

R09

Code: 9A04501

III B. Tech I Semester (R09) Supplementary Examinations, May 2012

ANALOG COMMUNICATIONS

(Electronics & Communication Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss the fundamental limitations of communication system.
(b) Explain how modulation will reduce noise and interference.
- 2 (a) Explain the relation between carrier frequency and bandwidth of simplest band pass system.
(b) Derive the expression for transmitted power of AM signal.
- 3 (a) Describe the generation AMSSB using phase shift method.
(b) A SSB transmitter radiates 5 kW when the modulation percentage is 50%. How much carrier power is required if we want to transmit the same message by an AM transmitter?
- 4 (a) Give the expression for FM signal and expand the expression in terms of Bessel functions.
(b) Find the carrier and modulating frequencies, the modulation index, and the maximum frequency deviation of the FM wave represented by the voltage equation $v = 18 \sin (6 \times 10^8 t + 5 \cos 1500 t)$. What power will this FM wave dissipate in a 25 ohm resistor?
- 5 (a) Discuss the concept of interfering sinusoids.
(b) What is the need for frequency multiplier in FM modulator circuit?
- 6 (a) Discuss about adjacent channel selectivity of SRF receiver.
(b) Discuss the draw backs of tuned radio frequency receiver.
- 7 With the help of block diagram, discuss about analog base band transmission system with noise.
- 8 (a) What is the need for pulse modulation systems?
(b) What sampling rate would be appropriate for a television video channel with a maximum bandwidth of 4 MHz?
