Id: 20-33-5314

Ans: to the Q: no: 01

(1) Given that,

Signal power $P_s = 14\ W$

Noise power $P_n = 2W$

$$SNR_{dB} = 10 \log 10\ SNR$$

$$SNR_{dB} = 10 \log 10 \frac{P_s}{P_n}$$

$$SNR_{dB} = 10 \log_{10} \frac{14}{2}$$

$$= 8.4509\ dB \quad (Ans:-)$$

Id: 201-33-5304

Ans: to the: Q.no: 02

(2) Given that,

Bandwidth, $B = 12\ kHz$

$SNR = 20\ dB$

$\therefore SNR = 10 \log (SNR)$

$= 10^{20/10}$

$= 100$

$C = 3.32B \log 10\ (1 + SNR)$ bits/sec

$= 3.32 \times 12000 \times \log 10\ (1 + 100)$ bits/sec

$= 79852.1635$ bits/sec

$= 79.8521k$ bits/sec

$= 80$ kbits/sec (Ans:-)