

5.1 OFDM system with  $N=16$  carriers and 16 QAM each carrier bit rate vs bit rate of 64 QAM single carrier system with same bandwidth?

Sol

False

$$\text{Since } \rho = \frac{R_b}{W} = \frac{R_s}{W} \sum_{k=0}^{N-1} k_n \approx \frac{1}{N} \sum_{k=0}^{N-1} k_n$$

and on same bandwidth  $W$ , 64-QAM has higher bit rate than the OFDM.