1) $V_{MEDIO} = \frac{1}{T} \cdot \int_0^2 F(T)\,DT$ $\qquad F(T) = \frac{50\,mV}{2\,seg} \cdot T$

$\int_0^2 F(T) = \left[\frac{2^2}{2} - \frac{0^2}{2}\right] \cdot \frac{50\,mV}{2s}$

$V_{MEDIO} = \frac{25\,mV}{2s} \cdot 2s^2 = \boxed{25\,mV}$

3) $\lambda = \frac{C}{F}$ (C → V. LUZ; F → FRECUENCIA) $\qquad \lambda$ = LONGITUD ONDA

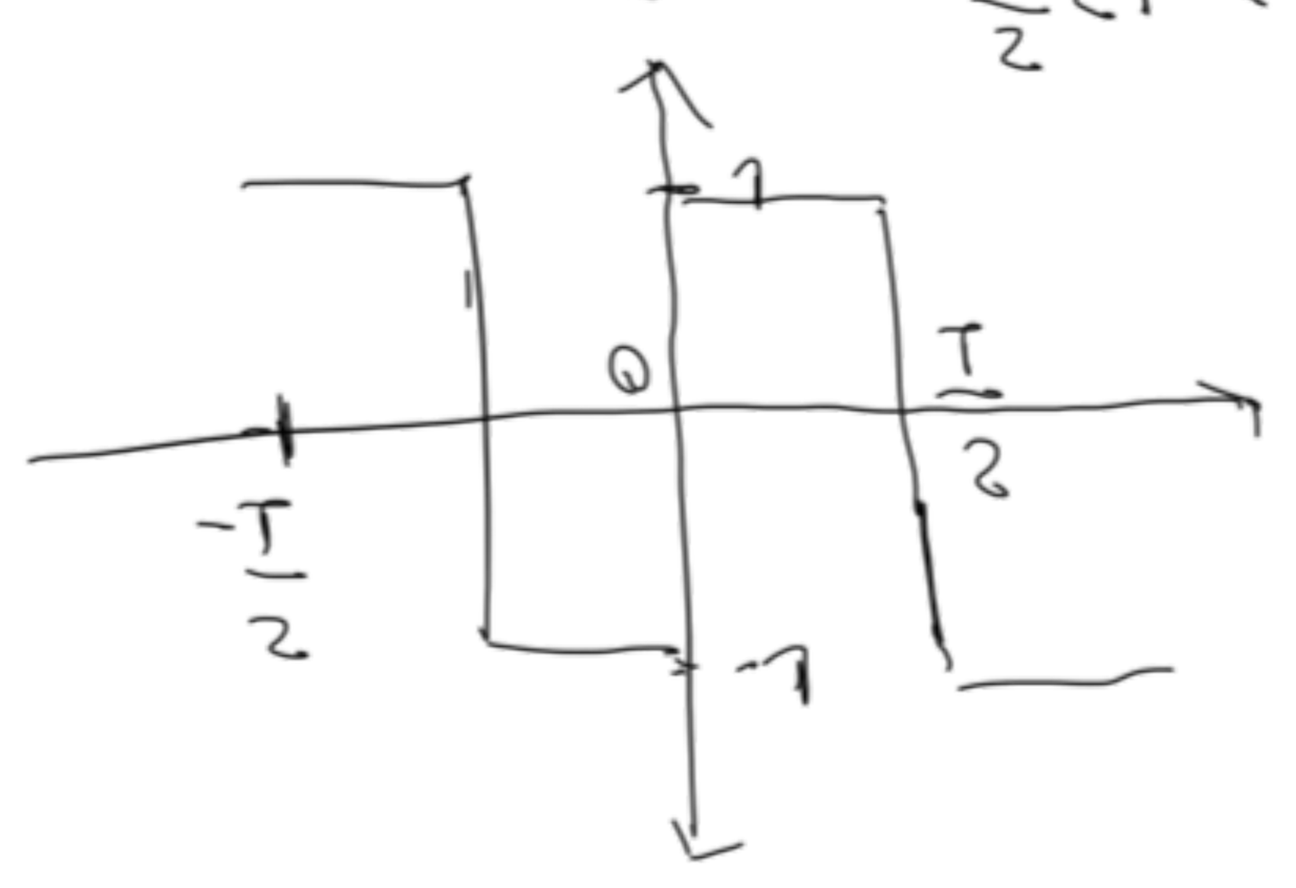
$\lambda_{min} = \frac{3 \times 10^8\ m/s}{88 \times 10^6\ Hz} = 3{,}409\ m$

$\lambda_{max} = \frac{3 \times 10^8\ m/s}{108 \times 10^6\ Hz} = 2{,}778\ m$

VARIACION: 2,7 m — 3,4 m

4) $F(T) = 1 \quad 0 < T < \frac{T}{2}$

$F(T) = -1 \quad -\frac{T}{2} < T < 0$



8) FRP = 100 PPS → T = 0,01 SEG

$V_M = 2.000$ BAUDIOS → $\frac{1}{2000} = 0{,}5 \times 10^{-3}$ SEG

A = 1 V

$n = \frac{T}{D} = \frac{0{,}01}{0{,}0005} = 20$ ARMONICOS

ANCHO BANDA $\Delta F = 20 \cdot F_0 = 20 \times 100\,Hz = 2000\,Hz$

$\frac{AD}{T} = A_{maxima} = \frac{1 \times 0{,}0005}{0{,}01} = 0{,}05$

9) FRP = 300 $\quad T = \frac{1}{300} = 0{,}0033$

$V_m = 2000\ B = \frac{1}{1200} = 0{,}00083$

A = 1 V

$n = \frac{T}{D} = \frac{0{,}0033}{0{,}00083} = 3{,}96 \cong 4$ ARMONICOS

$A_{max} = \frac{1 \times 0{,}00083}{0{,}0033} = 0{,}25$

$\Delta F = 4 \cdot F_0 = 4 \times 300\,Hz = 1200\,Hz$ ANCHO BANDA

PRACTICA PARTE 2

5) $V_m = 1200\ B = \frac{1}{1200} = 0{,}83 \times 10^{-3}$

$V_{FINAL} = 4800$ BPS

$\frac{4800}{1200} = \log_2 n \qquad n = 16$

TRANSMISION MULTINIVEL

ANCHO PULSO $= \frac{1}{4800} = 0{,}20 \times 10^{-3}$

8) RENDIMIENTO SINCRONICA = 100 %, NO HAY BITS PARA SINCRONIZAR

$R = \frac{8}{1+1+2+8} \times 100 = 66{,}6\,\%$

$TTT = 1024\ BYTES \times 8 \times \frac{1\ seg}{2400\ Bit} = 3{,}41$ SEGUNDOS

$TTT = 1024 \times 12 \times \frac{1}{2400} = 5{,}12$ SEG

$\frac{3{,}41}{5{,}12} = 0{,}66\,\%$ MAS LENTO

9) 1000 (4) 0000 0000 0000 01

TOTAL = 18 BITS

$T = \frac{1}{2400} \qquad \frac{V_T}{V_m} = \log_2 n$

N = 16

NO MULTI: TIEMPO $= 18 \times 0{,}416 \times 10^{-3} = 7{,}5$ mseg

CON MULTI: = 7,5 mseg / 4 = 1,87 mseg

(4 → CUADRI BITS)