Siskom 1

M. Hasyim Abdillah P.
1101119095
TT-43-11

1. $m(t) = 3,6 \cos(2000\pi t)$ V
   $\Delta = 0,2$ V
   $r = 0,5$

a. $F_N = 2 F_{max} \cdot 1,2$

F_{max} : $\omega = 2\pi F_{max} = 2000\pi$
$F_{max} = 1000$ Hz

$F_N = 2 \cdot 1000 \cdot 1,2$
$= 2.400$ Hz

b. $L = \frac{2 x_{max}}{\Delta} = \frac{2 \cdot 3,6}{0,2} = 36$ level

$L = 2^n = 36$
$n = {}^2\log 36$
$n = 5,17$
$n = 6$ bit/sampel

c. $SNR_Q = 6,02 \cdot n + 4,77 - 20 \log \alpha$

$= 6,02 \cdot 6 + 4,77 = 40,89$ dB

d. $BR = n \cdot F_N = 6 \cdot 2.400 = 14.400$ bps

$BW = (1+r)\frac{BR}{2} = (1+0,5)\frac{14.400}{2}$

$BW = 10.800$ Hz