

CS 302
QUIZ 6

12 November, 2019

ANSWER

(a) $P = (\{q_0, f\}, \{0, 1\}, \{0, 1, Z_0\}, \delta, q_0, Z_0, \{f\})$ and δ is given by the following transitions:

$(q_0, 0, X) \rightarrow (q_0, 0X) ; X \in \{0, 1, Z_0\}$

$(q_0, 1, X) \rightarrow (q_0, 1X) ; X \in \{0, 1, Z_0\}$

$(q_0, e, X) \rightarrow (q_1, X) ; X \in \{0, 1, Z_0\}$

$(q_1, 1, 1) \rightarrow (q_1, e)$

$(q_1, 0, 0) \rightarrow (q_1, e)$

$(q_1, e, Z_0) \rightarrow (f, Z_0)$

(b) $(q_0, 0110, Z_0) \vdash (q_0, 110, 0Z_0) \vdash (q_0, 10, 10Z_0) \vdash (q_1, 10, 10Z_0) \vdash (q_1, 0, 0Z_0)$

$\vdash (q_1, e, Z_0) \vdash (f, e, Z_0)$