UNIVERSIDADE FEDERAL DE RORAIMA
DISCIPLINA CONSTRUÇÃO DE COMPILADORES
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ALUNO: FELIPE DERKIAN DE SOUSA FREITAS

LISTA 4

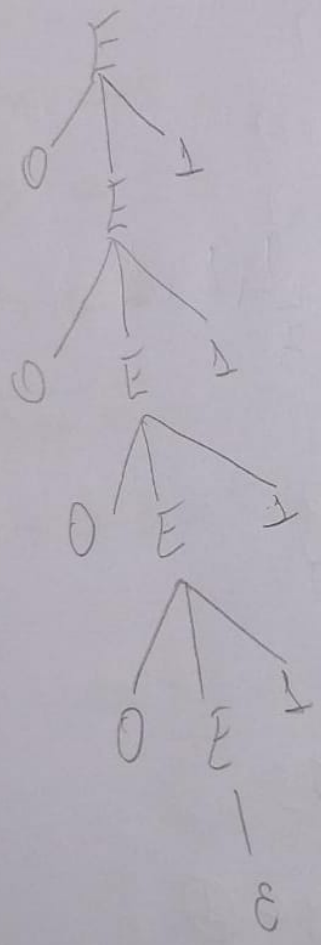
BOA VISTA, 09 DE OUTUBRO DE 2020

Lista 4 - Análise Sintática - Felipe Klerton

4.1

1) $E \rightarrow 0\,E\,1$

2) $E \rightarrow \varepsilon$



$E \rightarrow 0\,E\,1$

$E \rightarrow 00\,E\,11$

$E \rightarrow 000\,E\,111$

$E \Rightarrow 0000\,E\,1111$

$E \Rightarrow 00001111$

DE: 1, 2, 3, 4, 2

DD: 1, 1, 3, 3, 2

4.2 aabb

$G_b = \{V_T, V_M, P, S\}$

$V_T = \{a, b\}$

$V_M = \{A, S\}$

$S \to A$ (1)

$A \to aAb$ (2)

$A \to aabb$ (3)

$P = \{S \to A, (1)$

$A \to aAb, (2)$

$A \to ab\}$ (3)

Sequência: 1, 2, 3

4.3 xxxyyzxxz

$G_c = \{V_T, V_M, P, S\}$

$V_T = \{x, y, z\}$

$V_N = \{S, A, B, C\}$

$S \to AxByC$ (1)

$A \to xAxxByC$ (2)

$A \to xxxByC$ (3)

$B \to xxxByyC$ (4)

$B \to xxxyyC$ (5)

$C \to xxxyyzAz$ (6)

$A \to xxxyyzxAxz$ (2)

$A \to xxxyyzxxz$ (3)

$P = \{S \to AxByC, (1)$

$A \to xAx, (2)$

$A \to \varepsilon$ (3)

$B \to By, (4)$

$B \to \varepsilon, (5)$

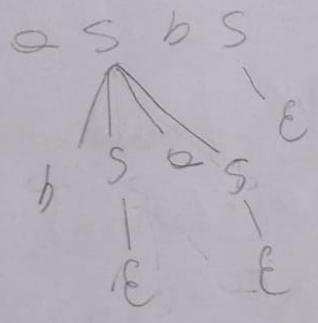
$C \to zAz\}$ (6)

Sequência: 1, 2, 3, 4, 5, 6, 2, 3.

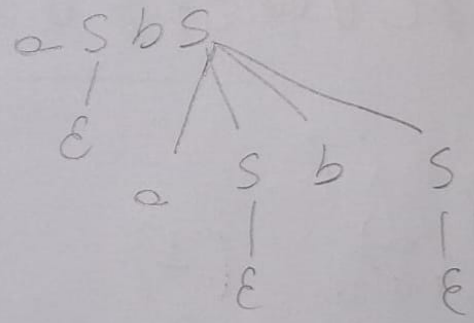
4.4 $S \to aSbS \;(1) \mid bSaS \;(2) \mid \epsilon \;(3)$

abab

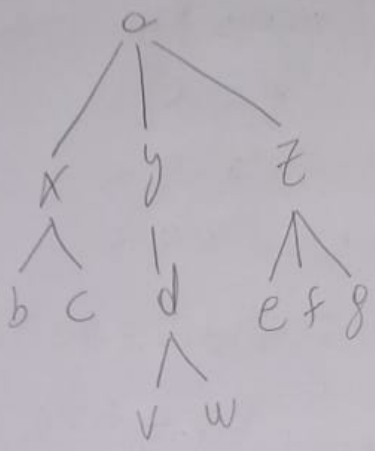
$S \to aSbS$ (1)
$S \to aSb$ (3)
$S \to abSaSb$ (2)
$S \to abaSb$ (3)
$S \to abab$ (3)



