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
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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.

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