

10/06/2025 SE IT SEM-III C-SCHEME PC QP CODE: 10087347

(3 Hours)

[Total Marks: 80]

N.B.

1. Question No.1 is Compulsory
2. From Remaining 5 Questions You are Required to Solve any 3 Questions.
3. Assume the data if Necessary

1 Attempt Any Four: -

20

- a) Compare Analog and Digital Communication System.
- b) Define and draw ground wave and sky wave propagation.
- c) State and Explain Friss formula.
- d) Differentiate Between Amplitude Modulation and Frequency Modulation.
- e) Explain Pulse code Modulation generation.

2 Attempt the Following

20

- a) Explain in detail what are the different Types of Noise.
- b) Compare PAM, PWM and PPM generation and Degeneration.

3 Attempt the Following

20

- a) Draw and discuss Super heterodyne receiver with its characteristics- Sensitivity, Selectivity, Fidelity, double spotting, Image frequency and its rejection.
- b) Explain in detail Sampling theorem for low pass and band pass signals with proof.

4 Attempt the Following

20

- a) Draw and explain in detail FM demodulator: Foster Seeley discriminator.
- b) Explain in detail Orthogonal Frequency Division Multiplexing.

5 Attempt the Following

20

- a) Draw and Explain in detail Armstrong method block diagram and waveforms.
- b) Write short Note on
 1. Adaptive Delta modulation
 2. Tropospheric scatter propagation

6 Attempt the Following (any four)

20

- a) Draw and explain Electromagnetic Spectrum and application.
- b) Draw and Explain space wave propagation
- c) Discuss time and frequency shifting, unit step, delta and gate function of Fourier Transform.
- d) Compare Digital Band Pass Modulation Techniques PSK and QPSK.
- e) Explain Amplitude Modulation Technique generation of DSB using Balanced modulator.