$S \to aSbS$ (1)
$S \to abS$ (3)
$S \to abaSbS$ (1)
$S \to ababS$ (3)
$S \to abab$ (3)



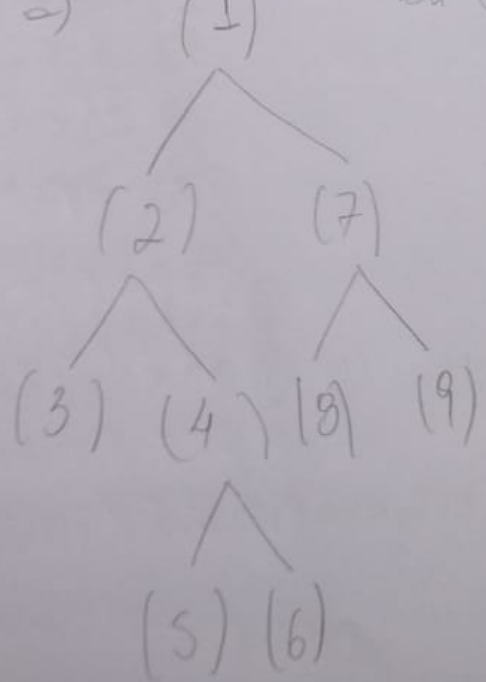
4.5



a) a x b c y d v w z e f g

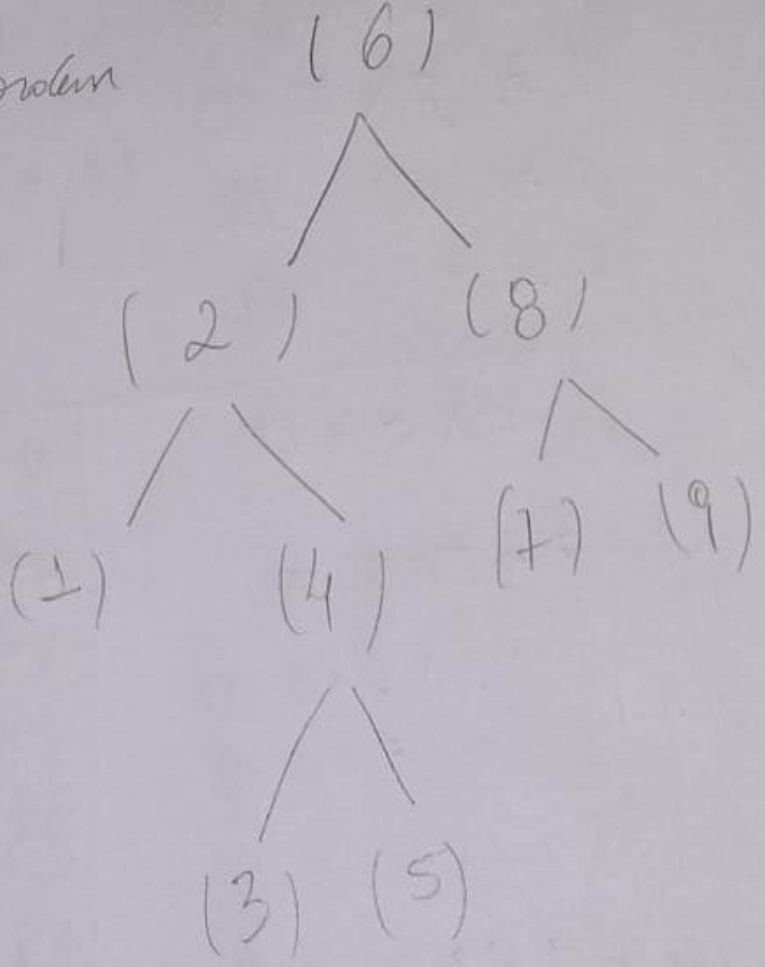
b) b c v w e f g d x y z a

4.6 a)

