

Code No: 55024

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year I Semester Examinations, February/March - 2016****ANALOG COMMUNICATIONS****(Electronics and Communication Engineering)****Time: 3 hours****Max. Marks: 75****Answer any five questions  
All questions carry equal marks**

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- 1.a) Explain the generation of AM signals using Square Law Modulator.  
b) What is modulation? What is the need for modulation explain in detail. [10+5]
- 2.a) Determine the power content of each of the sideband and of the carrier of an AM signal that has a percent modulation of 85% and contains 1200 W at total power.  
b) With a neat block diagram explain about AM transmitter. [7+8]
3. Draw the block diagram for the generation and demodulation of a VSB signal and explain the principle of operation. [15]
- 4.a) Derive the expression for the frequency modulated signal. Explain what is meant by narrowband FM and wideband FM using the expression.  
b) Compare AM and FM modulation Techniques. [8+7]
- 5.a) Explain the principle of indirect method of generating a wide-band FM signal with a neat block diagram.  
b) Explain the working of balanced slope detector. [8+7]
- 6.a) Draw the block diagram of FM demodulator and explain the effect of noise in detail.  
b) Compare the noise performance of AM and FM systems. [8+7]
- 7.a) What should be the criteria for the choice of intermediate frequency, explain in detail  
b) State the advantages of delayed AGC? Explain about delayed AGC with circuit diagram. [8+7]
- 8.a) Explain demodulation of FM signal with the help of PLL.  
b) With a neat block diagram explain PWM generation and demodulation. [8+7]

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