

R09**Code: 9A04501**

B.Tech III Year I Semester (R09) Supplementary Examinations June 2016

ANALOG COMMUNICATIONS

(Electronics and Communication Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 (a) What are the benefits of modulation? Explain in detail.
(b) Explain different coding methods used in communication.
- 2 (a) What is a band pass signal and how it is relevant to communication system?
(b) The antenna current of an AM broad cast transmitter, modulated to a depth of 40 percent by an audio sine wave is 11 A. It increases to 12 A as result of simultaneous modulation by another audio sine wave. What is the modulation index due to this second sine wave?
- 3 Discuss the effects of frequency and phase errors in synchronous detection of AMDSB – SC.
- 4 (a) Sketch and explain the FM and PM waveforms. Assume Carrier and modulating signal are sinusoidal.
(b) Discuss the transfer characteristics and circuit of hard limiter used in FM circuits.
- 5 Discuss the following terms pertaining to FM:
(a) De-emphasis.
(b) Slope detector.
(c) Amplitude limiter.
- 6 (a) Discuss about Self Excited Mixer.
(b) In a broadcast Super Heterodyne Receiver having no RF amplifier, the loaded Q of the antenna coupling circuit is 150. If the intermediate frequency is 455 kHz, calculate: (i) The image frequency and its rejection ratio at 0.1 MHz. (ii) The image frequency and its rejection ratio at 25 MHz.
- 7 Write short notes on:
(a) Threshold effect in FM.
(b) Noise equivalent bandwidth.
(c) Bandpass noise representation.
- 8 Draw the block diagram and TDM – PAM signal and explain about it.
