

Q.P. Code : 4922

(3 Hours)

[Total Marks : 80

- N.B. : (1) Question No. 1 is compulsory.
 (2) Attempt any three out of remaining questions.

1. Solve any four : 20
- What is convolution of signals ?
 - Explain noise factor ?
 - Define selectivity ?
 - What is Intersymbol Interference ?
 - What is Bit rate and Baud rate ?
2. (a) Explain digital communication system in details ? 6
 (b) What are types of Internal Noise ? 6
 (c) What is mean by signal to noise ratio ? Discuss the importance of SNR in radio receiver ? 8
3. (a) Obtain the fourier transform of a sinewave having frequency of f_0 and peak amplitude of unity. Also plot its frequency spectrum ? 10
 (b) A sinusoidal carrier has amplitude of 20V and frequency 30 KHz. It is amplitude modulated by sinusoidal voltage of amplitude 3V and frequency 2KHz. Modulated voltage is developed across a 50Ω resistance.
 (i) Write the equation for modulated wave
 (ii) Plot the modulated wave showing maxima and minima of waveform
 (iii) Determine the modulation Index
 (iv) Draw the spectrum of modulated wave ? 10
4. (a) Explain generation of FM by Armstrong method ? 10
 (b) What is pulse position modulation (PPM) ? Explain modulation and demodulation technique used for ppm ? 10
5. (a) A Band pass signal has a spectral range that extends from 30 KHz to 75 KHz. Find the sampling frequency ? 10
 (b) Explain in detail generation of any method used in AM ? 20
6. Write short notes on (any four) :
- Friiss Formula
 - Noise Bandwidth
 - Balanced Modulator
 - Pre-emphasis and De-emphasis
 - Ratio Detector