

CS2092 Programming Lab
Test 2: Procedural Abstraction- August 29, 2017

Name: Sl.No. Time: 60 Min.

Question: You are given a non-empty list of student records of a class. Each student record has the following details: *rollno*, *student-name*, and *list-of-marks* of four subjects.

Find the rollno of the student who has scored the highest total marks in the class. Assume that no two students in the class have the same total marks.

Note:

- (a) *rollno* is unique and is an integer.
- (b) *student-name* is unique and it contains a single word.

• **Example:**

Input: '((1 rahul (10 20 30 20)) (5 anu (25 25 30 40)) (12 renu (30 25 25 35)))

Output: 5

• **Using Procedural Abstraction**, identify logical, independent sub-functions (minimum 3 and maximum 6) and:

- (1.) Draw the sub-function structure in tree form (Task Division structure). **(2 marks)**
- (2.) Write the specification (input and output) of each sub-function.
(on the reverse side) **(8 marks)**
- (3.) Write the main function in *psuedo Scheme*. Also write the specification of the main function at the beginning of the main function area. *(space provided below)* **(5 marks)**

You should not write the code for any of the sub-functions.

Tree Structure:

Main Function: