

$$T_0 = \{1, 3, 4, 10, 5, 83, 84\}$$

$$T_1 = \varepsilon - (\text{asure}(\varepsilon(T_0, \text{ODE})))$$

$$= \varepsilon - (\text{asure}(2)) = \{2\}$$

$$T_2 = \varepsilon - (\text{asure}(\varepsilon(T_0, \text{FDECL}))) = \varepsilon - (\text{asure}(8))$$

$$= \{8, 3, 4, 10, 5, 83, 84\}$$

$$T_3 = \varepsilon - (\text{asure}(\varepsilon(T_0, \text{Vtype}))) = \varepsilon - (\text{asure}(11, 88, 85))$$

$$= \{11, 88, 91, 85\}$$

$$T_4 = \varepsilon - (\text{asure}(\varepsilon(T_0, \text{VDECL}))) = \varepsilon - (\text{asure}(6))$$

$$= \{6, 5, 83, 84, 4, 10, 3\}$$

$$T_5 = \varepsilon - (\text{asure}(\varepsilon(T_2, \text{CODE}))) = \varepsilon - (\text{asure}(9))$$

$$= \{9\}$$

$$T_6 = \varepsilon - (\text{asure}(\varepsilon(T_2, \text{FDECL}))) = \varepsilon - (\text{asure}(8))$$

$$= T_2$$

$$T_7 = \varepsilon - (\text{asure}(\varepsilon(T_2, \text{Vtype}))) = \varepsilon - (\text{asure}(11, 88, 85))$$

$$= T_3$$

$$T_8 = \varepsilon - (\text{asure}(\varepsilon(T_2, \text{VDECL}))) = \varepsilon - (\text{asure}(6))$$

$$= \{6, 5, 83, 84, 4, 10, 3\}$$

$$= T_4$$

$$T_9 = \varepsilon - (\text{asure}(\varepsilon(T_3, \text{TD}))) = \varepsilon - (\text{asure}(12, 91, 86))$$

$$= \{12, 92, 86\}$$

$$T_{10} = \varepsilon - (\text{asure}(\varepsilon(T_3, \text{ASSIGN}))) = \varepsilon - (\text{asure}(84))$$

$$= \{84\}$$

$$T_{11} = \varepsilon - (\text{asure}(\varepsilon(T_4, \text{ODE}))) = \varepsilon - (\text{asure}(7))$$

$$= \{7\}$$

$$T_{12} = \varepsilon - (\text{asure}(\varepsilon(T_4, \text{VDECL}))) = \varepsilon - (\text{asure}(6)) = T_4$$

$$T_{13} = \varepsilon - (\text{asure}(\varepsilon(T_4, \text{Vtype}))) = \varepsilon - (\text{asure}(88, 85, 11))$$

$$= T_3$$

$$T_{14} = \varepsilon - (\text{asure}(\varepsilon(T_4, \text{FDECL}))) = \varepsilon - (\text{asure}(8))$$

$$= T_2$$

$$T_{15} = \varepsilon - (\text{asure}(\varepsilon(T_6, \text{Vtype}))) = \varepsilon - (\text{asure}(13))$$

$$= \{13, 29, 28\}$$

$$T_{16} = \varepsilon - (\text{asure}(\varepsilon(T_6, \text{ASSIGN}))) = \varepsilon - (\text{asure}(93))$$

$$= \{93, 96, 97, 100, 106, 107, 111, 113, 115, 117\}$$

$$T_{17} = \varepsilon - (\text{asure}(\varepsilon(T_6, \text{SEM}))) = \varepsilon - (\text{asure}(87))$$

$$= \{87\}$$

$$T_{18} = \varepsilon - (\text{asure}(\varepsilon(T_7, \text{SEM}))) = \varepsilon - (\text{asure}(90))$$

$$= \{90\}$$

$$T_{19} = \varepsilon - (\text{asure}(\varepsilon(T_8, \text{FDECL}))) = \varepsilon - (\text{asure}(14))$$

$$= \{14\}$$

$$T_{20} = \varepsilon - (\text{asure}(\varepsilon(T_9, \text{Vtype}))) = \varepsilon - (\text{asure}(30))$$

$$= \{30\}$$

$$T_{21} = \varepsilon - (\text{asure}(\varepsilon(T_{10}, \text{HKS}))) = \varepsilon - (\text{asure}(94))$$

