

Dec.-22-0209

EC-501 (Digital Communication)

B.Tech. 5th (CBCS)

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt all questions, Attempt one question each from section ABCD. Section E is compulsory.

SECTION - A

1. Explain the Sampling Theorem in context of band-pass signals, also define Natural and Flat top sampling methods in detail. (10)

OR

2. Explain the following :
 - (i) PAM Transmitter and Receiver,
 - (ii) Compare PAM and PPM.

SECTION - B

3. (i) Explain working of correlation receiver with proper diagram and compare with matched filter.
(ii) Explain (a) Inter symbol Interference (b) Eye diagram. (10)

OR

4. Explain the following:
 - (a) Power spectral density
 - (b) Bit error rate
 - (c) Spectral Efficiency
 - (d) AWGN noise
 - (e) ON-OFF keying

SECTION - C

5. Explain generation and detection of ASK, and draw constellation diagram of QPSK. (10)

OR

6. Discuss generation and detection of M-ary BPSK and M-ary QAM.

SECTION - D

7. Explain briefly (i) The QAM detector (ii) M-ary FSK system. (10)

OR

8. Describe the functions of M-FSK receiver and draw constellation diagram of 4-FSK.

SECTION - E

Attempt any 4 questions only. Each carry in equal marks.

1. Write a short note on slope overload distortion and granular noise.
2. What is delta modulation? Compare between DM and DPCM.
3. Discuss the advantage of digital Communication over analog communication system.
4. Write short note on Inter symbol interference and eye diagram.
5. What are coherent digital modulation techniques?
6. Explain matched filter receiver.
7. Explain aliasing effect. How it can be removed?
8. Draw the constellation diagram of MSK and PSK.
9. Write a short note on Additive white gaussian noise channel. (4×5=20)