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(04-05)6C0046(06-07) Time: 3 Hours
Date: 05-05-2009 Session: AN

PART – A (10 x 2 = 20)

Answer All the Questions

1. What is the need for modulation?

2. Draw the spectrum of a amplitude modulated wave.

3. List out any 2 valid differences between AM and FM.

4. How many sidebands does FM have? Why?

5. Why is pulse shaping needed?

6. What is the difference between continuous wave modulation and pulse modulation?

7. What are the benefits of multiplexing?

8. What is meant by mark and space frequency?

9. Define the term entropy?

10. What is meant by a spread spectrum technique?

PART – B (5 x 12 = 60)

Answer All the Questions

11. (a) Derive a mathematical expression for an amplitude modulated wave? (7)

(b) Explain how a square law detector is used for AM detection. (5)

(or)

12. With a neat block diagram, explain the functioning of various modules of super heterodyne receiver. Comment on its significance.

13. Explain any two method of generating FM wave with a neat sketch.

(or)

14. With a neat diagram, explain the working of a foster seeley discriminator. What is the underlying principle of it?

15. State sampling theorem and comment on over sampling and under sampling with required diagrams.

(or)

16. With a neat block diagram, explain the various building blocks of a DM System.

17. Derive the expression for probability of error for BFSK (coherent) system. Also explain the transmitter and receiver of the same.

(or)

18. Write a detailed note on the transmitter and receiver of a coherent QPSK system and deduce the expression for probability of error.

19. Write a detailed note on

(a) Entropy of continuous channels.

(b) Block codes.

(or)

20. With a block diagram explain the types of spread spectrum system in detail.