

Time: 3 Hours

Marks: 80

- N.B: 1. Question No 1 is compulsory  
2. Answer any three from the remaining.

1. Attempt all questions. (20M)
  - (a) Compare Twisted Pair, Co axial and Fiber optic communication channel.
  - (b) State and prove convolution property of the Fourier Transform.
  - (c) Define Image Signal and explain Image signal rejection ration.
  - (d) What is aliasing? How to eliminate it?
2. (a) Derive Friss formula. (5M)
  - (b) Derive the Fourier transform of Unit Step and Delta Function? (5 M)
  - (c) Derive the expression for FM. (10M)
3. (a) Explain how to generate DSBSC AM with neat diagram. (10M)
  - (b) Explain the working of Foster seeley discriminator with neat circuit diagram and phasor diagram. (10M)
4. (a) Define Sampling and explain how to generate and demodulate PAM with neat diagram? (10M)
  - (b) Explain Delta modulation with neat diagram. (10M)
5. (a) Explain BASK Generation and detection with neat diagram. (10 M)
  - (b) Explain and draw any five types of Line codes. (10 M)
6. Write a short note on any four from the following (20M)
  - a) Wireless Communication Channel
  - b) State and prove time shifting property of Fourier Transform.
  - c) Pulse width modulation generation.
  - d) QPSK
  - e) Quantization process.

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