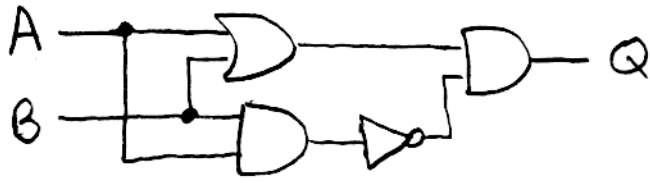


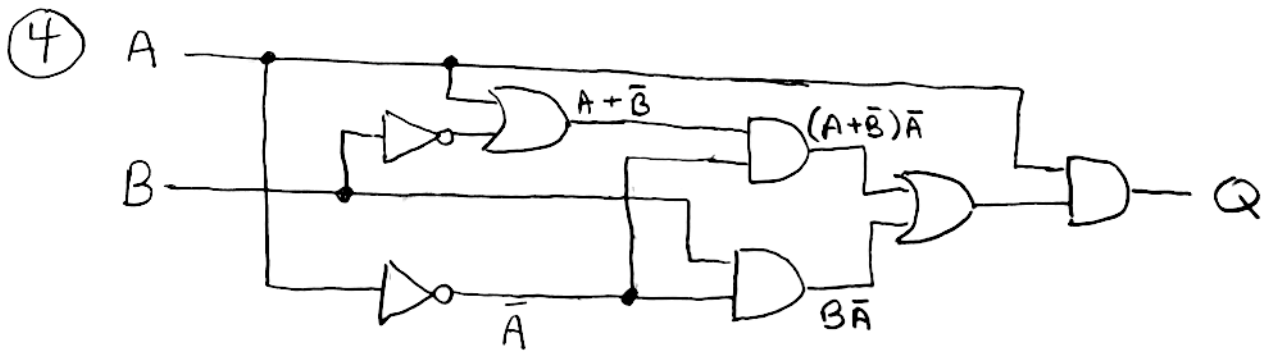
# BIOE 131D Homework 9 Answers

①  $Q = (A+B)(\bar{A}B)$



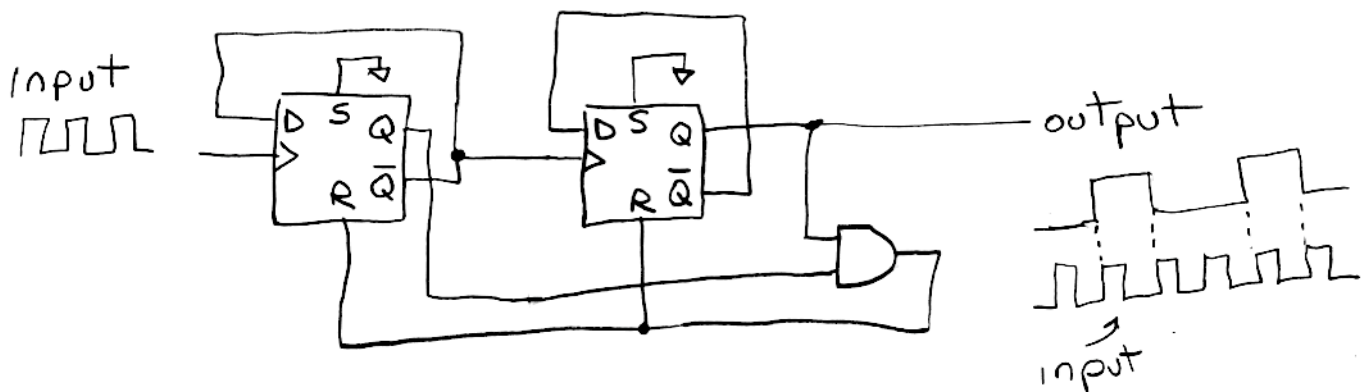
②  $3B_{16} = 59_{10}$ ,  $A1_{16} = 161_{10}$ ,  $17_{16} = 23_{10}$

③  $245_{10} = 11110101_2$ ,  $17_{10} = 10001_2$ ,  $511_{10} = 111111111_2$



⑤  $Q = \overline{((AB) + (\bar{A} + B))}$

⑥ Here's one solution; when it counts to  $11_2$  it resets itself to  $00_2$



Thus it repeats every 3 input cycles.