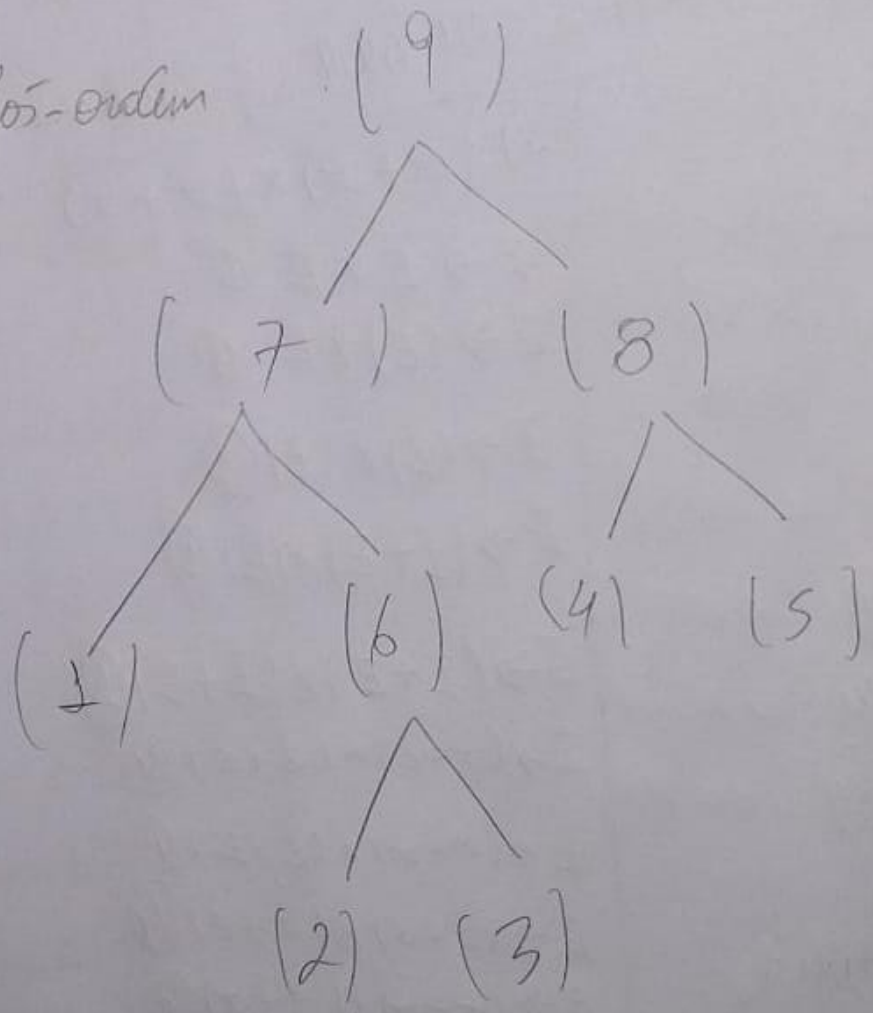


In order

b) Intra-ordem



c) Pós-ordem



4.7

$G_2 =$ $E \to E+E$ (1)
$E \to E \times E$ (2)
$E \to (E)$ (3)
$E \to v$ (4)

a) $v \times v$

$E \to E \times E$ (2)
$E \to v \times E$ (4)
$E \to v \times v$ (4)

Sequência: 2,4,4

b) $v \times v + v$

$E \to E \times E$ (2)
$E \to E \times E + E$ (3)
$E \to v \times E + E$ (4)
$E \to v \times v + E$ (4)
$E \to v \times v + v$ (4)

Sequência: 2,1,4,4,4

c) $v \times (v + v)$

$E \to E \times E$ (2)
$E \to E \times (E)$ (3)
$E \to E \times (E+E)$ (1)
$E \to v \times (E+E)$ (4)
$E \to v \times (v+E)$ (4)
$E \to v \times (v+v)$ (4)

Sequência: 2,3,1,4,4,4.

d) $v + v \times v + v$

$E \to E+E$ (1)
$E \to E + E \times E$ (2)
$E \to E + E \times E + E$ (3)
$E \to v + E \times E + E$ (4)
$E \to v + v \times E + E$ (4)
$E \to v + v \times v + E$ (4)
$E \to v + v \times v + v$ (4)

Sequência: 1,2,1,4,4,4,4

e) $(v+v) \times (v+v)$

$E \to E \times E$ (1)
$E \to (E) \times E$ (3)
$E \to (E) \times (E)$ (3)
$E \to (E+E) \times (E)$ (3)
$E \to (E+E) \times (E+E)$ (1)
$E \to (v+E) \times (E+E)$ (4)
$E \to (v+v) \times (E+E)$ (4)
$E \to (v+v) \times (v+E)$ (4)
$E \to (v+v) \times (v+v)$ (4)

Sequência: 2,3,3,1,1,4,4,4,4.

