## CS 370 (Fall 2016) HW 9
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### Question 1

| (Rule 1) | $S \longrightarrow AS$ |
|---|---|
| (Rule 2) | $S \longrightarrow A$ |
| (Rule 3) | $A \longrightarrow aSb$ |
| (Rule 4) | $A \longrightarrow cSd$ |
| (Rule 5) | $A \longrightarrow e$ |

Show the steps (in detail) for building a SLR parsing table for the grammar. Hint: you need to augment the grammar to include the rule $S' \longrightarrow S$. Note: you are also required to summarize the parsing logic as a parsing table.

### Question 2

Consider the grammar

| (Rule 1) | $S \longrightarrow aCd$ |
|---|---|
| (Rule 2) | $S \longrightarrow bCD$ |
| (Rule 3) | $C \longrightarrow cC$ |
| (Rule 4) | $C \longrightarrow c$ |
| (Rule 5) | $D \longrightarrow d$ |

Explain how to use the following LR parsing table to parse the string *bccd*. Be sure to show the steps in detail. Remember that the input has been extended to include an end-of-input symbol $ as in *bccd*$.

```
           ACTION                GOTO
       a    b    c    d    $    S    C    D
    ------------------------------------------------
0  | s1   s6                       10
1  |            s4                      2
2  |                 s3
3  |                      r1
4  |            s4   r4                 5
5  |                 r3
6  |            s4                      7
7  |                 s8                      9
8  |                      r5
9  |                      r2
10 |                      acc
```

## Question 3

Consider the grammar

| (Rule 1) | $S \longrightarrow CC$ |
|---|---|
| (Rule 2) | $C \longrightarrow cC$ |
| (Rule 3) | $C \longrightarrow d$ |

Show the steps (in detail) for building a SLR parsing table for the grammar. Hint: you need to augment the grammar to include the rule $S' \longrightarrow S$.

Explain how to use the parsing table constructed to parse the string *dccd*. Be sure to show the steps in detail. Remember that the input has been extended to include an end-of-input symbol $ as in *dccd*$.