

BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

QUESTION BANK

Question Bank (K - Scheme)

Name of subject: Digital communication system

Unit Test: II

Subject code: 314326

Program: EJ

Semester: IV

Unit 3 Digital Modulation Techniques (14 Marks)

2 Marks Questions

1. List the Digital Modulation Schemes.
2. State the Bandwidth requirement of (i) BPSK (ii) BFSK (iii) QPSK (iv) BASK
3. State different types of QAM
4. Draw constellation diagram of BPSK, QPSK, BASK
5. Define ASK, PSK, FSK

4 Marks Questions

6. Describe the working of BPSK transmitter using block diagram. Also draw its waveforms..
7. Draw the (a) Block diagram of QAM transmitter (b) Constellation diagram of 8 QAM.
8. Explain the need of M-ary encoding. Draw the block diagram of M-ary FSK.
9. Explain the generation of DPSK using block diagram and waveforms.
10. Define ASK. Explain Block Diagram of ASK generation with wave forms.
11. 'QPSK is better than PSK', illustrate this statement along with block diagram and waveforms of QPSK.
12. Describe the reception of BPSK with block diagram. State the mathematical equation for the binary signal obtained at the output.
13. Explain the generation of BFSK signal with the help of block diagram.
14. draw waveforms for binary data 10110010 in ASK, FSK, PSK modulation.
15. Describe the M-ary PSK encoding technique with neat block diagram.
16. Compare binary ASK, FSK & PSK modulation techniques (any six points).
17. Distinguish between m-ary PSK & m-ary FSK techniques. (Any six points)

Unit 4 Multiplexing and Multiple access techniques (12 MARKS)

2 Marks Questions

1. State the types of Multiplexing techniques.

1. State the need of Multiplexing
2. List any two advantages and disadvantages of CDMA system.
3. List different types of multiple access techniques.
4. List any two advantages and disadvantages of FDMA system

4 Marks Questions

1. Compare FDMA, TDMA and CDMA on the basis of following points-
 - a) Guard band
 - b) Guard time
 - c) Codeword
 - d) Synchronization
2. State the advantages and disadvantages of FDM system
3. Explain Synchronous time – division multiplexing using block diagram.
4. Apply the concept of asynchronous multiplexing to draw the schematic diagram for 4-channel system.
5. List 4 advantages of TDMA over FDMA
6. Draw the block diagram of TDMA system and explain its working.
7. Compare FDM CDM & TDM systems
8. Explain FDM using block diagram.
9. Explain CDM using block diagram.

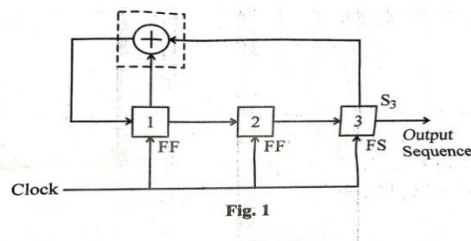
Unit 5 Spread Spectrum Modulation .((12 Marks)

2 Marks Questions

1. Draw the neat block diagram of Direct Sequence Spread spectrum transmitter
2. State applications of spread spectrum modulation .(any two)
3. State two advantages of spread spectrum modulation.
4. Define the concept of spread spectrum.

4 Marks Questions

5. Differentiate the Direct Sequence Spread spectrum with frequency hopping spread spectrum techniques
6. Generate the Pseudo-noise sequence by the feedback register shown in Fig-1.



- 3 For the PN sequence generator 15 bit long obtain and draw the PN sequence.
Assume initial contents of the shift register are: $Q_4 Q_3 Q_2 Q_1 = 1001$ Explain working of the circuit.
- 4 Describe spread spectrum modulation with help of block diagram.
- 5 Explain fast frequency hopping techniques with suitable waveforms
- 6 Compare slow frequency hopping techniques and fast frequency hopping techniques