

**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION MAY, 2014 (SEM-II)**

Title of the Paper : STRUCTURED PROGRAMMING - II

Course Number : CS244

Time Allowed : Three (3) Hours

Instructions: Submit pseudo code on the answer script and all your files (program, data, report and any other) in the root directory of your **Examination userid**. The **Examination userid, password, tree, context and server** will be given to you by the chief invigilator. Include all file specifications in the root of your F:\ in your answer script. This exam has pages from 1 to 3.

Use the last 10 minutes to check the submitted files and print the program and report files. Submit answer script, the signed printed copy of your program and report files.

Read the paper completely before starting to work on the problem.

The names of program and report files should be –

-----.cpp (Program file) and
-----.TXT (Result file)

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

Special requirements: For each student

- 1. A networked PC with working C++ system.**
- 2. An accessible secure network disk (F:\) & Printing facility.**

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 WORLD VISION, SWAZILAND in a month are given in a text file 'DATA2014.TXT'. Each record of this file has the following -

Name	15 characters
Employee 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 Employee Id in sentinel 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 program in C++ that does the following –

1. Reads in all the data from 'DATA2014.TXT' and computes for each worker -
2. Gross Salary = 15 * normal hours worked + 30 * overtimes hours worked.
3. Net Pay = Gross salary + Special payments – Special deductions – Tax
4. A function should be declared to find Tax (only in Emalangeni) as follows –

Tax is 30% of Gross Salary, if Gross Salary is 4000 or more,
Tax is 15% of Gross Salary, if 2000 < Gross Salary < 4000,
Tax is 10% of Gross Salary, if Gross Salary > 1000, but less than or equal to 2000,
Otherwise Tax is zero.

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: The contents of 'DATA2014.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>

WORLD VISION, SWAZILAND,
CASUAL / PART TIME WORKER'S PAYROLL,
MAY 2014

ID	SALARY		PAYMENTS		DEDUCTIONS		NET
	GROSS	TAX	(PCODE)	SPAY	(DCODE)	SDED	PAY
-----	-----	-----	(---)	-----	(---)	-----	-----
-----	-----	-----	(---)	-----	(---)	-----	-----
-----	-----	-----	(---)	-----	(---)	-----	-----
...							

SUMMARY

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TOTAL OF GROSS SALARY = -----

TOTAL OF TAX DEDUCTED = -----

TOTAL OF SPAY = -----

TOTAL OF SDED = -----

TOTAL OF NET PAY = -----

<END OF EXAMINATION PAPER>