$$= \{94\}$$

$$T_{22} = \varepsilon - (\text{asure}(\varepsilon(T_{10}, \text{HKS}))) = \varepsilon - (\text{asure}(95))$$

$$= \{95\}$$

$$T_{23} = \varepsilon - (\text{asure}(\varepsilon(T_{11}, \text{EXPR}))) = \varepsilon - (\text{asure}(98))$$

$$= \{98\}$$

$$T_{24} = \varepsilon - (\text{asure}(\varepsilon(T_{10}, \text{TEMP}))) = \varepsilon - (\text{asure}(102, 91))$$

$$= \{91, 102\}$$

$$T_{14} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{FAC TOP}))) = \varepsilon - (\text{losure}(105, 108))$$

$$= \{105, 108\}$$

$$T_{20} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{FAC TOP}))) = \varepsilon - (\text{losure}(112))$$

$$= \{112\}$$

$$T_{21} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{min}))) = \varepsilon - (\text{losure}(114))$$

$$= \{114\}$$

$$T_{22} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{TD}))) = \varepsilon - (\text{losure}(116))$$

$$= \{116\}$$

$$T_{23} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{paren}))) = \varepsilon - (\text{losure}(118))$$

$$= \{118, 101, 100, 106, 107, 111, 113, 115, 117\}$$

$$T_{24} = \varepsilon - (\text{losure}(\delta(T_{13}, \text{paren}))) = \varepsilon - (\text{losure}(115))$$

$$= \{115\}$$

$$T_{25} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{TD}))) = \varepsilon - (\text{losure}(31))$$

$$= \{31, 33, 34\}$$

$$T_{28} = \varepsilon - (\text{losure}(\delta(T_{18}, \text{addsub}))) = \varepsilon - (\text{losure}(103))$$

$$= \{103, 101, 100, 106, 107, 111, 113, 115, 117\}$$

$$T_{29} = \varepsilon - (\text{losure}(\delta(T_{10}, \text{multdiv}))) = \varepsilon - (\text{losure}(104))$$

$$= \{104, 107, 106, 111, 113, 115, 117\}$$

$$T_{20} = \varepsilon - (\text{losure}(\delta(T_{23}, \text{EXP}))) = \varepsilon - (\text{losure}(111))$$

$$= \{111\}$$

$$\cancel{T_{21}} = \varepsilon - (\text{losure}(\delta(T_{23}, \text{TEPM}))) = \varepsilon - (\text{losure}(102, 91))$$

$$= T_{18}$$

$$\cancel{T_{20}} = \varepsilon - (\text{losure}(\delta(T_{23}, \text{FAC TOP}))) = T_{14}$$

$$\cancel{T_{21}} = \varepsilon - (\text{losure}(\delta(T_{23}, \text{FAC TOP}))) = \varepsilon - (\text{losure}(112))$$

$$= T_{20}$$

$$\varepsilon - (\text{losure}(\delta(T_{23}, \text{min}))) = \varepsilon - (\text{losure}(114))$$

$$= T_{21}$$

$$\varepsilon - (\text{losure}(\delta(T_{23}, \text{TD}))) = \varepsilon - (\text{losure}(116))$$

$$= T_{22}$$

$$\varepsilon - (\text{losure}(\delta(T_{23}, \text{paren}))) = \varepsilon - (\text{losure}(118))$$

$$= T_{23}$$

$$T_{24} = \varepsilon - (\text{losure}(\delta(T_{24}, \text{brace}))) = \varepsilon - (\text{losure}(116))$$

$$= \{116, 24, 25, 34, 41, 42, 43, 83, 84, 91\}$$

$$T_{20} = \varepsilon - (\text{losure}(\delta(T_{25}, \text{NOP:EXP GS}))) = \varepsilon - (\text{losure}(32))$$

$$= \{32\}$$

$$T_{31} = \varepsilon - (\text{losure}(\delta(T_{25}, \text{comma}))) = \varepsilon - (\text{losure}(35))$$

$$= \{35\}$$

$$T_{32} = \varepsilon - (\text{losure}(\delta(T_{24}, \text{EXP}))) = \varepsilon - (\text{losure}(104))$$

$$= \{104\}$$

$$\cancel{T_{23}} = \varepsilon - (\text{losure}(\delta(T_{24}, \text{TEPM}))) = \varepsilon - (\text{losure}(91, 107))$$

