Step 1.1 Identify the Next-State Decoder

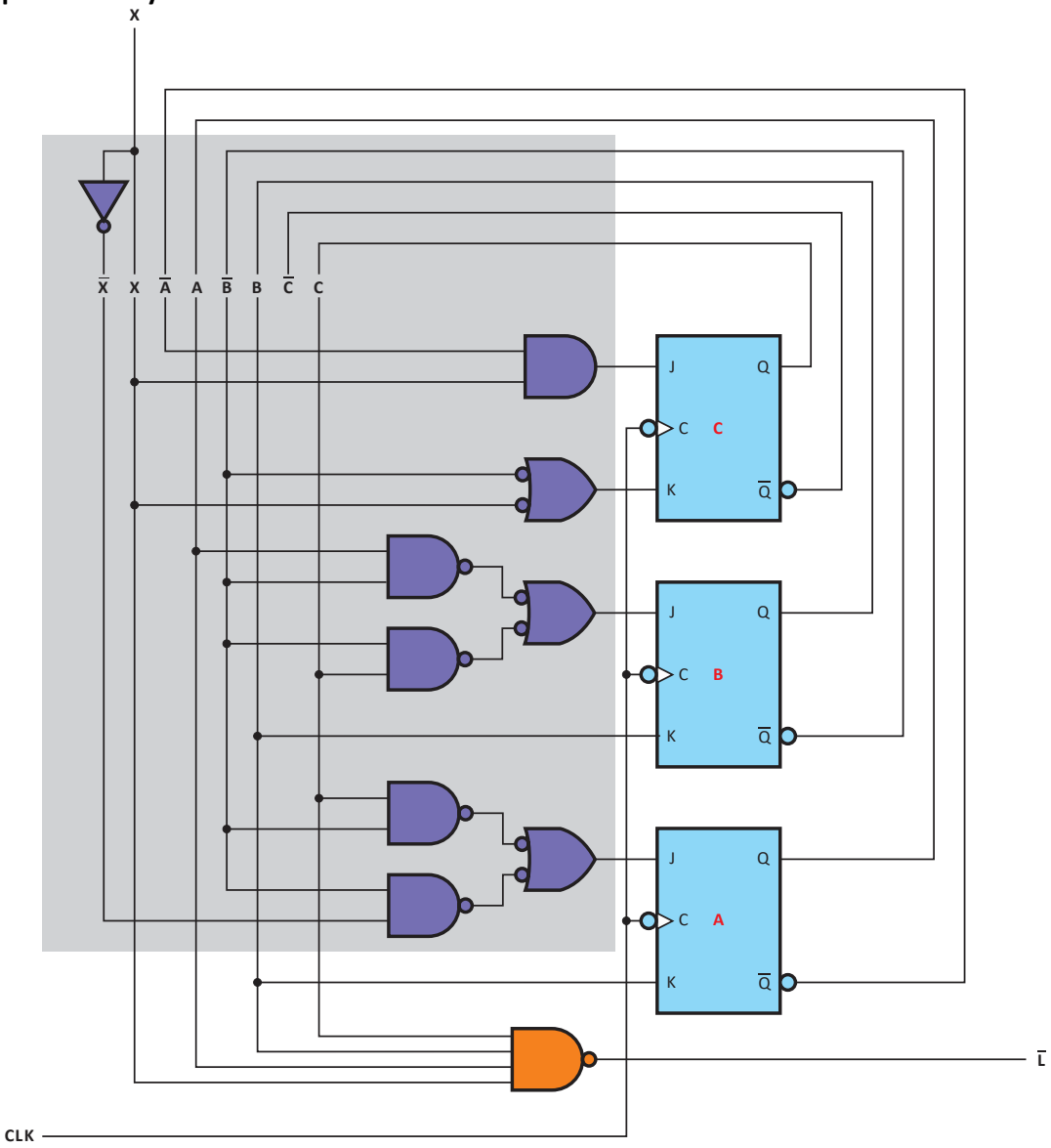

Figure 1. The Next-State Decoder

2. Write the Boolean expression for each of the outputs of the next state decoder

- $J_A = \overline{B}C + \overline{B}\,\overline{X}$
- $K_A = B$
- $J_B = A\overline{B} + \overline{B}C$
- $K_B = B$
- $J_C = \overline{A}X$
- $K_C = B + \overline{X}$

