

17. a) $T = RC$
 $= (2.5 \times 10^4)(4 \times 10^{-6})$
 $= 0.1 \text{ s} \quad = \text{LENGTH OF FLASH}$

THE TIME CONSTANT IS 0.1 SECONDS. THEREFORE, WHEN THE PLATES ARE FULLY CHARGED THE FLASH FREQUENCY CAN BE FOUND BY THE FOLLOWING

$$V = V_0(1 - e^{-t/RC})$$

$$\ln(1 - (V/V_0)) = -t/RC$$

$$t = -\ln(1 - (V/V_0))(RC)$$

$$t = -\ln(1 - (75/110))(0.1 \text{ s})$$

$$t = 0.114 \text{ s}$$

THE FLASH FREQUENCY IS 0.114 s.

