

2020-2021-2 编译原理测试 (1) 答案

$S \Rightarrow AB$
 $\Rightarrow aAbB$
 $\Rightarrow aaAbbbB$
 $\Rightarrow \dots$
 $\Rightarrow a^n A b^n B$
 $\Rightarrow a^n b^n B$
 $\Rightarrow a^n b^n b^m \Rightarrow a^n b^{n+m}$

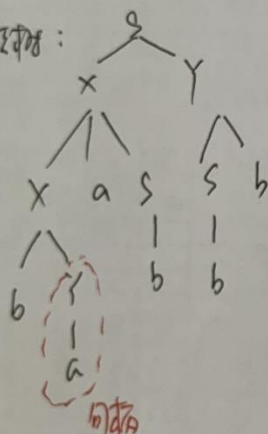
$\Rightarrow a^n b^m (n \leq m)$

\therefore 文法 1 与文法 2 产生的语言相同, \therefore 等价

$S \Rightarrow aSb$
 $\Rightarrow aaSbb$
 $\Rightarrow \dots$
 $\Rightarrow a^n S b^n$
 $\Rightarrow a^n B b^n$
 $\Rightarrow a^n B b b^n$
 $\Rightarrow a^n b^m b^n \Rightarrow a^n b^{m+n}$
 $\Rightarrow a^n b^m (0 \leq n < m)$

二. 略

三. 语法树:

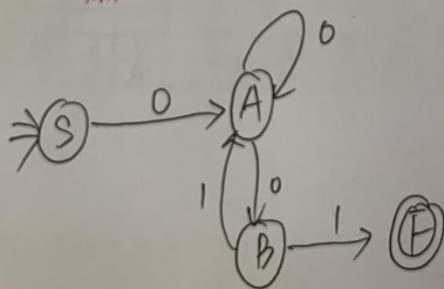


左因子: $a, ba, b, baab,$
 $bb, bba bbb$

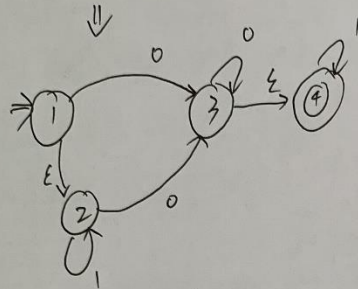
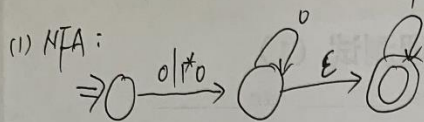
直接因子: a, b

句柄: a

111)



5. $(0|1^*0)0^*1^*$



(2) NFA \rightarrow DFA

①

	ϵ -closure
1	$\{1, 2\}$
2	$\{2\}$
3	$\{3, 4\}$
4	$\{4\}$

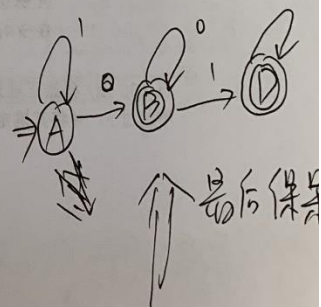
② DFA f'

	0	1
$\{1, 2\}$	$\{3, 4\}$	$\{2\}$
$\{3, 4\}$	$\{3, 4\}$	$\{4\}$
$\{2\}$	$\{3, 4\}$	$\{2\}$
$\{4\}$	\emptyset	$\{4\}$

③ Σ

$A = \{1, 2\}$
 $B = \{3, 4\}$
 $C = \{2\}$
 $D = \{4\}$

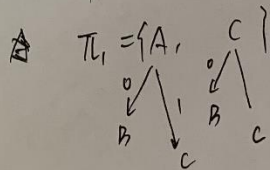
	0	1
A	B	C
B	B	D
C	B	C
D	\emptyset	D



(3) 归并化

$\pi_1 = \{A, C\}$

$\pi_2 = \{B, D\}$



$\pi_2 = \{B, D\}$

\downarrow
 B
 \downarrow
 \emptyset

B, D 不相容
A, C 相容