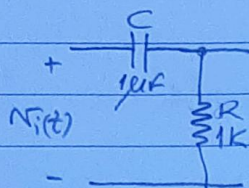


18 - Quando CLK = 0 o circuito está em
 free-charge e V vem incondicionalmente a $V_{DD} = '1'$

16 -



$$Z_i = R - j \frac{1}{2\pi f C}$$

$$|Z_i| = \sqrt{R^2 + \left(\frac{1}{2\pi f C}\right)^2} = 2k$$

(c)

Com $R = 1k\Omega$, $C = 1\mu F$ obtém-se $f = 92Hz$

11 - $V_C(0+) = 50V$ que é a tensão de fonte
 onde C esteve ligado para $t < 0$

(a)

$$12 - \tau = R_{eq} C = (20 // 5) \times 25n = 100ns$$

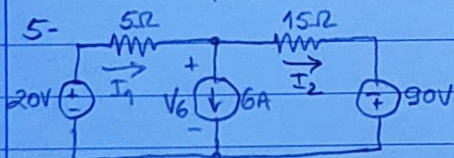
(b)

1 - $P = V \cdot I$ não é a de Ohm (a)

$$3 - P = \frac{V^2}{R} \quad R = \frac{12^2}{35} = 4.11\Omega \quad (c)$$

4 - Divisor de corrente:

$$I_{(1A)} = -\frac{9}{9+2} 11 = -9A \quad (b)$$



$$KVL: -20 + 5I_1 + 15I_2 - 90 = 0$$

$$I_1 - I_2 = 6 \Rightarrow I_2 = I_1 - 6$$

$$5I_1 + 15(I_1 - 6) = 110 \Rightarrow I_1 = 10A$$

$$I_2 = 4A$$

$$P_{20} = 20 \times 10 = 200W$$

$$P_{90} = 90 \times 4 = 360W \quad (a)$$

$$V_6 = 20 - 5I_1 = -30V$$

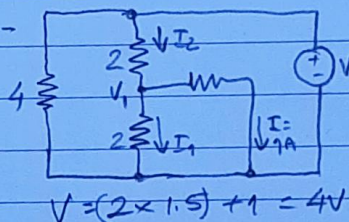
$$P_6 = V_6 \times (-6) = -30 \times (-6) = 180W$$

$$6 - I = C \frac{dV}{dt} \rightarrow \Delta V = \frac{I}{C} \Delta t$$

$$\Delta V = \frac{10mA}{0.5mF} (0.1A) = 2V \quad (b)$$

7 - (a)

8 -



$$V_1 = 1 \times 1 = 1V$$

$$I_1 = \frac{1}{2} = 0.5A$$

$$I_2 = 1.5A$$

$$V = (2 \times 1.5) + 1 = 4V \quad (c)$$

10 - Passa alto (c)