第 1 章　编译原理 2018 年试卷回忆版

和样卷题型一模一样。

1.1

CFG

15’

Please construct context-free grammars without -free productions for the following language

$$\{a^n\omega b^n|\omega \in (c,d,e,f)\} \quad where$$

ωstarts with c ends with e or f, the number of c d e is even.

1.2

Minimum FA 15’ Please construct a DFA with minimum states for the following regular expression

$$((a|b)(a|b)(ab))(ab)$$

1.3

LL

15’

Please eliminate the left recursions (if there are) and extract maximum common left factors (if there are) from the following context free grammar, and then decide the resulted grammar is whether a LL(1) grammar by constructing the related LL(1) parsing table

1.4

ambiguous LR(1)

15’

Please show that the following operator grammar is whether an operator precedence grammar by constructing the related parsing table

S->if E then S S->if E then S else S S->a E->E and E E->E or E E->not E E->b

1.5

APT

15’

Please construct an annotated parse tree for the input string 12.012 where the syntax-directed definition is as following Productions Semantic Rules S->L(1).L(2) $S.val = L(1).val + L(2).val/4^{L(2).len}$

S->L S.val=L.val

L->L(1)B L.val=L(1).val*4+B.val, L.len=L(1).len+1

L->B L.val=B.val, L.len=1

B->0 B.val=0

B->1 B.val=1

B->2 B.val=2

B->3 B.val=3

1.6

TAC

15’

1.7

DAG

10’

1.8 Contact

written with LaTeX

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https://github.com/NJU-SE-15-share-review/professional-class