

PCS– QUESTION BANK

(IE4G/IS4G)

CHAPTER 1

1. Comparison between Am and FM. (4m)
2. Draw and explain block diagram of basic communication system (4m)
3. Calculate modulation index of AM signal if maximum amplitude $V_{max} = 20\text{mV}$ and minimum amplitude $V_{min} = 15\text{mV}$. (3m)
4. Explain electromagnetic spectrum (4m)
5. Define FM with Waveform. (3m)
6. Explain different sources of noise. (4m)
7. Define the following (4m)
(a) noise factor (b) signal to noise ratio
8. Explain the generation of FM using varactor diode method (3m)
9. Compare PAM, PWM and PPM. (4m)
10. State the sampling theorem and Nyquist criteria (4m)
11. What is modulation? State its needs. (3m)
12. Draw the frequency spectrum of AM (3m)

CHAPTER 2

13. Differentiate ASK, FSK and PSK. (3m)
14. Explain ASK along with the block diagram (4m)
15. Explain FSK along with the block diagram (4m)
16. Explain delta modulation technique along with two advantages (4m)
17. Explain Adaptive delta modulation technique along with two advantages (4m)
18. What is QPSK. Explain with block diagram. (4m)
19. Explain FDM along with its block diagram (3m)
20. Explain TDM along with its block diagram (3m)
21. Sketch ASK, FSK, PSK signals for following data streams 101101010 (3m)
22. Write short notes on (a) unipolar RZ (b) split phase Manchester format (4m)
23. Write short notes on (a) unipolar NRZ (b) differential Manchester format (4m)
24. Encode the following binary data streams into RZ, NRZ and Manchester code 11000010 (3m)
25. Draw block diagram of PCM along with its application. Write two applications of PCM (4m)

4 Marks

1. Compare FDMA, TDMA, CDMA.
2. With reference to satellite communication explain Station keeping & satellite altitude.
3. Explain block diagram of satellite communication system.
4. Sketch OSI reference model & give function of data link & network layer.
5. Compare LAN, MAN, WAN.
6. Explain Star & Mesh topology.
7. Explain Synchronous & Asynchronous data transmission.
8. Draw pin configuration of RS-232 standard & give its four electrical characteristics.
9. Give call routing sequence for mobile to mobile.
10. Explain Hand off mechanism.
11. Describe different losses in fiber optic.
12. Explain block diagram of optical communication system.
13. Explain any two network connecting devices.

3 Marks

1. Explain cell splitting technique.
2. What is frequency reuse concept.
3. Differentiate Step index & Graded Index optical fiber.
4. Explain P-i-n photo diode as optical detector.
5. Explain satellite downlink model.
6. Explain Co channel & adjacent channel interference.
7. Describe block diagram of cellular telephone system.
8. Describe functional block diagram of MODEM.
9. Explain security services message confidentiality & message integrity.
10. Explain digital signature.
11. Explain dispersion loss in detail.

12. Explain principle of cell sectoring.