GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, June – 2021

(Sixth Semester)

BECPC6010 – DIGITAL COMMUNICATON

(E.C.E)

Time: 2 hrs   Maximum: 50 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)   **(1 x 10 = 10 Marks)**

Q.1. Answer **ALL** questions   [CO#]   [PO#]

a. The digital modulation scheme in which the step size is not fixed is   CO1   PO1

    (i) Delta Modulation   (ii) ADM

    (iii)PCM   (iv) DPCM

b. The process of converting the analog sample into discrete form is called   CO1   PO1

    (i) Sampling   (ii) Quantization

    (iii)Multiplexing   (iv)Modulation

c. The sequence of operations in which PCM is done is   CO2   PO2

    (i) Quantizing, sampling, encoding   (ii) Quantizing, encoding, sampling

    (iii) Sampling, quantizing, encoding   (iv) None of the above

d. Which digital modulation technique gives better error probability?   CO2   PO2

    (i) BPSK   (ii) QPSK

    (iii) DPSK   (iv) BFSK

e. QAM is a combination of   CO3   PO1

    (i) PSK and FSK   (ii) ASK and PSK

    (iii) ASK and FSK   (iv) None of the mentioned

f. Which modulation scheme is also called as on-off keying method?   CO3   PO2

    (i) GMSK   (ii) PSK

    (iii) FSK   (iv) ASK

g. Eye Pattern Is _____   CO4   PO1

    (i) Is used to study ISI   (ii) May be seen on CRO

    (iii) Resembles the shape of human   (iv) All of the above
eye

h. For a line code, the transmission bandwidth must be   CO3   PO1

    (i) As small as possible   (ii) Depends on the signal

    (iii)Maximum possible   (iv) None of the above

i. For a noise to be white Gaussian noise, the optimum filter is known as   CO3   PO2

    (i) Bessel filter   (ii)Matchedfilter

    (iii) Base band filter   (iv) Low pass filter

j. Matched filter provides _____ Signal to Noise ratio   CO4   PO1

     (i) Minimum   (ii) Maximum

     (iii) Zero   (iv) Infinite

PART – B: (Short Answer Questions)   **(2 x 5 = 10 Marks)**

Q.2. Answer *ALL* questions   [CO#]   [PO#]

a.   What is aliasing?   CO1   PO1

b.   What is mean by granular noise?   CO2   PO2

c.   Why is PSK always preferable over ASK in coherent detection?   CO3   PO1

d.   Draw the NRZ and RZ code for the digital data **10110001.**   CO3   PO2

e.   What are the characteristics of matched filter?   CO4   PO2

PART – C: (Long Answer Questions)   **(6 x 5 = 30 Marks)**

Answer *ANY FIVE* questions   Marks   [CO#]   [PO#]

3.   Derive the expression for the sampling process in time domain for low   (6)   CO2   PO1
     pass signals.

4.   Explain PCM transmitter and receiver.   (6)   CO2   PO1

5.   Draw the block diagram of PSK transmitter and receiver and explain   (6)   CO1   PO1
     the functions of each block

6.   Explain the generation, detection, signal space diagram, bit error   (6)   CO3   PO2
     probability of FSK scheme

7.   Explain in detail about eye patterns   (6)   CO3   PO1

8.   Derive an expression for the PSD of Manchester coding   (6)   CO3   PO2

9.   Explain a how a matched filter can minimize SNR for a given   (6)   CO4   PO1
     transmitted   symbol

10. Explain in detail the principle of correlation receiver   (6)   CO4   PO1

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