401140733	1
1020	1	3437212490	1

32 rows selected.

## BK\_BOOKS

Name	Null?	Type
ISBN	NOT NULL	VARCHAR2(10)
TITLE		VARCHAR2(30)
PUBDATE		DATE
PUBID		NUMBER(2)
CATEGORY		VARCHAR2(12)
AUTHORID		VARCHAR2(4)

ISBN	TITLE	PUBDATE	PUBID	CATEGORY	AUTH
1059831198	BODYBUILD IN 10 MINUTES A DAY	21-JAN-01	4	FITNESS	S100
0401140733	REVENGE OF MICKEY	14-DEC-01	1	FAMILY LIFE	J100
4981341710	BUILDING A CAR WITH TOOTHPICKS	18-MAR-02	2	CHILDREN	K100
8843172113	DATABASE IMPLEMENTATION	04-JUN-99	3	COMPUTER	P105
3437212490	COOKING WITH MUSHROOMS	28-FEB-00	4	COOKING	B100
3957136468	HOLY GRAIL OF ORACLE	31-DEC-01	3	COMPUTER	A100
1915762492	HANDCRANKED COMPUTERS	21-JAN-01	3	COMPUTER	W105
9959789321	E-BUSINESS THE EASY WAY	01-MAR-02	2	COMPUTER	J100
2491748320	PAINLESS CHILD-REARING	17-JUL-00	5	FAMILY LIFE	R100
0299282519	THE WOK WAY TO COOK	11-SEP-00	4	COOKING	S100
8117949391	BIG BEAR AND LITTLE DOVE	08-NOV-01	5	CHILDREN	R100
0132149871	HOW TO GET FASTER PIZZA	11-NOV-02	4	SELF HELP	S100
9247381001	HOW TO MANAGE THE MANAGER	09-MAY-99	1	BUSINESS	W100
2147428890	SHORTEST POEMS	01-MAY-01	5	LITERATURE	W105

14 rows selected.

## BK\_AUTHOR

Name	Null?	Type
AUTHORID	NOT NULL	VARCHAR2(4)
LNAME		VARCHAR2(10)
FNAME		VARCHAR2(10)

AUTH	LNAME	FNAME
S100	SMITH	SAM
J100	JONES	JANICE
A100	AUSTIN	JAMES
M100	MARTINEZ	SHEILA
K100	KZCHSKY	TAMARA
P100	PORTER	LISA
A105	ADAMS	JUAN
B100	BAKER	JACK
P105	PETERSON	TINA
W100	WHITE	WILLIAM
W105	WHITE	LISA
R100	ROBINSON	ROBERT
F100	FIELDS	OSCAR
W110	WILKINSON	ANTHONY

14 rows selected.

## BK\_PUBLISHER

Name	Null?	Type
PUBID	NOT NULL	NUMBER(2)
NAME		VARCHAR2(23)
CONTACT		VARCHAR2(15)
PHONE		VARCHAR2(12)

PUBID	NAME	CONTACT	PHONE
1	PRINTING IS US	TOMMIE SEYMOUR	000-714-8321
2	PUBLISH OUR WAY	JANE TOMLIN	010-410-0010
3	AMERICAN PUBLISHING	DAVID DAVIDSON	800-555-1211
4	READING MATERIALS INC.	RENEE SMITH	800-555-9743
5	REED-N-RITE	SEBASTIAN JONES	800-555-8284

## BK\_ORDERS

Name	Null?	Type
ORDER#	NOT NULL	NUMBER(4)
CUSTOMER#		NUMBER(4)
ORDERDATE		DATE
SHIPDATE		DATE
SHIPSTREET		VARCHAR2(18)
SHIPCITY		VARCHAR2(15)
SHIPSTATE		VARCHAR2(2)
SHIPZIP		VARCHAR2(5)