Step 1.2 Identify the array of flip-flops also called memory element

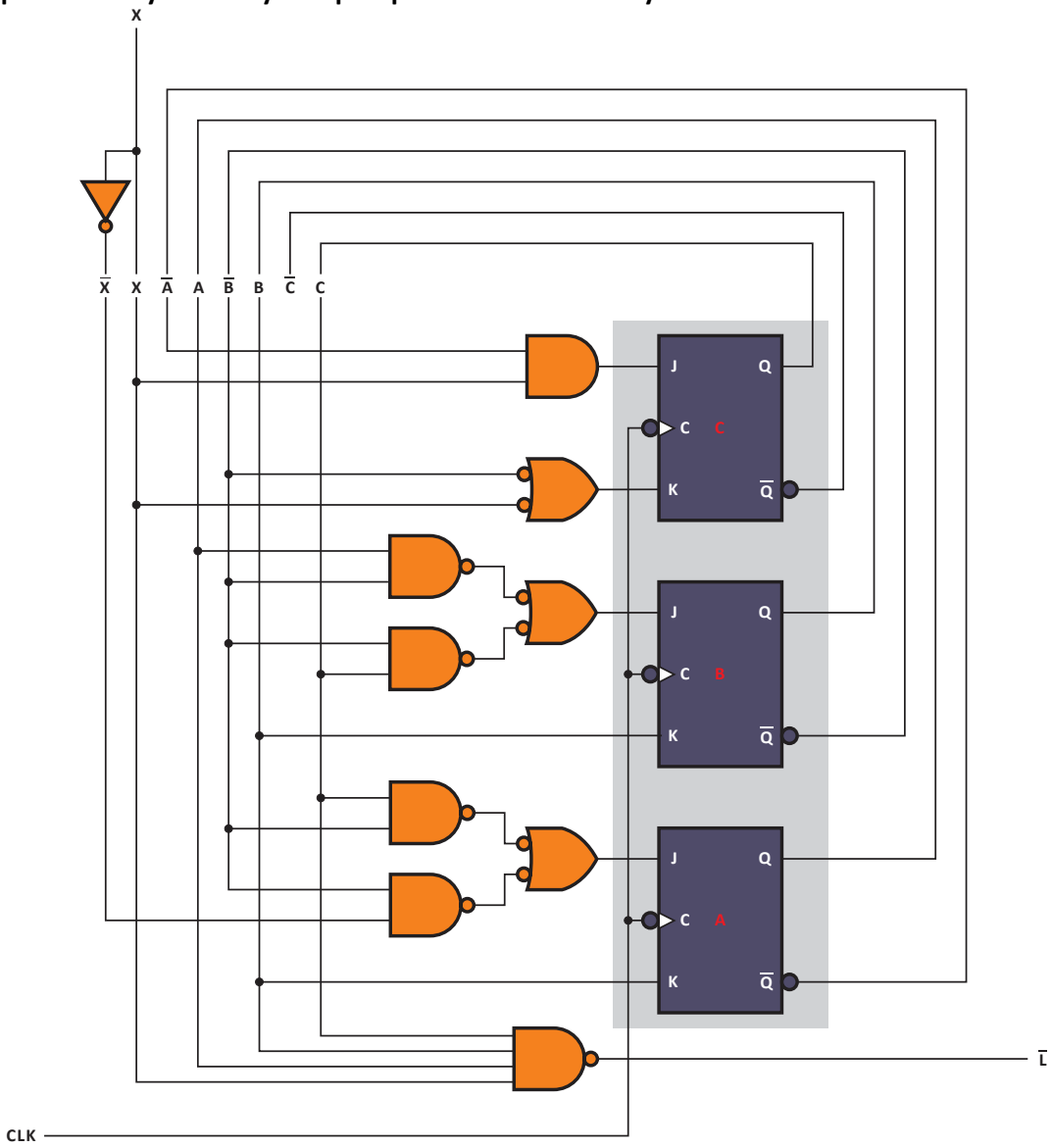

Figure 2. Array of Flip-Flops

1.3. Identify the output decoder – it may or may not be present

