

Con/2916-07.

(REVISED COURSE)

(3 Hours)

ND-1474

[Total Marks : 100

N.B. : (1) Question No. 1 is compulsory.

(2) Attempt any four questions from Q. Nos. 2 to 7.

1. Answer the following questions in brief : 20
 - (i) Baseband modulated signal is different than carrier modulated signal. Compare the two signals.
 - (ii) Corelative coding is used for partial response signaling. Why ?
 - (iii) Channel coding technique is different from source coding. How ?
 - (iv) COMA transmission uses spread spectrum signal. Justify.
 - (v) BPSK transmission is coherent transmission. Justify.

2. Explain the modulation scheme for the following carrier modulated signals : 20
 - (i) QPSK signal
 - (ii) MSK signal
 - (iii) BFSK signal
 - (iv) Spread spectrum signal.

3. Explain the following questions with proper illustration :
 - (i) In DEPSK transmission, error always exist in pairs. 7
 - (ii) BFSK transmission can be orthogonal or non-orthogonal. 7
 - (iii) Phase continuity is maintained in MSK-signal. 6

4. Derive the following relationships :
 - (i) PSD of QPSK signal. 7
 - (ii) Euclédian distance of non-orthogonal BFSK signal. 7
 - (iii) Nyquist rate for PCM signal. 6

5. Consider the binary bit stream 110110100010, draw the following waveforms :
 - (i) Baseband signal in NR2, Manchester and polar RZ format. 7
 - (ii) Carrier modulated signal in BPSK, QPSK and MSK signal format. 7
 - (iii) (7, 4) block coded BPSK signal. 6

6. (a) Explain FHSS technique with the help of block diagram and signal frequency spectrum. 10
(b) Define the following terms : 10
 - (i) Systematic and non-systematic code
 - (ii) Hamming weight and Hamming distance
 - (iii) Entropy and redundancy
 - (iv) Code rate.

7. Write short notes on any two : 20
 - (i) ISS and ICI
 - (ii) Eye diagram
 - (iii) Trellis diagram.