4.8 $V_N = \{S, L\}$

$V_T = \{(,), a, \Delta\}$

$P = \{ S \to (L), ①$

$S \to a, ②$

$L \to L \Delta S, ③$

$L \to S ④ \}$

a) $(a \Delta a)$

$S \to (L)$ ①

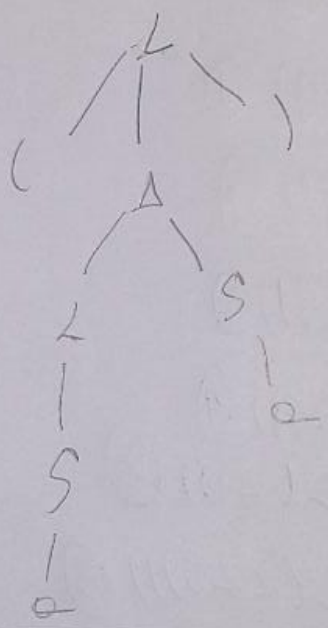
$L \to (L \Delta S)$ ③

$L \to (S \Delta S)$ ④

$S \to (a \Delta S)$ ②

$S \to (a \Delta a)$ ②

Secuencia: 3, 3, 4, 2, 2



b) $(a \Delta (a \Delta a))$

$S \to (L)$ ①

$L \to (L \Delta S)$ ③

$S \to (L \Delta (L))$ ①

$L \to (L \Delta (L \Delta S))$ ③

$L \to (S \Delta (L \Delta S))$ ④

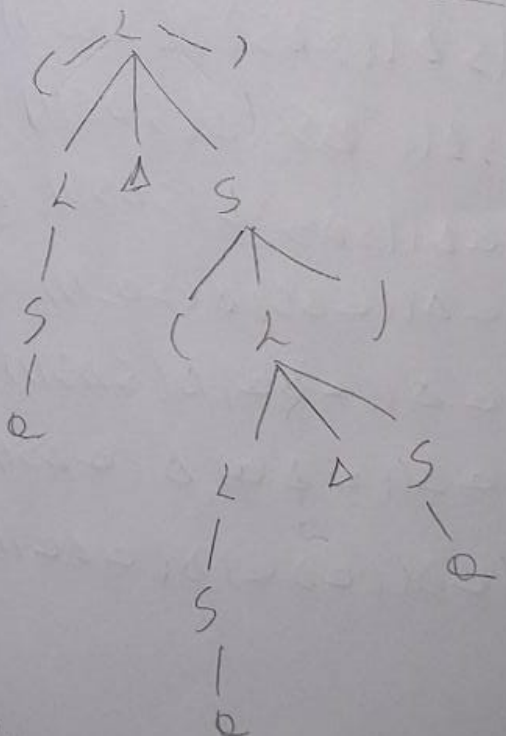
$L \to (S \Delta (S \Delta S))$ ④

$S \to (a \Delta (S \Delta S))$ ②

$S \to (a \Delta (a \Delta S))$ ②

$S \to (a \Delta (a \Delta a))$ ②

Secuencia: 1, 3, 1, 3, 4, 4, 2, 2, 2



4.9 $G_h = \{V_N, V_T, P, S\}$

$V_N = \{A, S\}$

$V_T = \{a, b\}$

$P = \{ S \to A$ ①

$A \to aAb$, ②

$A \to ab\}$ ③

a)

X	a	b	ab	A	$
S				P1	
A	P2	P2	P3	P2	P3

4.10 G_i = $V_T = \{a_R, 0, 2, x\}$

$V_N = \{S, A, B\}$

$P = \{S \to ABe$, ①

$A \to a$, ②

$A \to 0$, ③

$B \to X$, ④

$B \to L\}$ ⑤

AaXe

$S \Rightarrow ABe$ ①

$A \to aBe$ ②

$B \to axe$ ④

Sequência: 1, 2, 4