SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E /B.Tech – CSE/IT
Title of the paper: Principles of Communication Engineering
Semester: III Max. Marks: 80
Sub.Code: 11307/12307(2002/2003) Time: 3 Hours
Date: 21-11-2007 Session: FN

PART – A (10 x 2 = 20)

Answer All the Questions

1. Define energy density spectrum.
2. Give few examples for internal and external noise.
3. What is VSB modulation? Why it is preferred in TV system?
4. Write a note on superheterodyne receiver.
5. Compare Pulse Code Modulation and Delta modulation.
6. What is sampling.
7. Write the advantages of Digital modulation.
8. What is the need for coding?
9. What is spread spectrum?
10. Explain – pseudo noise sequence.

PART – B (5 x 12 = 60)

Answer All the Questions

11. (a) Write in detail, properties of autocorrelation function.
    (b) Derive the Parseval's theorem for energy signals.

(or)

12. Write short note on
    (a) Classification of signals (4)
    (b) Noise models (4)
    (c) Cross correlation (4)

13. With neat diagram explain the working of Armstrong FM transmitter.

(or)

14. With neat diagram, explain Superheterodyne receiver in detail.

15. Write any one Pulse Width Modulation generation method in detail with neat sketch.

(or)

16. Describe the Time Division Multiplexing system in detail, with necessary diagram.

17. Draw the QPSK modulator and demodulator circuit and explain the operation with waveforms.

(or)

18. Explain Non-Coherent FSK detector with neat diagram. Derive the probability of error for the same.

19. Explain in detail cyclic code and convolutional code.

(or)

20. A source transmitting five messages with probabilities viz. 0.45, 0.25, 0.15, 0.10, 0.5 respectively.
    (a) Find Huffman (binary) code
    (b) Determine the average word length
    (c) Entropy
    (d) Code efficiency
    (e) redundancy