ORDER#	CUSTOMER#	ORDERDATE	SHIPDATE	SHIPSTREET	SHIPCITY	SH	SHIPZ
1000	1005	31-MAR-03	02-APR-03	1201 ORANGE AVE	SEATTLE	WA	98114
1001	1010	31-MAR-03	01-APR-03	114 EAST SAVANNAH	ATLANTA	GA	30314
1002	1011	31-MAR-03	01-APR-03	58 TILA CIRCLE	CHICAGO	IL	60605
1003	1001	01-APR-03	01-APR-03	958 MAGNOLIA LANE	EASTPOINT	FL	32328
1004	1020	01-APR-03	05-APR-03	561 ROUNDABOUT WAY	TRENTON	NJ	08601
1005	1018	01-APR-03	02-APR-03	1008 GRAND AVENUE	MACON	GA	31206
1006	1003	01-APR-03	02-APR-03	558A CAPITOL HWY.	TALLAHASSEE	FL	32307
1007	1007	02-APR-03	04-APR-03	9153 MAIN STREET	AUSTIN	TX	78710
1008	1004	02-APR-03	03-APR-03	69821 SOUTH AVENUE	BOISE	ID	83707
1009	1005	03-APR-03	05-APR-03	9 LIGHTENING RD.	SEATTLE	WA	98110
1010	1019	03-APR-03	04-APR-03	384 WRONG WAY HOME	MORRISTOWN	NJ	07960
1011	1010	03-APR-03	05-APR-03	102 WEST LAFAYETTE	ATLANTA	GA	30311
1012	1017	03-APR-03		1295 WINDY AVENUE	KALMAZOO	MI	49002
1013	1014	03-APR-03	04-APR-03	7618 MOUNTAIN RD.	CODY	WY	82414
1014	1007	04-APR-03	05-APR-03	9153 MAIN STREET	AUSTIN	TX	78710
1015	1020	04-APR-03		557 GLITTER ST.	TRENTON	NJ	08606
1016	1003	04-APR-03		9901 SEMINOLE WAY	TALLAHASSEE	FL	32307
1017	1015	04-APR-03	05-APR-03	887 HOT ASPHALT ST	MIAMI	FL	33112
1018	1001	05-APR-03		95812 HIGHWAY 98	EASTPOINT	FL	32328
1019	1018	05-APR-03		1008 GRAND AVENUE	MACON	GA	31206
1020	1008	05-APR-03		195 JAMISON LANE	CHEYENNE	WY	82003

21 rows selected.

## BK\_CUSTOMERS

Name	Null?	Type
CUSTOMER#	NOT NULL	NUMBER(4)
LASTNAME		VARCHAR2(10)
FIRSTNAME		VARCHAR2(10)
ADDRESS		VARCHAR2(20)
CITY		VARCHAR2(12)
STATE		VARCHAR2(2)
ZIP		VARCHAR2(5)
REFERRED		NUMBER(4)

CUSTOMER#	LASTNAME	FIRSTNAME	ADDRESS	CITY	ST	ZIP	REFERRED
1001	MORALES	BONITA	P.O. BOX 651	EASTPOINT	FL	32328	
1002	THOMPSON	RYAN	P.O. BOX 9835	SANTA MONICA	CA	90404	
1003	SMITH	LEILA	P.O. BOX 66	TALLAHASSEE	FL	32306	
1004	PIERSON	THOMAS	69821 SOUTH AVENUE	BOISE	ID	83707	
1005	GIRARD	CINDY	P.O. BOX 851	SEATTLE	WA	98115	
1006	CRUZ	MESHIA	82 DIRT ROAD	ALBANY	NY	12211	
1007	GIANA	TAMMY	9153 MAIN STREET	AUSTIN	TX	78710	1003
1008	JONES	KENNETH	P.O. BOX 137	CHEYENNE	WY	82003	
1009	PEREZ	JORGE	P.O. BOX 8564	BURBANK	CA	91510	1003
1010	LUCAS	JAKE	114 EAST SAVANNAH	ATLANTA	GA	30314	
1011	MCGOVERN	REESE	P.O. BOX 18	CHICAGO	IL	60606	
1012	MCKENZIE	WILLIAM	P.O. BOX 971	BOSTON	MA	02110	
1013	NGUYEN	NICHOLAS	357 WHITE EAGLE AVE.	CLERMONT	FL	34711	1006
1014	LEE	JASMINE	P.O. BOX 2947	CODY	WY	82414	
1015	SCHELL	STEVE	P.O. BOX 677	MIAMI	FL	33111	
1016	DAUM	MICHELL	9851231 LONG ROAD	BURBANK	CA	91508	1010
1017	NELSON	BECCA	P.O. BOX 563	KALMAZOO	MI	49006	
1018	MONTIASA	GREG	1008 GRAND AVENUE	MACON	GA	31206	
1019	SMITH	JENNIFER	P.O. BOX 1151	MORRISTOWN	NJ	07962	1003
1020	FALAH	KENNETH	P.O. BOX 335	TRENTON	NJ	08607	

20 rows selected.