

Code No: 56026

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, November/December - 2015

DIGITAL COMMUNICATIONS

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

- 1.a) Draw the model of digital communication system and discuss the advantages of digital communication systems.
b) Discuss the bandwidth -S/N tradeoff. [9+6]
- 2.a) Explain about quantization and companding.
b) What is slope overload distortion and granular noise in delta modulation and how it is removed in ADM. [8+7]
- 3.a) What is the principle of BPSK? And discuss the reception of BPSK.
b) For the message sequence 1101010010, draw the
i) QPSK ii) FSK iii) ASK waveforms. [8+7]
- 4.a) Draw a base band signal receiver and obtain the signal to noise ratio for it.
b) Write a short note on eye diagram and cross talk. [10+5]
- 5.a) What is mutual information? State and prove the properties of it.
b) Explain the Shannon Fano coding with an example. [8+7]
- 6.a) What are the advantages and disadvantages of cyclic codes. Design an encoder for the (7,4) binary cyclic code generated by $g(x)=1+x+x^3$ and verify its operation using the message vector (0101).
b) Discuss the matrix description of a linear block codes. [8+7]
- 7.a) Give the Comparison of Error Rates in Coded and Uncoded Transmission.
b) Explain the viterbi algorithm of convolutional codes with an example. [6+9]
- 8.a) Discuss the application of DS spread spectrum for ranging.
b) Discuss the synchronization procedure in spread spectrum technique. [7+8]

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