



## Quiz 4

1) For the following grammar :

Terminal symbols = { num , - , + , \* }

$E \rightarrow E * F$  {E. value = E1.value \* F. value}E

$E \rightarrow F + E$  {E. value = F. value + E1.value}E

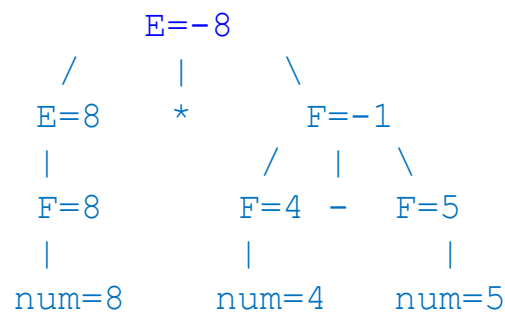
$E \rightarrow F$  {E. value = F. value}

$F \rightarrow F - F$  {F. value = F1. value - F2. value }

$F \rightarrow \text{num}$  {F. value = num. value}

Using SDT evaluate the expression :  $8 * 4 - 5$

Answer :



Result = -8

For the following grammar :

Terminal symbols = { a , b }

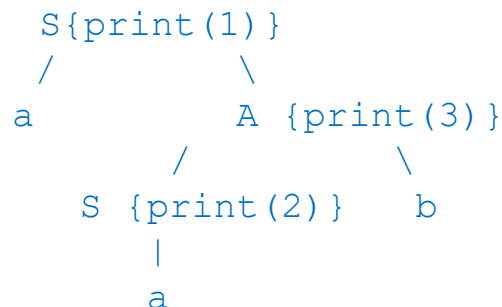
$S \rightarrow aA$  {print 1}

$S \rightarrow a$  {print 2}

$A \rightarrow Sb$  {print 3}

Using SDT evaluate the expression :  $aab$

Answer :



Result = 2 3 1

### 3) MCQ :

(5 points)

- 1- Syntax trees are parsed ..... and ..... .  
a- top-down , left to right  
b- top-down , right to left  
c- bottom-up , left to right  
d- bottom-up , right to left
  
- 2- Consider the SDT  
 $S \rightarrow XYZ$   
 $Y.value = X.value$   
 $Y.value = S.value$   
 $Y.value = Z.value$   
The above SDT is ..... .  
a- L-attributed  
b- S-attributed  
c- S- attributed and L- attributed  
d- Neither S- attributed nor L- attributed
  
- 3- Consider the SDT  
 $E \rightarrow E / E \quad \{print('/')\}$   
 $E \rightarrow E * E \quad \{print('*')\}$   
 $E \rightarrow id \quad \{print(id.name)\}$   
The above SDT is ..... .  
a- L-attributed  
b- S-attributed  
c- S- attributed and L- attributed  
d- Neither S- attributed nor L- attributed
  
- 4- S-attributed SDT uses inherited attributes  
a- True  
b- False
  
- 5- A synthesized attribute is an attribute whose value at a parse tree node depends on ..... .  
a- Attributes at sibling only  
b- Attributes at parent node only  
c- Attributes at children only  
d- None of the above
  
- 6- Type checking is done before parsing  
a- True  
b- False

- 7- Type checking is normally done during ..... .
- a) Lexical Analysis
  - b) Syntax Analysis
  - c) Syntax directed translation
  - d) Code optimization
- 8- Consider the SDT  
 $S \rightarrow XY$   
 $X.value = Y.value$   
The above SDT is ..... .
- a- L-attributed
  - b- S-attributed
  - c- S- attributed and L- attributed
  - d- Neither S- attributed nor L- attributed
- 9- Consider the SDT  
 $E \rightarrow CD$   
 $E \rightarrow AB$   
Consider the following rules :  
Rule-1 : {  $E.value = C.value + D.value$  } and {  $C.value = D.value - 1$  }  
Rule-2 : {  $A.value = E.value * 2$  } and {  $B.value = A.value + E.value$  }  
Which statement is True?
- a- Only Rule-1 is L-attributed
  - b- Only Rule-2 is L-attributed
  - c- Both Rule-1 and Rule-2 are L-attributed
  - d- Neither Rule-1 nor Rule-2 is L-attributed
- 10- S-attributed SDT uses inherited and synthesized attributes
- a- True
  - b- False
- 11- A synthesized attribute is an attribute whose value at a parse tree node depends on ..... .
- a- Attributes at sibling only
  - b- Attributes at parent node only
  - c- Attributes at children only
  - d- None of the above
- 12- A inherited attribute is an attribute whose value at a parse tree node depends on ..... .
- a- Attributes at sibling
  - b- Attributes at parent node
  - c- Attributes at children
  - d- Attributes at sibling and parent node