The circuit shown in Figure 1 will be analyzed.
1) Find the Boolean functions of the flip-flop inputs (T1, T2).
2) Find the Boolean functions of the output (z).
3) Find the state equations for Q1, Q2. ($Q=T \oplus q$, $Q(t+1)=T \oplus Q(t)$)
4) Draw the state transition table of the circuit.

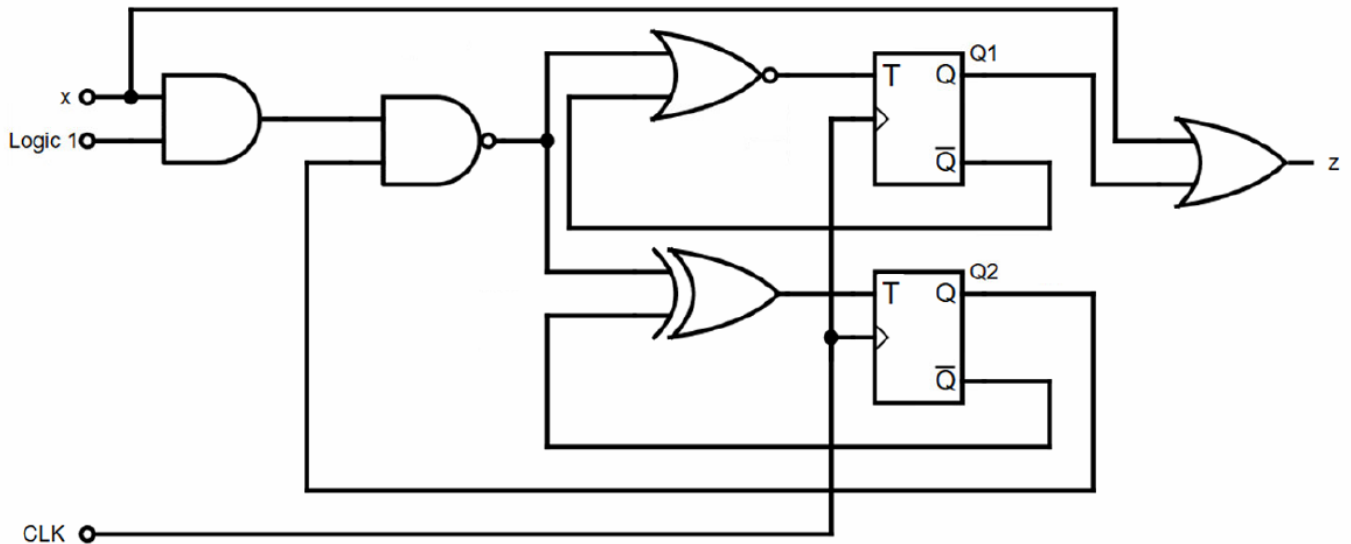**Figure 1**