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Id: 19-39349-1

Compiler Design [F]
Mid term Assignment

Ans to the q.no-1

$P = x - y * (y + z) / (z - x) + 15$

$(id,1) = (id,2) (-) (id,3) (*) (id,3) + (id,4) (/)$

$(id,4) - (id,2) + (15)$

temp 1 = int to float $(id,3)$ + int to float $(id,4)$

temp 2 = int to float $(id,4)$ - int to float $(id,2)$

$(id,1)$ = int to float $(id,2)$ - int to float $(id,3)$ * temp1 / temp2 + 15.0

Code genetation:

```
FMOV  FRA, X
FMOV  FRB, Y
FMOV  FRD, Y
FMOV  FRC, Z
FSUB  FRB, FRC
FADD  FRC, FRA
FMUL  FRD, FRB
FMUL  FRD, FRC
FADD  FRA, FRD
FSUB  FRA, 15
FMOV  FDS, FRA
```

Ans to the q.no-2

Constructed scheme :

$E \rightarrow E+T \quad \{print('+')\}$

$E \rightarrow T \quad \{\}$

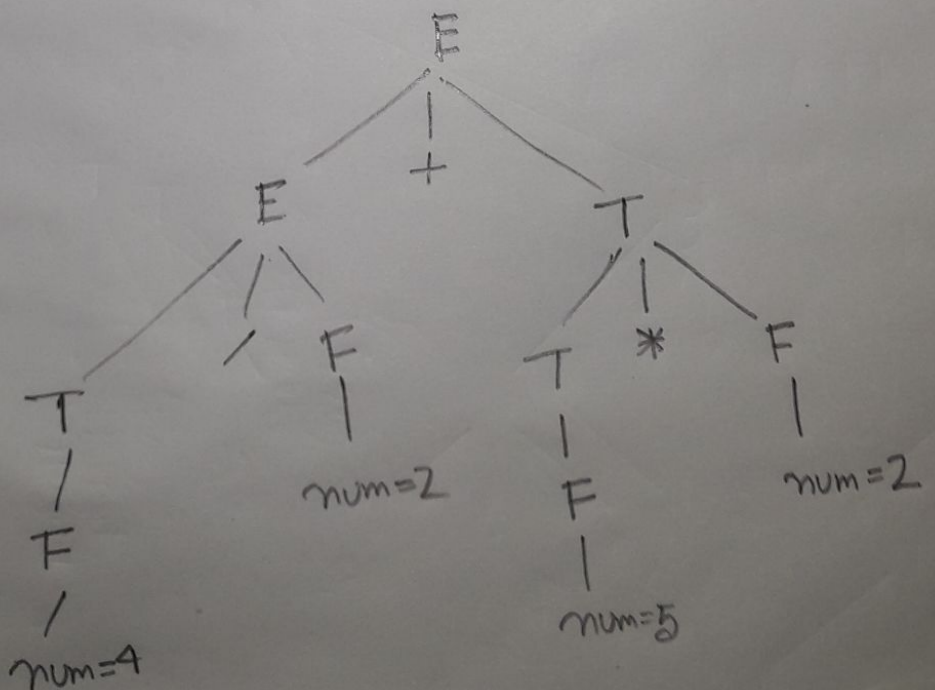
$T \rightarrow T/F \quad \{print('/')\}$

$T \rightarrow T*F \quad \{print('*')\}$

$T \rightarrow F \quad \{\}$

$F \rightarrow num \quad \{print(num.lexval)\}$

4/2+5*2



Ans to the q.no-3

Production	Semantic Rules	Semantic Action
$S \rightarrow U$	S.t := U.t	{Print ( )}
$U \rightarrow TaU$	U.t := T.t ‖ U.t ‖ 'a'	{Print('a')}
$U \rightarrow TaT$	U.t := T.t ‖ T.t ‖ 'a'	{Print('a')}
$T \rightarrow aTbT$	T.t := T.t ‖ T.t ‖ 'a' ‖ 'b'	{Print("ab"}
$T \rightarrow bTaT$	T.t := T.t ‖ T.t ‖ 'b' ‖ 'a'	{Print("ba"}
$T \rightarrow d$	T.t := 'd'	{Print ('d')}