

- 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 Explain the block diagram of Communication system.
  - b Define: a) Image frequency b) Modulation c) Selectivity
  - c Why is VSB amplitude modulation used in television broadcasting?
  - d What is Pre-emphasis and De-emphasis.
  - e What is multiplexing? How it is useful.?
- 2 a Explain block diagram and waveform of Armstrong Method. [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. [10]
- b What is sampling? State and prove sampling theorem for low pass signals. [10]
- 4 a Explain FDM transmitter and receiver block diagram. [10]
- b What are the errors occur in delta modulation and how those are overcome using ADM ? [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 aliasing error and aperture effect? [5]
- c Compare PAM, PWM and PPM [5]

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