



Code No. : 5143/S

**FACULTY OF ENGINEERING**  
**B.E. 3/4 (ECE) I Semester (Suppl.) Examination, June 2012**  
**ANALOG COMMUNICATIONS**

Time : 3 Hours]

[Max. Marks : 75

**Note : Answer all questions from Part – A, Answer any five questions from Part – B.**

**PART – A**

**(25 Marks)**

1. Define modulation and give the types of modulation. 3
2. With a neat diagram, explain the frequency components of AM wave. 2
3. Write advantages of FM over AM. 3
4. Compare the phasor diagrams of AM and NBFM. 2
5. What is image frequency ? Write about image frequency rejection ratio. 3
6. Write factors that influence the choice of IF. 2
7. Define noise figure. Obtain the relation between noise temperature and noise figure. 3
8. Write short notes on thermal noise. 2
9. State sampling theorem for low pass sequels. 3
10. What is aliasing ? How do you eliminate the same ? 2

**PART – B**

**(50 Marks)**

11. a) Explain how balanced modulator generates a DSB-SC signal. 5  
b) Give the time domain and frequency domain representation of SSB wave. 5
12. a) Explain the generation of FM wave using direct FM method. 5  
b) Explain the principle and operation of PLL. 5

(This paper contains 2 pages)



13. a) Explain reactance type FM transmitter with neat sketch. 4  
b) Explain the operation of TRF receiver and discuss its drawbacks in detail. 6
14. a) Give the classification of noise. Explain each in brief. 3  
b) Derive the SNR of an FM demodulator. Indicate the threshold phenomena. Explain how pre-emphasis and de-emphasis networks improve the SNR. 7
15. a) State the frequency components present in a PPM signal spectrum. 3  
b) Derive an expression for figure of merit of a PPM system. 7
16. a) Explain the operation of envelope detector along with the choice of time constant. 5  
b) Explain communication receiver with neat block diagram. 5
17. a) Write short notes on AGC and its types. 4  
b) Write short notes on VSB modulation. 3  
c) Write about instantaneous sampling technique. 3