$$\begin{array}{l} A \rightarrow NS' \mid EC \mid 0 \\ B \rightarrow ND \mid ES' \mid 1 \\ S \rightarrow NB \mid eps \mid EA \\ C \rightarrow AA \\ S' \rightarrow NB \mid EA \\ D \rightarrow BB \\ E \rightarrow 1 \\ N \rightarrow 0 \end{array}$$

