
CHAPTER 4

Transmission Media

Multiple-Choice Questions

1. a
3. c
5. a
7. b
9. a
11. d
13. d
15. a
17. b
19. d
21. b
23. b
25. b

Exercises

27. $22,287.83 \text{ miles} / 186,000 \text{ miles per second} = 0.120 \text{ s} = 120 \text{ ms}$
29. $\text{dB} = 10 \log_{10} (90 / 100) = -0.46 \text{ dB}$
31. The total gain is $3 \times 4 = 12 \text{ dB}$. The signal is amplified by a factor $10^{1.2} = 15.85$.
33. $100,000 \text{ bits} / 5 \text{ Kbps} = 20 \text{ s}$
35. $480 \text{ s} \times 300,000 \text{ km/s} = 144,000,000 \text{ km}$
37. $1 \text{ } \mu\text{m} \times 5 = 5 \text{ } \mu\text{m}$
39. $4,000 \log_2 (1 + 10 / 0.005) = 43,866 \text{ bps}$

