# Practice Problems: LR(0) and SLR(1)

**Q1.**Obtain **LR(0)** items for the below grammars

a) {{S},{+,-,*,(,),a},P,S}
S→ S+|S-|S*|(S)|a|ε

b) {{S},{0,1},P,S}
S→ 0S1S|1S0S|0|1

**Q2.**Find whether the following grammar{{S,A,B,C,P,Q},{x,y,m,b,ep,q},P,S} is **LR(0)** or not

S→ AB | PQx
A→ xy| m
B→bC
C→bC|e
P→pP|ε
Q→qQ|ε

**Q3.**Construct **SLR(1)** parsing table for the below grammars{{S,A,B},{a,b,d,m,e},P,S} and whether grammar is **SLR(1)** or not

S→ aAd| bBd| mB|aBm|bAm
A→ daA|B
B→e

**Q4.**Find whether the following grammar is **LL(1), SLR(1)** or both

(a) {{S,A,B,C},{a,b,g,h},P,S}.
S→ACBS| CbB | Ba
A→ daA|BC
B→g|ε
C→h|ε

(b) S→P0P1|Q1Q1
P→ε
Q→ε

(c) S→SAab | A
A→a|ε

**Q5.**Construct the SLR(1) parsing table for the following grammar {{S,A,B},{a,b,c,d,e,f},P,S}and Obtain the moves for **eeddda**

S→Aa| bAc| Bc|bBa
A→ABd|e
B→d|f

**Q6.**Construct the SLR(1) parsing table

a) {{A,B,D},{id,=,a},P,A}
A→id|B=D
B→id
D→a|B

b) {{S,E,L},{(,a,)},P,S}
S→E;

E→(L)/a;
L→EL

**Q7.**Determine whether the following grammar is SLR(1)or not. If not, then specify the conflict(SR/RR) presented in the grammar.

a) {{S,P},{a,b,c,d},P,S}
S→Pa | bPc |dc |bda
P→d

b) {{S,A,B},{a,b,c,d,e},P,S}
S→aAd|bBd|aBe|bAe
A→c
B→c

**Q8.**Construct the SLR(1) parsing table for the below grammar {{list,stmt},{if,e,then,else,while,do,begin,end,s},P,list}

list→ list;stmt
|stmt
stmt→if **e** then **stmt**
| If **e** then **stmt** else **stmt**
| while **e** do **stmt**
| begin **list** end
|s

Show the behaviour of above grammar for the following inputs:

a) begin If **e** then while **e** do **s** else **s** end
b) begin while **e** do **s** end; if **e** then **s**

**Q9.**Construct the SLR(1) parsing table for the grammar {{L,S},{if,(,b,),else,while,a},P,L} and obtain the movie for **if (b) a else while(b) a**

L→LS|S
S→ if (b) S | if (b) S else S| while (b) S |a;

**Q10.** Find whether following grammar{{D,F,S,E,A,T},{define, id, (,),{,}, return,int, float},P,D } is LL(1) , SLR(1) or both

D→define T id (F) {S}
F→T id , F | ε
S→ return E;
E→ id(A)
A→ ε| E , A
T → int|float