membership

A,B,C,D,S,T

a,b

T

T -> A B

T -> B A

T -> S S

T -> A C

T -> B D

T -> epsilon

S -> A B

S -> B A

S -> S S

S -> A C

S -> B D

C -> S B

D -> S A

A -> a

B -> b

end

bbba

end

[[[['A', [['a']], 0]], [['B', [['b']], 0]], [['A', [['a']], 0]], [['B', [['b']], 0]], [['A', [['a']], 0]], [['B', [['b']], 0]]],

[[['S', ['A', 'B'], 1], ['T', ['A', 'B'], 1]], [['S', ['B', 'A'], 2], ['T', ['B', 'A'], 2]], [['S', ['A', 'B'], 3], ['T', ['A', 'B'], 3]], [['S', ['B', 'A'], 4], ['T', ['B', 'A'], 4]], [['S', ['A', 'B'], 5], ['T', ['A', 'B'], 5]], []],

[[['D', ['S', 'A'], 2]], [['C', ['S', 'B'], 3]], [['D', ['S', 'A'], 4]], [['C', ['S', 'B'], 5]], [], []],

[[['S', ['A', 'C'], 1], ['T', ['A', 'C'], 1], ['S', ['S', 'S'], 2], ['T', ['S', 'S'], 2]], [['S', ['B', 'D'], 2], ['T', ['B', 'D'], 2], ['S', ['S', 'S'], 3], ['T', ['S', 'S'], 3]], [['S', ['A', 'C'], 3], ['T', ['A', 'C'], 3], ['S', ['S', 'S'], 4], ['T', ['S', 'S'], 4]], [], [], []],

[[['D', ['S', 'A'], 4]], [['C', ['S', 'B'], 5]], [], [], [], []],

[[['S', ['A', 'C'], 1], ['T', ['A', 'C'], 1], ['S', ['S', 'S'], 2], ['T', ['S', 'S'], 2], ['S', ['S', 'S'], 4], ['T', ['S', 'S'], 4]], [], [], [], [], []]]

[[[['B', ['b'], 0]], [['B', ['b'], 0]], [['B', ['b'], 0]], [['B', ['b'], 0]], [['A', ['a'], 0]], [['A', ['a'], 0]], [['A', ['a'], 0]], [['A', ['a'], 0]]],

[[], [], [], [['S', ['B', 'A'], 4], ['T', ['B', 'A'], 4]], [], [], [], []],

[[], [], [], [['D', ['S', 'A'], 5]], [], [], [], []], [[], [], [['S', ['B', 'D'], 3], ['T', ['B', 'D'], 3]], [], [], [], [], []], [[], [], [['D', ['S', 'A'], 6]], [], [], [], [], []],

[[], [['S', ['B', 'D'], 2], ['T', ['B', 'D'], 2]], [], [], [], [], [], []],

[[], [['D', ['S', 'A'], 7]], [], [], [], [], [], []],

[[['S', ['B', 'D'], 1], ['T', ['B', 'D'], 1]], [], [], [], [], [], [], []]]

rightmost-derivation

A,B,C,D,S,T

a,b

T

T -> A B

T -> B A

T -> S S

T -> A C

T -> B D

T -> epsilon

S -> A B

S -> B A

S -> S S

S -> A C

S -> B D

C -> S B

D -> S A

A -> a

B -> b

end

bbba

end

ambiguous

A,B,C,D,S,T

a,b

T

T -> A B

T -> B A

T -> S S

T -> A C

T -> B D

T -> epsilon

S -> A B

S -> B A

S -> S S

S -> A C

S -> B D

C -> S B

D -> S A

A -> a

B -> b

end

bbbbaaaa

end

ambiguous  
S, A, B, C, D, E  
a,b

S  
S -> C B  
S -> E D  
S -> a  
S -> A C  
A -> C B  
A -> E D   
A -> a  
A -> A C  
B -> C B  
B -> E D   
B -> a  
B -> A C   
C -> b  
C -> C B  
C -> E D  
C -> a  
C -> A C  
D -> b  
E -> a   
end  
ababab  
end