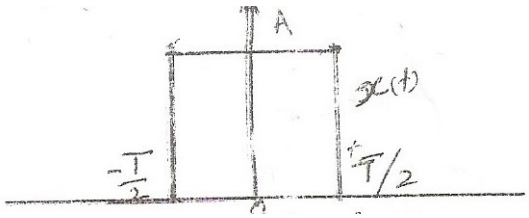
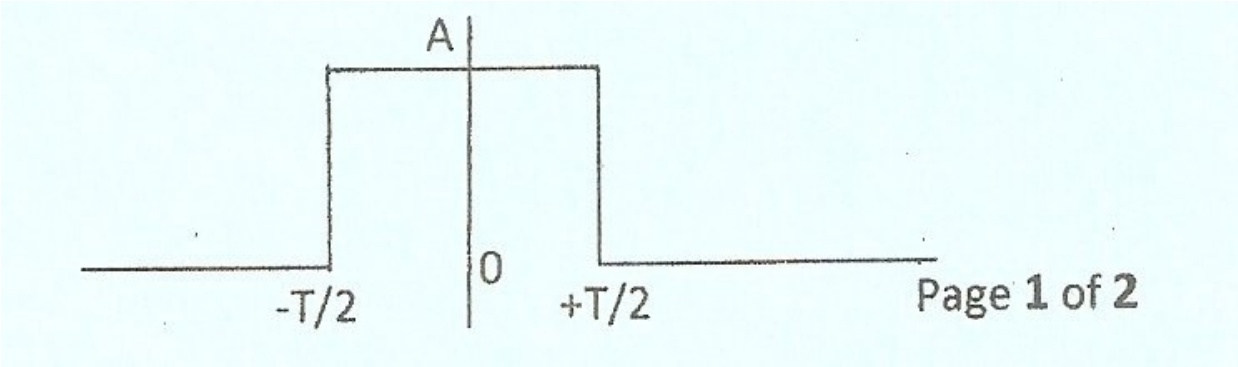
XT9252 Principle of Communication

1. Briefly describe about 1) Different classes of signals 2) Convolution integral theorem
2. Determine the Fouries transform of signal x(t) for the interval -T/2 to +T/2 as shown in the figure.Plot the phase response and magnitude response also.




3. State and Explain the properties of Fourier transforms
4. What is a linear system? Give conditions for linearity
5. What is power spectral density(PSD)? Explain
6. Define modulation index for an amplitude modulated signal. Explain over modulation, critical modulation and under modulation
7. What is Carson's rule for finding bandwidth of a frequency modulated signal
8. How vestigial Side Band Transmission metod reduces the bandwidth of transmission? Explain
9. Generate Frequency Modulated Signal by using a Phase Modulator sysem
10. Discuss about different types of sampling techniques
11. State and prove the sampling theoremwith necessary equation
12. Briefly describe about any one method for generating and demodulating Double side band Suppressed Carrier Signals(DSBSC) with necessary diagrams and equations
13. Briefly describe the Armstrong method for generating wide band FM signal with necessary block diagram
14. Give the advantage of Delta Modulation System
15. What are the different types of errors occuring in the case of Delta Modulation? Explain
16. What is an ASK modulation system? Explain with the help of equations and constellation diagrams
17. Draw the block diagram for QPSK modulator
18. Draw the power spectrum for the FSK system. Also give bandwidth equation for the same
19. Derive the equation(SNR) for the noise performance of a PCM system
20. Explain in detail about the BPSK coder, decoder, BW, power spectrum, signal representation and constellation diagram
21. Describe flat top sampling technique
22. Define entropy of an information
23. Compare and contrast Delta Modulation over Pulse code modulation
24. What is companding? Explain
25. Describe Amplitude Shift Keying(ASK). Give the power spectrum also
26. What signal space diagram? Give the constellationdiagram for QPSK and specify the symbol points
27. A DMS Transmitter has four symbols x1,x2,x3 and x4 with P(x1)=1/2, P(x2)=1/4 and P(X3)=P(x4)=1/8. Construct Huffman code for the start symbols and then calculate entropy (H(X)), average code length(L), code efficiency(n) also
28. Determine the Fourier Transform of the signal x(t) for the interval -T/2 to + T/2 as shown in the figure. Plot the phase spectrum and magnitude spectrum also





29. What is impulse response of LTI system? Explain
30.
    1. How the signals are classified? Explain about each type
    2. Discuss the properties of Fourier transform
31.
    1. Give the block diagram of a balanced modulator for implementing SSB-SC modulator and explain the working principle of the system
    2. What is Vestigial Side Band(VSB) modulation? Explain
32.
    1. Describe briefly about any one method for demodulating Frequency Modulated(FM) signal with the help of a diagram
    2. What is Armstrong method for FM generation? Explain with neat block diagram
33.
    1. With the help of a neat block diagram establish a linkwith the Pulse Code Manipulation(PCM) system and explain coder, decoder and repeater details
    2. What is FDM and TDM system? Explain with the help of necessary diagrams
34.
    1. Explain the working principle of a Delata Modulator with a block diagram and equations
    2. What is signal to noise ratio (SNR)? Derive the equation for the noise performance (SNR) of a PCM system
35. Briefly describe the BPSK modulation system. Discuss signal representation, constellation diagram, coder, decoder, Bandwidth required and power spectrum
36. Explain BPSK modulation system Discuss in brief signal representation, constellation diagram, coder, decoder, Band width and power spectrum