

Duration: 3hrs

[Max Marks:80]

- N.B. :** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any FOUR [20]
- a Differentiate between analog and digital communication system
 - b Define: a) Noise Figure b) Signal to Noise Ratio c) Image Frequency
 - c Why is VSB amplitude modulation used in television broadcasting?
 - d Modulation improves the quality of communication, justify this statement.
 - e How important is multiplexing in communication system?
- 2 a Explain with block diagram and waveforms of SSB AM generation. [10]
b Derive the wave equation for AM wave. Draw the time domain and frequency domain representation of AM wave. [10]
- 3 a Explain the working of Foster Seeley discriminator as FM demodulator. What are its advantages over balanced slope detector? [10]
b State and prove sampling theorem. State the consequences of not satisfying Nyquist criteria in sampling [10]
- 4 a What is the need of multiplexing? Explain the time division multiplexing in detail along with its applications. [10]
b Explain Delta Modulation in detail and what are its drawbacks? [10]
- 5 a State and explain Friss formula and define Equivalent Noise Temperature. [10]
b Explain the working of diode detector. How is practical diode detector different from diode detector? [10]
- 6 a Draw block diagram of Super heterodyne receiver and explain its characteristics. [10]
b What is narrowband and wideband FM? [5]
c Draw and explain the difference between PAM, PPM and PWM. [5]
