

**Reg. No:**

**SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR**  
(AUTONOMOUS)

**B.Tech III Year I Semester Supplementary Examinations July-2022**

**ANALOG COMMUNICATIONS**

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

**UNIT-I**

- 1 a Draw the block diagram of communication system. L2 6M  
b Explain the function of each block of communication system. L2 6M

**OR**

- 2 a Derive an expression for SSB-SC wave using the concept of pre-envelope. L4 6M  
b The total power content of AM signal is 1kW. Determine the power being transmitted at the carrier frequency and each of the sidebands when the %modulation is 100. L3 6M

**UNIT-II**

- 3 a Obtain the necessary expression for single tone NBFM. L5 6M  
b Explain the generation of Narrowband Frequency Modulation and Narrowband Phase Modulation with suitable block diagrams. L2 6M

**OR**

- 4 a Write short note on Pre-Emphasis and De-Emphasis circuits. L1 6M  
b Explain non-linear effects in FM system. L2 6M

**UNIT-III**

- 5 a If each stage has a gain of 10dB and noise figure of 10dB. Calculate the overall noise figure of a two-stage cascaded amplifier. L4 6M  
b Give the Quadrature representation of Narrow-band noise. L1 6M

**OR**

- 6 a Explain the noise performance of DSB-SC scheme with the help of neat block diagram. L2 6M  
b The noise figure of a receiver is 20dB and it is fed by a low noise amplifier which has gain of 40dB and noise temperature of 800K. Calculate the overall noise temperature of the receiving system and the noise temperature of the receiver. L4 6M

**UNIT-IV**

- 7 a Explain the demodulation of PAM signals. L2 6M  
b Write the advantages and disadvantages for PAM. L1 6M

**OR**

- 8 a What is the need for pulse modulation systems? L1 6M  
b With block diagram explain the generation of PWM signals. L2 6M

**UNIT-V**

- 9 a Explain about Time Division Multiplexing. L2 6M  
b Compare TDM and FDM techniques. L4 6M

**OR**

- 10 a Write short note on measure of information and entropy. L1 6M  
b Derive the expression for condition of maximum entropy. L2 6M

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