

Computer Science Language Processors

Rules

- The duration of the test is **2.0 hours**
- Questions will not be answered during the test
- One cannot re-enter the classroom after leaving it
- The answers must be written using a pen (not a pencil)

Design a recursive descent parser to evaluate sentences of the language represented by the following grammar:

```
E ::= T | T + E | T - E
T ::= identifier
T ::= number
T ::= ( E )
```

1. Transform the grammar appropriately.
2. Calculate the First and Follow sets of the modified grammar.
3. Write in C pseudo-code the functions that you think that are necessary to analyze each symbol of the grammar. Consider as already defined the functions of the Lexical Analyzer, and the functions ParseNumber, ParseAdd, ParseSubstr, ParseLParen and ParseRParen to parse the token number, and the literals +, -, (, and).