

**UNIVERSITY OF SWAZILAND
FINAL EXAMINATION, MAY 2006**

Title of the Paper : PASCAL

Course Number : CS245 (II), in Computer Lab (PRACTICAL EXAMINATION)

Time Allowed : Three (3) Hours

Instructions: Submit pseudocode, files of program and results. Use the last 10 minutes to check your program and results. Read the paper completely before starting to work on the problem. The program and the output report files to be submitted on the floppy disk are –

A:\-----.PAS and A:\-----.TXT

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

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: Pseudocode (30 %), Results (20 %), Program (50 %).

PROBLEM: Information about height (in Meters) and weight (in Kgs) of several students are given in a text file 'EXAMDATA.TXT'. Each record of this file consists of the following –

Student Name	15 characters
Student Id	4 digit integer
Student Height	real number (---) in Meters
Student Weight	real number (---) in Kgs

Each field has been separated by a space character and sentinel record has student id as zero.

Example of a record -

BENNET L.A. 2100 1.70 78.3

Write pseudocode and a corresponding well documented and properly indented Pascal program that does the following –

1. Reads all the data from 'EXAMDATA.TXT'.
2. Computes the Body Mass Index (BMI) of each student and displays the information on a report file

NOTES:

1. BMI is Weight divided by the square of height.
2. STATUS is HEALTHY if BMI lies between 20 to 25,
STATUS is OBESSE if BMI is greater than 25 but less than 30.
STATUS is OVERWEIGHT if BMI is greater than or equal to 30.
STATUS is UNDER WEIGHT if BMI is less than 20.
3. Program file name should be '----- .pas'.
4. Report file name should be '----- .txt'
5. Six dashes in the file names are the six digits of your Id number.

The report file layout should be as follows –

REPORT PRODUCED BY THE PROGRAM OF
<YOUR ID, YOUR NAME, YOUR GROUP>

UNIVERSITY OF SWAZILAND
BODY MASS INDEX OF CS245 CLASS, JULY, 2006

ID	NAME	HEIGHT	WEIGHT	BMI	STATUS
----	-----	----	-----	-----	-----
----	-----	----	-----	-----	-----
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SUMMARY

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TOTAL NUMBER OF STUDENTS = ---

AVERAGE WEIGHT = ----.---

AVERAGE HEIGHT = --.---

COUNT OF OBESSE STUDENTS = ---

COUNT OF OVERWEIGHT STUDENTS = ---

AVERAGE HEIGHT OF OBESSE STUDENTS = ----.---

AVERAGE WEIGHT OF OVERWEIGHT STUDENTS = ----.---

The contents of 'EXAMDATA.TXT' are -

THWALA D.M.	2511	1.59	69.5
BENNET L.A.	2786	1.80	79.4
BEATRIC S.P.	0869	1.70	60.7
DVUBA M.	4197	1.92	103.2
SIBISI J.N.	0630	1.78	50.6
VILAKATI K.	3246	1.69	54.7
SISA D.M.	2409	1.60	90.0
SENTINEL DATA	0000	0.00	000.0

(End of Examination Paper)