1) $L_1 = \{0^i 1^j 0^h : i,j, h \geq 0 \text{ and } (i=j \text{ or } j=h)\}$

$S \rightarrow AB|BC$
$A \rightarrow 0A1|\epsilon$
$B \rightarrow 0B1\epsilon$
$C \rightarrow 1C0|\epsilon$

yes this can create multiple strings with

2 leftmost derivations. An example is $0|0$

which has the two strings $0, 10$

2)

$A \rightarrow BAB \mid B \mid \epsilon$

$B \rightarrow 00 \mid \epsilon$

eliminate ϵ

$A \rightarrow BAB \mid B \mid AB \mid BA \mid A \mid B$

$B \rightarrow 00$

New start state

$S \rightarrow A \mid \epsilon$

$A \rightarrow BAB \mid B \mid AB \mid BA \mid A \mid B$

$B \rightarrow 00$

Remove unit productions

$S \rightarrow A \mid \epsilon$

$A \rightarrow BAB \mid 00 \mid AB \mid BA \mid A$

$B \rightarrow 00$

$B_0 \rightarrow O$

$x \rightarrow AD$

$S \rightarrow \epsilon \mid BZ \mid BD \mid BA \mid AD \mid V_0V_0$

$A \rightarrow BZ \mid BD \mid BA \mid AD \mid V_0V_0$

$x \rightarrow AB$

$B \rightarrow V_0V_0$

$V_0 \rightarrow O$

3)

$\rightarrow \boxed{q_0} \quad \xrightarrow{\quad \epsilon, Z_0 \rightarrow AZ_0 \quad} \quad \boxed{q_1}$

self-loop on q_1:

$\epsilon, A \rightarrow BAB$
$\epsilon, A \rightarrow B$
$\epsilon, A \rightarrow \epsilon$
$\epsilon, B \rightarrow DO$
$\epsilon, B \rightarrow \epsilon$
$0, O \rightarrow \epsilon$

$q_1 \xrightarrow{\quad \epsilon, Z_0 \rightarrow \epsilon \quad} \boxed{q_2}$