$$= T_{18}$$

$$\varepsilon - (\text{losure}(\delta(T_{26}, \text{FAC TOP}))) = \varepsilon - (\text{losure}(105, 108))$$

$$= T_{19}$$

$$\varepsilon - (\text{losure}(\delta(T_{26}, \text{FAC TOP}))) = \varepsilon - (\text{losure}(112))$$

$$= T_{20}$$

$$\varepsilon - (\text{losure}(\delta(T_{26}, \text{min}))) = \varepsilon - (\text{losure}(114))$$

$$= T_{21}$$

$$\varepsilon - (\text{losure}(\delta(T_{26}, \text{TD}))) = \varepsilon - (\text{losure}(116))$$

$$= T_{22}$$

$$\varepsilon - (\text{losure}(\delta(T_{26}, \text{paren}))) = \varepsilon - (\text{losure}(118))$$

$$= T_{23}$$

$$T_{44} = \xi - (\text{leisure}(\xi, T_{24}, \text{Vtype})) = \xi - (\text{leisure}(\xi, 26))$$

$$= \xi 363$$

$$T_{45} = \xi - (\text{leisure}(\xi, T_{25}, \text{PETUPN})) = \xi - (\text{leisure}(\xi, 18))$$

$$= \xi 183$$

$$T_{46} = \xi - (\text{leisure}(\xi, T_{26}, \text{return})) = \xi - (\text{leisure}(\xi, 2))$$

$$= \xi 21, 11, 113, 115, 1173$$

$$T_{47} = \xi - (\text{leisure}(\xi, T_{27}, \text{BLOCK})) = \xi - (\text{leisure}(\xi, 27))$$

$$= \xi 273$$

$$T_{48} = \xi - (\text{leisure}(\xi, T_{28}, \text{STMT})) = \xi - (\text{leisure}(\xi, 26))$$

$$= T_{26}$$

$$T_{49} = \xi - (\text{leisure}(\xi, T_{29}, \text{VDELT})) = \xi - (\text{leisure}(\xi, 44))$$

$$= T_{29}$$

$$T_{50} = \xi - (\text{leisure}(\xi, T_{30}, \text{ASSIGN})) = \xi - (\text{leisure}(\xi, 45))$$

$$= T_{30}$$

$$\xi - (\text{leisure}(\xi, T_{36}, \text{TF})) = \xi - (\text{leisure}(\xi, 47))$$

$$= T_{36}$$

$$\xi - (\text{leisure}(\xi, T_{36}, \text{WHILE})) = \xi - (\text{leisure}(\xi, 61))$$

$$= T_{40}$$

$$\xi - (\text{leisure}(\xi, T_{36}, \text{FOR})) = \xi - (\text{leisure}(\xi, 72))$$

$$= T_{41}$$

$$\xi - (\text{leisure}(\xi, T_{36}, \text{VTYPE})) = \xi - (\text{leisure}(\xi, 82))$$

$$= T_{42}$$

$$\xi - (\text{leisure}(\xi, T_{36}, \text{TF})) = \xi - (\text{leisure}(\xi, 72))$$

$$= T_{43}$$

$$T_{48} = \xi - (\text{leisure}(\xi, T_{30}, \text{SEM})) = \xi - (\text{leisure}(\xi, 46))$$

$$= \xi 463$$

$$T_{23} = \xi - (\text{leisure}(\xi, T_{27}, \text{TEMP})) = \xi - (\text{leisure}(\xi, 110))$$

$$= \xi 1103$$

$$T_{24} = \xi - (\text{leisure}(\xi, T_{27}, \text{FAN(TOP)})) = \xi - (\text{leisure}(\xi, 105, 106))$$

$$= T_{14}$$

$$\xi - (\text{leisure}(\xi, T_{27}, \text{FAN(TOP)})) = T_{20}$$

$$\xi - (\text{leisure}(\xi, T_{27}, \text{FAN(TOP)})) = T_{21}$$

$$\xi - (\text{leisure}(\xi, T_{27}, \text{FAN(TOP)})) = T_{22}$$

$$\xi - (\text{leisure}(\xi, T_{27}, \text{FAN(TOP)})) = T_{23}$$

$$T_{24} = \xi - (\text{leisure}(\xi, T_{28}, \text{FAN(TOP)})) = \xi - (\text{leisure}(\xi, 120))$$

