

1) Latency = propagation time + transmission time + queuing time + processing delay.

2) propagation time = $\frac{\text{Distance}}{\text{Propagation speed}}$

3) transmission time = $\frac{\text{Message size}}{\text{bandwidth.}}$

4) period, $T = \frac{1}{f}$

5) offset to degree \Rightarrow 360° - ফিল্ড হুন
radian \Rightarrow $\frac{2\pi}{360}$ ফিল্ড হুন

6) $\lambda = \frac{c}{f}$

7) Bandwidth $B = f_h - f_l$

+ 2 (ন) Gained
- n reduce.

8) Attenuation, $dB = 10 \log_{10} \frac{P_2}{P_1}$

9) $dB_m = 10 \log_{10} P_m$

10) Capacity = bandwidth $\times \log_2 (1 + SNR) \rightarrow$ Shannon.

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$$11) \text{Bitrate} = 2 \times \text{bandwidth} \times \log_2 L \rightarrow \text{Nyquist.}$$

$$12) \text{SNR} = \frac{\text{average signal power}}{\text{average noise power.}}$$

$$13) \text{SNR}_{\text{dB}} = 10 \log_{10} \text{SNR.}$$

14) Relation between signal rate and data rate.

$$S = \frac{N}{T.}$$