Scheme – G

Sample Test Paper -I

Course Name: Electronics Engineering Group

Course Code : ET/EN/EX/EJ/ DE/EVIU/ED/EI **17535**

Semester : Fifth

Subject Title : Digital Communication

Marks : 25 **Time: 1 hour**

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.

Q.1) Attempt any THREE of the following: **Marks 9**

a) Define sampling theorem. List types of sampling techniques. Draw the flat top sampled signal.

b) Draw the basic block diagram of Digital Communication System. State the role of channel encoder and source decoder.

c) Compare analog and digital communication system

d) Draw the Polar RZ, Unipolar NRZ and Manchester code waveforms for data stream 11001010

Q.2) Attempt any TWO of the following: **Marks 8**

a) Draw the block diagram of PCM modulator and demodulator. State the function of each block.

b) Write Shannon Hartley theorem.

c) Define bit rate and baud rate. State its units.

Q.3) Attempt any TWO of the following: **Marks 8**

a) Describe CRC generation with suitable example.

b) Draw block diagram of ADM transmitter and receiver.

c) What is companding in PCM ?

.

Scheme – G

Sample Test Paper -II

Course Name: Electronics Engineering Group

Course Code : ET/EN/EX/EJ/ DE/EVIU/ED/EI **17535**

Semester : Fifth

Subject Title : Digital Communication

Marks : 25 **Time: 1 hour**

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order.

Q. 1) Attempt any THREE of the following: Marks 9

a) How the spread spectrum signal is different from normal signal?
b) Why multiplexing is required?
c) For the bit stream 10110001, sketch the waveforms for ASK, FSK and PSK.
d) State bandwidth of FSK, ASK, PSK

Q. 2) Attempt any TWO of the following: Marks 8

a) How does FDM technique combine multiple signals into one?
b) What is the purpose of guard band?
c) Draw the neat block diagram of spread spectrum digital communication system and describe it.

Q. 3) Attempt any TWO of the following: Marks 8

a) Compare FHSS and DSSS(for any four points)
b) Describe WDM system with neat block diagram.
c) Draw and Describe FSK transmitter and receiver.

Scheme - G

Sample Question Paper

Course Name: Electronics Engineering Group

Course Code : ET/EN/EX/EJ/ DE/EVIU/ED/EI **17535**

Semester : Fifth

Subject Title : Digital Communication

Marks : 100 **Time: 3 hours**

Instructions:

1. All questions are compulsory.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.

Q.1 a) Attempt any THREE of the following: **Marks 12**

a) Define i) bit rate ii) Baud rate.

b) State sampling theorem. Write its importance.

c) State the principle of orthogonality and describe OFDM techniques.

d) Compare slow frequency and fast frequency hopping.(any four point)

Q.1 b) Attempt any ONE of the following: **Marks 06**

a) Write the historical development of digital communication.

b) Generate CRC code for data word 110010101. The divisor is 10101

Q. 2) Attempt any TWO of the following: **Marks 16**

a) Describe DPCM transmitter and receiver with neat sketch.

b) What do you meant by PSK? Draw PSK transmitter and constellation diagram for 8 PSK.

c) With neat sketch describe OFDM Multi carrier system?

Q. 3) Attempt any FOUR of the following: **Marks 16**

a) Compare analog and digital pulse modulation

b) Why adaptive delta modulation is required?

c) What is the basic principle involved in CDMA technology?

d) Draw the DPSK transmitter and state the function of each block.

e) Write the bandwidth requirement of ASK,QPSK,M ary PSK,QAM

Q. 4 a) Attempt any THREE of the following: Marks 12

a) Draw the block diagram of digital communication

b) What is meant by companding? State the μ law.

c) Define PN sequence. Draw the pseudo random sequence generator.

d) Draw RZ, NRZ, Manchester and differential Manchester line code wave form for Data stream 100011100

Q.4 b) Attempt any ONE of the following: Marks 06

a) List the different types of error correction techniques. Also state the causes of Error. For a linear feedback shift register with three stages, evaluate the maximum length PN

b) Sequence for feedback taps =[3,1].

Q. 5) Attempt any TWO of the following: Marks 16

a) Describe the principle of time division multiplexing with suitable sketch.

b) With the help of block diagram and wave form explain the generation of QAM system.

c) Describe the direct sequence spread spectrum techniques with the help of block diagram

.

Q. 6) Attempt any FOUR of the following: Marks 16

a) State the any two advantages and any two disadvantages of PCM.

b) Write any four specification of T carrier system

c) Write any four advantages of QPSK.

d) State Hartleys theorem & explain channel capacity.

e) Compare QAM and QPSK.(any four points)