$$= \xi 1203$$

$$T_{25} = \xi - (\text{leisure}(\xi, T_{24}, \text{BLOCK})) = \xi - (\text{leisure}(\xi, 17))$$

$$= \xi 17, 203$$

$$T_{28} = \xi - (\text{leisure}(\xi, T_{24}, \text{STMT})) = \xi - (\text{leisure}(\xi, 26))$$

$$= \xi 26, 25, 24, 24, 11, 112, 42, 93, 94, 413$$

$$T_{29} = \xi - (\text{leisure}(\xi, T_{24}, \text{VDELT})) = \xi - (\text{leisure}(\xi, 44))$$

$$= \xi 443$$

$$T_{30} = \xi - (\text{leisure}(\xi, T_{24}, \text{ASSIGN})) = \xi - (\text{leisure}(\xi, 45))$$

$$= \xi 453$$

$$T_{24} = \xi - (\text{leisure}(\xi, T_{24}, \text{TF})) = \xi - (\text{leisure}(\xi, 47))$$

$$= \xi 473$$

$$T_{40} = \xi - (\text{leisure}(\xi, T_{24}, \text{WHILE})) = \xi - (\text{leisure}(\xi, 61))$$

$$= \xi 613$$

$$T_{41} = \xi - (\text{leisure}(\xi, T_{24}, \text{FOR})) = \xi - (\text{leisure}(\xi, 72))$$

$$= \xi 723$$

$$T_{42} = \xi - (\text{leisure}(\xi, T_{24}, \text{VTYPE})) = \xi - (\text{leisure}(\xi, 82))$$

$$= \xi 82, 84, 413$$

$$T_{43} = \xi - (\text{leisure}(\xi, T_{24}, \text{TF})) = \xi - (\text{leisure}(\xi, 72)) = \xi 723$$

$$T_{61} = \varepsilon - (\text{parse}(\beta(T_{55}, \text{SEM}), \text{P}) = \varepsilon - (\text{parse}(23))$$

$$= \{23\}$$

$$T_{62} = \varepsilon - (\text{parse}(\beta(T_{56}, \text{PAREN}), \text{P}) = \varepsilon - (\text{parse}(50))$$

$$= \{50\}$$

$$T_{63} = \varepsilon - (\text{parse}(\beta(T_{57}, \text{COMP}), \text{P}) = \varepsilon - (\text{parse}(70))$$

$$= \{70, 11, 13, 15, 17\}$$

$$T_{64} = \varepsilon - (\text{parse}(\beta(T_{58}, \text{PAREN}), \text{P}) = \varepsilon - (\text{parse}(64))$$

$$= \{64\}$$

$$T_{65} = \varepsilon - (\text{parse}(\beta(T_{59}, \text{SEM}), \text{P}) = \varepsilon - (\text{parse}(75))$$

$$= \{75, 68, 11, 13, 15, 17\}$$

$$T_{66} = \varepsilon - (\text{parse}(\beta(T_{62}, \text{BRACE}), \text{P}) = \varepsilon - (\text{parse}(51))$$

$$= \{51, 24, 25, 29, 40, 41, 42, 43, 83, 84, 91\}$$

$$T_{67} = \varepsilon - (\text{parse}(\beta(T_{63}, \text{FACTOP}), \text{P}) = \varepsilon - (\text{parse}(71))$$

$$= \{71\}$$

$$T_{20}$$

$$T_{21}$$

$$T_{22}$$

$$T_{23}$$

$$T_{68} = \varepsilon - (\text{parse}(\beta(T_{64}, \text{BRACE}), \text{P}) = \varepsilon - (\text{parse}(65))$$

$$= \{65, 24, 25, 29, 40, 41, 42, 43, 83, 84, 91\}$$

$$T_{69} = \varepsilon - (\text{parse}(\beta(T_{65}, \text{COMP}), \text{P}) = \varepsilon - (\text{parse}(76))$$

$$= \{76\}$$

$$T_{70} = \varepsilon - (\text{parse}(\beta(T_{66}, \text{FACTOP}), \text{P}) = \varepsilon - (\text{parse}(61))$$

$$= T_{57}$$

$$T_{20} \sim T_{23}$$

$$T_{71} = \varepsilon - (\text{parse}(\beta(T_{61}, \text{BRACE}), \text{P}) = \varepsilon - (\text{parse}(52))$$

