SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | Total number of pages:[2]
Total number of questions: 06

## B.Tech. || ECE || 5th Sem

# Digital Communication System

## Subject Code: BTEC-501

## Paper ID:

**Time allowed: 3 Hrs** **Max Marks: 60**

**Important Instructions:**

- **All questions are compulsory**
- **Assume any missing data**

### PART A (10x 2marks)

Q. 1. Short-Answer Questions:

(a) Define information and entropy.
(b) State Shannon-Hartley law.
(c) What is aliasing? How it can be avoided?
(d) What are disadvantages of delta modulation? How can these be overcome?
(e) What do you mean by ISI?
(f) Differentiate between bit and word interleaving.
(g) What are advantages and disadvantages of time division multiplexing?
(h) Differentiate between coherent and non-coherent detection.
(i) What is difference between bit rate and baud rate?
(j) What is difference between binary and M-ary modulation?

### PART B (5×8marks)

Q. 2. Draw block diagram of digital communication system and explain function of each component. CO1

OR

With the help of suitable example, explain the steps followed for Huffman coding. CO1

Q. 3. Explain working of transmitter and receiver of PCM system. CO2

OR

Explain working of delta modulator. Discuss its advantages and disadvantages. CO2

Q. 4. a) What is line coding? Discuss the properties of line codes. CO3
b) For binary sequence 11010110, construct NRZ, RZ, AMI and Manchester formats.

OR

a) Discuss the fundamentals of time division multiplexing. CO3
b) Explain statistical time division multiplexing.

Q. 5. Explain working of ASK modulator and demodulator. Draw ASK waveform and power spectrum. CO4

OR

Explain working of FSK modulator and demodulator with the help of block diagram and waveforms. What is the bandwidth requirement for FSK signal? CO4

Q. 6. Explain working of QPSK modulator and demodulator with the help of block diagram and waveforms. CO4

OR

With the help of suitable example, explain working of DBPSK transmitter and receiver. CO4

Q1

Q2)

Q3)