

Total No. of Questions : 6

Total No. of Printed Pages : 3

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**B.E. IV Sem. (CGPA) Electronics and
Communication Engg. Exam.-2012-13**

ANALOG COMMUNICATION

Paper : EL-403

Time Allowed : Three Hours

Maximum Marks : 60

Note : Attempt all questions. Each question carry equal marks.

Q.1. Very short answer type question. 1x10=10

- i) FM and PM are example of _____ type of modulation.
- ii) Frequency of audio signal ranges from _____ to 645 kHz
- iii) Energy signal has _____ energy and _____ power.
- iv) Noise frequency bend is defined as _____.
- v) Cross-correlation is used for _____.
- vi) Ring modulator consist of _____ no. of diodes.
- vii) In an AM system the expression of total power is given as _____.
- viii) N voltage is express as _____.

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(2)

- (x) An FM radio receiver is tuned to 98.7 MHz broadcast station. It will receive an image frequency of _____.
- x) Figure of Merite is defined as _____.

Unit - I

- Q.2 a) Define convolution with example. 10
- b) Find fourier transform of the following
 - a) Gaussian pulse
 - b) Sinusoid Coswot

Or

- a) State and prove parseval's theorem.
- b) Find fourier transform of the following:
 - a) Sig num function
 - b) Fouriter transform of any periodic function.

Unit - II

- Q.3. a) Derive expression of AM wave and discuss each term in brief. 10
- b) Determine the power content of the carrier and each of the sideband for an AM signal having a percent Modulation of 80% and a total power of 3000W.

Or

- a) Discuss synchronous modulation and demodulation techniqe for AM system.

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- b) A SSB transmission contain 600W. This transmission is to be replaced by a standard AM signal with the same power content. Determine the power content of the carrier and each of the side bands when the % modulation is 85%.

Unit - III

- Q.4. a) Explain any one method of PM wave generation and detection. 10
- b) Draw the phaser diagram of any FM system.

Or

- a) Compare AM and FM system.
- b) Draw the block diagram of Armstrong Method of FM generation and explain its work in brief, also write advantages of this method.

Unit - IV

- Q.5. a) A Mixer stage has a noise figure of 30dB. This mixer stage preceded by an amplifier which has a noise figure of 10dB and an available power gain of 15dB. Find the overall noise figure referred to the input. 10
- b) Draw the block diagram of a standard broadcast AM transmitter and explain its working in detail.

Or

- a) Name the different noises which may be created within a receiver or amplifier. Discuss the effect of these noises on the performance of a receiver.

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- b) What is AGC? List the salient features of broadcast radio receiver.

Unit - V

- Q.6. i) Calculate the figure of Merit of SSB-SC and DSB-SC system. 10

- ii) Define noise temperature.

Or

- i) What is noise threshold effect? Discuss threshold improvement in FM system.
- ii) What is bandpass noise model?



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