CS2092 Programming Lab
Test 1: *Scheme* Programming Language

August 03, 2017

Name: ....

Time: 45 Min.

Roll Number: ....

Batch: ....

Question.

Given a list of integers, write a recursive Scheme program to remove multiple occurrences of elements.

   Input. A non empty list of integers.

   Output. A list where each integer in the input list occurs only once.

Instructions:

1. The design should contain HOW the problem is solved.

2. Design should be written in Scheme-like language. No marks will be reduced for syntactic errors.

3. Identify sub-tasks and write functions for the sub-tasks. If any function is wrong there will be no partial credit for that function. Marks will be given for any correct sub-tasks.

4. For each sub-function, write the input and output of the function (that is, what the function does) as a comment just above the definition of the function. Do NOT provide explanations.

5. Do not use the following features: set!, lambda, named let, begin, do, list-ref, pair.

6. **All repetitive computations must be done using recursion.**

7. **Do not use library functions. You are permitted to use the following functions only: (car, cdr, cons, null?, =).**

8. **The interface of the sub-functions must be defined properly.**

9. Use meaningful names for functions and arguments. The top-level function should be named as **remove-duplicates**.

10. Use proper indentation.

11. Use the reverse side of the question paper to write the design.

12. Use the rough sheet provided for rough work. You are advised to make a copy of your final design (or parts thereof) there as well. This will serve as reference for the implementation phase of your test, where you are required to implement *your* design.