



K15F 0173

Reg. No. :

Name :



V Semester B.Tech. Degree (Reg./Sup./Imp. – Including Part Time)
Examination, November 2015
(2006 and Earlier Admn.)
PTEC2K/EC2K 503 – ANALOG COMMUNICATIONS

Time : 3 Hours

Max. Marks : 100

PART – A

Answer all questions :

1. a) Write the properties of probability density function.
- b) Write the conditions for a signal to be WSS signal.
- c) What is SNR ? What its significance ?
- d) Briefly explain the narrow band representation of noise.
- e) What is VSB transmission ? Explain its advantage.
- f) Write the advantages of superheterodyne receiver.
- g) What is a NBFM signal ? Explain.
- h) Explain about the threshold effect in FM. (8×5=40)

PART – B

2. a) Derive the statistical parameters of $Y(t)$. When a random process $X(t)$ is applied at the input a LTI system, where $Y(t)$ is the O/P of the system. 10
- b) Briefly explain about a white Gaussian process. 5

OR

3. Explain about :
 - i) Stationarity.
 - ii) Ergodicity. 15
 - iii) Correlation.

P.T.O.



4. a) Derive the relation between noise figure and effective noise temperature. 8
b) Write about shot noise. 7
- OR
5. a) What is noise equivalent band width. 7
b) What is thermal noise ? Explain. 8
6. a) Draw the block diagram of a superheterodyne receiver and explain the different blocks. 10
b) Derive the modulation index of an AM signal. 5
- OR
7. a) Draw a circuit for generating DSB-SC signal and also explain its working. 8
b) Derive the spectrum of an AM signal. Draw the spectrum and find out the band width. 7
8. a) What is the band width needed for the transmission of NBFM ? Prove it. 9
b) What is the need of amplitude limiter in FM receiver ? Explain. 6
- OR
9. a) With a neat block diagram explain any one method for demodulatory FM signal. 8
b) What is angle modulation ? Derive the formula for FM signal. 7
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