

SUBJECT : ADVANCED DIGITAL COMMUNICAITON SYSTEM

Day : Thursday
Date : 16/05/2019

S-2019-3377

Time : 11.00 AM TO 02.00 PM
Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in the **SAME** answer books.
- 4) Draw neat and labeled diagram **WHEREVER** necessary.
- 5) Assume suitable data, if necessary.

SECTION – I

Q. 1 With a neat block diagram, mathematical expressions & waveforms, describe QPSK Transmitter & Receiver operation. (10)

OR

With the help of block diagrams & waveforms, compare the performance of BASK, BFSK & BPSK systems. (10)

Q. 2 Derive an expression for signal to noise ratio & error probability of a matched filter in the presence of white Gaussian noise. (10)

OR

Derive an expression for error probability of coherent FSK. (10)

Q. 3 With a suitable example, explain the architecture & performance of binary block codes. (10)

OR

Explain how generator & parity check matrices are obtained for cyclic codes. (10)

SECTION – II

Q. 4 How the fading in a frequency non-selective channel is overcome? Explain in detail. (10)

OR

Give an account on different diversity techniques for fading channels. (10)

Q. 5 Using block schematics, describe the Direct Sequence Spread Spectrum transmitter & receiver system. (10)

OR

Explain Frequency Hopping Spread Spectrum FSK modulation with the help of transmitter & receiver. (10)

Q. 6 Discuss in detail the following terms w. r. t. OFDM. (10)

- a) Guard Time
- b) Cyclic extension
- c) Windowing
- d) Clipping

OR

What is time diversity? Describe Transmit antenna diversity (MISO) & state its features. (10)

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