

**UNIVERSITY OF SWAZILAND
SUPPLEMENTARY EXAMINATION, JULY, 2007**

Title of the Paper : STRUCTURED PROGRAMMING - II

Course Number : CS244

Time Allowed : Three (3) Hours

Instructions: Submit pseudo code, files of program and results. Use the last 10 minutes to check your program and results files on the given diskettes. Read the paper completely before starting to work on the problem.

The names of program and report files should be –

A:\-----.PAS (Program file) and
A:\-----.TXT (Result file)

The dashes in file names are six digits of your id.

Special requirements: For each student

- 1. A networked / stand alone PC with working Turbo Pascal system.**
- 2. An accessible floppy drive & disk.**

This paper should not be opened until permission has been granted by the invigilator.

MARKING SCHEME: Pseudo code (30 %), Results (20 %), Program (50 %)

PROBLEM: Information about salaries paid to the casual / part time workers by UNISWA in a month are given in a text file 'SALDATA.TXT'. Each record of this file has the following -

Name	15 characters
Id	6 digits - long integer
Normal hours worked	Integer - 3 digits
Over time hours worked	Integer - 3 digits
Special Payments Code(PCODE)	Integer - 3 digits
Special Payments (SPAY)	Integer - 4 digits (in Emalangeni)
Special Deductions code (DCODE)	Integer - 3 digits
Special Deductions (SDED)	Integer - 4 digits (in Emalangeni)

Each field has been separated by a space character and Id in sentinel record is zero.

Example of a record -

```
BENNET L.A.      120786 170 010 001 1050 101 0500
                1         2         3         4 {ARE COLUMN NOS}
12345678901234567890123456789012345678901
```

Write pseudo code and a corresponding well documented and properly indented Pascal program that does the following -

1. Reads in all the data from 'SALDATA.TXT' and computes for each worker -
2. Gross Salary = 15 x normal hours worked + 30 x overtimes hours worked.
3. Net income = Gross salary + Special payments - Special deductions - Tax
4. A function subprogram should be declared to find Tax as follows -

Tax is 30% of Net income, if Net Income is 4000 or more,
Tax is 15% of Net income, if 2000 < Net Income < 4000,
Tax is 10% of Net income, if Net Income > 1000, but less than or equal to 2000,
Otherwise there is no Tax.

The program displays the information on a report file ('----- .TXT'). The six dashes in the report file name are six digits of your id number.

NOTES:

4. The contents of 'SALDATA.TXT' are -

BENNET L.A.	120786	170	010	001	1050	001	0500
THWALA D.M.	120251	080	000	000	0000	002	0400
BEATRIC S.P.	120786	150	016	000	0000	003	0150
DVUBA M.	120197	162	012	001	1000	004	0200
SIBISI J.N.	120630	078	010	001	1050	005	0250
VILAKATI K.	120246	151	020	001	0500	006	0450
SISA D.M.	120240	080	010	000	0000	007	0100
SENTINEL DATA	000000	000	000	000	0000	000	0000

The report lay out should be --

REPORT PRODUCED BY THE PROGRAM OF

<YOUR ID>

UNIVERSITY OF SWAZILAND,
CASUAL / PART TIME WORKER'S PAYROLL,
MAY 2007

ID	GROSS	TAX	(PCODE) SPAY	(DCODE) SDED	NET INCOME	
-----	-----	-----	(---)	-----	(---)	-----
-----	-----	-----	(---)	-----	(---)	-----
-----	-----	-----	(---)	-----	(---)	-----

...

SUMMARY
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TOTAL OF GROSS = -----
 TOTAL OF TAX = -----
 TOTAL OF SPAY = -----
 TOTAL OF SDED = -----
 TOTAL OF NET INCOME = -----

<END OF EXAMINATION PAPER>