Exam.Code:0935
Sub. Code: 6671

2074

B.E. (Electrical and Electronics Engineering)
Fifth Semester
PE-EE-504 (a): Communication Systems

Time allowed: 3 Hours **Max. Marks: 50**

NOTE: ***Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Part.***

x-x-x

Q.No.1 (i) What is the relationship between phase modulation and frequency modulation?

(ii) What do you mean by Gaussian and white noise? Draw its characteristics.

(iii) Define the granular noise and slope overload distortion.

(iv) What are the essential steps of a pulse code modulation technique?

(v) What is multiplexing? What are the different types of multilplexing? (5 x2=10)

Part– A

Q.No. 2 (a) What is DSB-SC system? With neat diagrams, explain its generation and detection in detail.

(b) What do you mean by signal? Explain the classification of signals. (5, 5)

Q.No.3 (a) Define angle modulation. Explain in detail with proper equations, the various types of angle modulation.

(b) Determine the carrier swing, the highest and lowest frequencies attained and the modulation index of the FM signal generated by frequency modulating a 101.6 MHz carrier with an 8 KHz sine wave causing a frequency deviation of 40 KHz. (5, 5)

Q. No.4 (a) Calculate figure of merit for conventional AM systems. What do you mean by threshold effect in AM systems?

(b) What are pre-emphasis and de-emphasis circuits? Where these circuits are used? (5, 5)

Part-B

Q.No.5 (a) Draw the block diagram of differential pulse code modulation. Explain the importance of prediction in differential pulse code modulation.

(b) Derive the expression for signal to quantization noise in PCM system. (6, 4)

Q.No.6 (a) Discuss the generation and demodulation of binary frequency shift keying systems.

(b) What is meant by inter symbol interference. (6, 4)

Q.No.7 (a) What are equalizers? Why we use equalization in digital communication?

(b) Explain the maximum likelihood sequence detection in digital communication. (5, 5)

x-x-x