35. If \( V_i > 7.4 \text{V} \), then \( D \) is ON \( \Rightarrow V_o = 0 \text{.7V} \)
If \( V_i < 4.7 \text{V} \), then \( D \) is OFF \( \Rightarrow V_o = V_i \)

36. If \( V_i > 7.4 \text{V} \), then \( D \) is ON \( \Rightarrow V_o = 0 \text{.7V} \)
If \( V_i < 4.7 \text{V} \), then \( D \) is OFF \( \Rightarrow V_o = V_i - 4 \)
If \( V_m = -8 \text{V} \) \( \Rightarrow V_o = -12 \text{V} \)
Start with the position & input signal in which the diode will conduct

1. at the Region:
   The diode will be ON ✓ $V_o = V_c = 0V$

2. at the Region
   The diode will be OFF, remember from the -ve region that the capacitor charged until it reached the peak value of the input signal.

   $U_c = \text{peak} \Rightarrow U_c + U_v = V_o$
   $V_c = U_i \text{ (-ve region)}$
   $\therefore V_o = 2V_c$

   + Note: Some swing for the input & output signal $= 40V$

3. at the Region:
   - diode is ON ✓ $V_o = -5V$, $V_i + U_c + 5 = 0 \Rightarrow U_c = 20 - 5 = 15V$
   - diode is OFF ✓ $V_o = V_i + U_c = 20 + 15 = 35V$
From the first view, you can notice that both diodes are ON. However, they are not parallel, so they cannot take different voltages.

**Case 1:**

\[ V_0 = 1 \text{ V} \]

\[ V_0 = 3 \text{ V} \]

So, one of the diodes must be off, which is the one with \( V_0 = 1 \) V. Therefore, \( V_0 = 3 \) V.

So, 0 is off, D2 is ON.

\[ V_0 = 3 \text{ V} \]

\[ I = (3 + 5) \times 1 \times 10^{-3} = 8 \text{ mA} \]
\[ I = \frac{(1 + 5)}{10} \times 4 \text{mA} \]

\[ V_0 = 1V \]

\[ V_0 = 5 - 1.5 \times 4V \]

\[ V_0 = 2V \]

\[ \therefore 0_1 \text{ on}, \quad 0_2 \text{ off} \]

\[ V_8 = -(2 - 1) - 1V \]
Assume Q is off, replace it with O.C.L.

\[
\begin{align*}
I_1 &= \frac{13}{2k} \approx 6.5 \text{mA} \\
I_2 &= \frac{10}{2k} = 0.5 \text{mA}
\end{align*}
\]

\[
V_a = 5V, \quad V_b = 6.5V
\]

\[
V_d = V_a - V_b = 5 - 6.5 = -1.5V
\]

D is off, \( I_d = 0 \)

Assume D1 is off, replace it with O.C.D2 is on.

\[
I = (10 - 0.7 + 0.7/15k) = 12.8666 \text{mA}
\]

\[
10 - V_a = 5k \times 12.8666 \text{mA} \Rightarrow V_a = 3.5667 \text{V}
\]

D1 is on.

\[
I_1 = 10 - 0.7 = 1.86 \text{mA} \Rightarrow I_3 = I_1 - I_2
\]

\[
I_2 = \frac{10V}{10k} = 1 \text{mA}
\]

\[
I_1 = 1.86 \text{mA}
\]

\[
I_2 = 0.86 \text{mA}
\]
The circuit solution:

1. **Positive region:**
   - If \( V_x > 1.7V \), \( S_i \) is ON, \( G_e \) is OFF.
   - \( V_o = 3 + 0.7 = 3.7V \)

2. **Negative region:**
   - If \( V_x < -3.3V \), \( G_e \) is ON, \( S_i \) is OFF.
   - \( V_o = -1.3V \)

3. **\(-3.3V \leq V_x \leq 1.7\):**
   - Both \( G_e \) and \( S_i \) are OFF.
   - \( V_o = V_x + 2 \)

\[ I = \frac{2.7 - 0.7 + 5}{(8 + 5 + 2)k} \]

26. \( 3V_x = (8k \times 2.08667m) \Rightarrow V_x = 9.66667V \)

\[ V_D2 = 7.66667 - 2 = 7.66667 \Rightarrow D_2 \text{ is ON} \]

\[ V = \frac{2.7 + V_1 + 0.3 + V + 5}{2} \]

**Node-Voltage Method**
\[ V_2 = -2.11 \Rightarrow V = -1.7583 \text{V} \]

\[ I = -1.7583 + 0.72916 \text{mA} \]

\[ V_x = -1.45833 \text{V} \]

\[ V_{O_2} = 0.3 \text{V} \quad \therefore \quad O_2 \text{ is on} \]

\[ I_1 = 27 - 0.7 - 0.7 = 2.95 \text{mA} \]

\[ I_x = -0.72916 + (2.7 + 1.7583) = 0.1625 \text{mA} \]

\[ I_2 = I_x - I_y \]

\[ = (2.7 + 1.7583) - (-0.72916) \]

\[ = 1.62082 \text{mA} \]