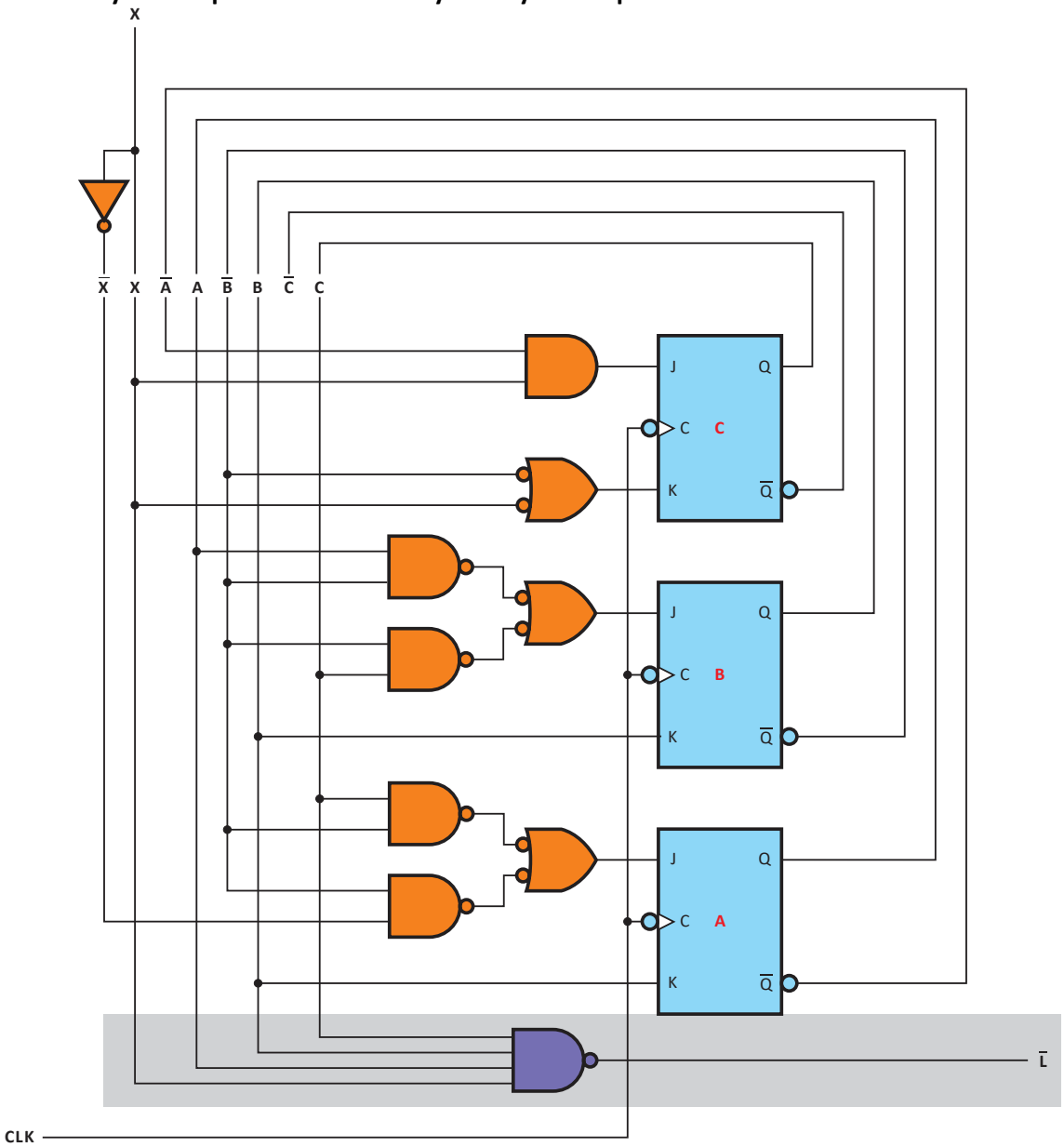

Figure 3. Output Decoder

Write Boolean equations for the output decoder.

- $\boldsymbol{L = \overline{ABCX}}$
- $\boldsymbol{\overline{L} = ABCX}$