

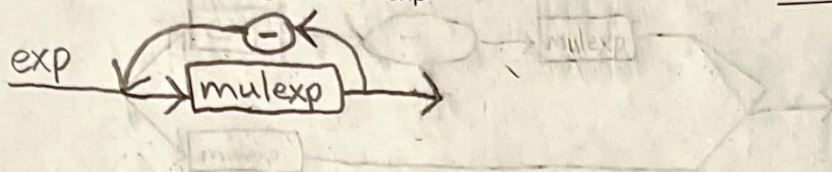
3. Consider the following grammar:

$\langle \text{exp} \rangle ::= \langle \text{exp} \rangle - \langle \text{mulexp} \rangle \mid \langle \text{mulexp} \rangle$

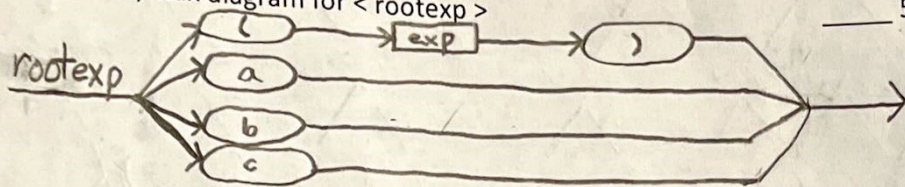
$\langle \text{mulexp} \rangle ::= \langle \text{mulexp} \rangle * \langle \text{rootexp} \rangle \mid \langle \text{rootexp} \rangle$

$\langle \text{rootexp} \rangle ::= (\langle \text{exp} \rangle) \mid a \mid b \mid c$

a. Draw the syntax diagram for $\langle \text{exp} \rangle$ _____ 5



b. Draw the syntax diagram for $\langle \text{rootexp} \rangle$ _____ 5



c. Modify this grammar to add subtraction and division operators (+ and / respectively) with the customary (BODMAS) precedence and (left) associativity. _____ 10

** Answer on separate attached sheet **

4. Draw the classical sequence (with all the different file types) that a program goes through on the journey from being a high level language source file to a running program in memory. _____ 5