$$= \{52\}$$

$$T_{72} = \varepsilon - (\text{parse}(\beta(T_{62}, \text{SEM}), \text{P}) = \varepsilon - (\text{parse}(26))$$

$$= T_{36}$$

$$T_{37}$$

$$T_{38}$$

$$T_{39}$$

$$T_{40}$$

$$T_{41}$$

$$T_{42}$$

$$T_{43}$$

$$T_{73} = \varepsilon - (\text{parse}(\beta(T_{63}, \text{BRACE}), \text{P}) = \varepsilon - (\text{parse}(66))$$

$$= \{66\}$$

$$T_{74} = \varepsilon - (\text{parse}(\beta(T_{64}, \text{SEM}), \text{P}) = \varepsilon - (\text{parse}(26))$$

$$= T_{36}$$

$$T_{37}$$

$$T_{38}$$

$$T_{39}$$

$$T_{40}$$

$$T_{41}$$

$$T_{42}$$

$$T_{43}$$

$$T_{75} = \varepsilon - (\text{parse}(\beta(T_{65}, \text{SEM}), \text{P}) = \varepsilon - (\text{parse}(77))$$

$$= \{77, 91\}$$

$$T_{76} = \varepsilon - (\text{parse}(\beta(T_{66}, \text{BRACE}), \text{P}) = \varepsilon - (\text{parse}(53))$$

$$= \{53, 55, 56\}$$

$$T_{77} = \varepsilon - (\text{parse}(\beta(T_{71}, \text{BRACE}), \text{P}) = \varepsilon - (\text{parse}(67))$$

$$= \{67\}$$

$$T_{\eta 5} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 2}, \text{Axiom}))) = \mathcal{E} - (\text{value}(\text{Axiom})) \\ = \{ \eta 8 \}$$

$$\mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 2}, T_d))) = \mathcal{E} - (\text{value}(\text{C12}))$$

$$= T_{43}$$

$$T_{\eta 6} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 3}, \text{Else}))) = \mathcal{E} - (\text{value}(\text{C54}))$$

$$= \{ \tilde{54} \}$$

$$T_{\eta 7} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 3}, \text{else}))) = \mathcal{E} - (\text{value}(\text{C17}))$$

$$= \{ \tilde{517} \}$$

$$T_{\eta 8} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 5}, \text{Parent}))) = \mathcal{E} - (\text{value}(\text{C14}))$$

$$= \mathcal{E} - (\text{value}(\text{C14}))$$

$$= \{ \eta 9 \}$$

$$T_{\eta 9} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 7}, \text{Parent}))) = \mathcal{E} - (\text{value}(\text{C53}))$$

$$= \{ \tilde{53}, \tilde{24}, \tilde{25}, \tilde{34}, \tilde{40}, \tilde{41}, \tilde{42}, \tilde{43}, \tilde{83}, \tilde{84}, \tilde{11} \}$$

$$T_{80} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 2}, \text{Parent}))) = \mathcal{E} - (\text{value}(\text{Axiom}))$$

$$= \{ \tilde{80}, \tilde{24}, \tilde{25}, \tilde{34}, \tilde{40}, \tilde{41}, \tilde{42}, \tilde{43}, \tilde{83}, \tilde{84}, \tilde{11} \}$$

$$T_{81} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{\eta 4}, \text{Block}))) = \mathcal{E} - (\text{value}(\text{C54}))$$

$$= \{ \tilde{54} \}$$

$$T_{26}$$

$$T_{30}$$

$$T_{32}$$

$$T_{24}$$

$$T_{40}$$

$$T_{11}$$

$$T_{42}$$

$$T_{113}$$

$$T_{82} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{80}, \text{Block}))) = \mathcal{E} - (\text{value}(\text{Axiom})) \\ = \{ \tilde{81} \}$$

$$T_{26}$$

$$T_{30}$$

$$T_{28}$$

$$T_{24}$$

$$T_{40}$$

$$T_{11}$$

$$T_{42}$$

$$T_{113}$$

$$T_{83} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{81}, \text{Parent}))) = \mathcal{E} - (\text{value}(\text{Axiom})) \\ = \{ \tilde{82} \}$$

$$T_{84} = \mathcal{E} - (\text{value}(\mathcal{S}(T_{82}, \text{Parent}))) = \mathcal{E} - (\text{value}(\text{Axiom})) \\ = \{ \tilde{83} \}$$