

2006 Paper 11 Question 3

Compiler Construction

Consider the following grammar.

$$E ::= \text{NUM} \mid E \times E \mid E/E \mid E + E \mid E - E \mid (E)$$

- (a) Show that this grammar is ambiguous. [2 marks]
- (b) Rewrite the grammar to eliminate ambiguity. [4 marks]
- (c) Transform the grammar of part (b) into an equivalent one that could be used for recursive descent parsing. Explain your answer. [5 marks]
- (d) Write a recursive descent parser for your grammar. [9 marks]