EC-8395 Communication Engineering

Important 13mark questions

Unit I

1. Discuss the generation of BSS using filter and phasing method.
2. Derive expression for AM. Draw the spectrum and phasor diagram. Draw the waveform representing modulating signal, carrier signal and modulated signal for AM.
3. Discuss the method for the generation of FM using direct method.

Unit II

1. Describe data modulation in detail with neat block diagram. Also describe the quantization error in delta modulation.
2. Draw and explain the TDM with its applications.
3. Explain the steps involved in PCM encoder and decoder. Derive the expression for signal to noise ratio for PCM.

Unit III

1. Explain coherent detection of BFSK signal and derive the expression for probability of error.
2. Explain QAM modulation system with its constellation and schematic diagrams.
3. Derive the expression of probability of error in BPSK.

Unit IV

1. Explain Shannon's channel capacity theorem.
2. Find the entropy of a binary memory less source and find when it is maximum.
3. A transition channel has a bandwidth of 4 KHZ and signal to noise power ratio to 31
   (i) How much should the bandwidth be in the order to have the same channel capacity, if S/N ratio is reduced to 15?
   (ii) What will be the signal to noise power ratio required if the bandwidth is reduced to 3 KHZ?

Unit V

1. Explain the operation of FH-SS. Compare slow and fast FH-SS.
2. Discuss the FDMA and TDMA techniques used in wireless communication with their merits and demerits.
3. Explain the various multiple access techniques with neat diagram. List the advantages and disadvantages of each technique.