R16

Reg. No: ☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech III Year I Semester Regular Examinations November 2018
ANALOG COMMUNICATIONS
(ECE)

Time: 3 hours   Max. Marks: 60

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

UNIT-I

1 a Prove that DSB-SC is linear Modulation Technique.   6M
   b Carrier signal C(t) = 10 Cos($2\pi x10^6$t) and Modulating signal m(t)= 2 Cos($4\pi x10^3$t) + Cos($6\pi x10^3$t) are used to generate AM signal. Draw the spectrum of AM signal and find band width?   6M

OR

2 a Discuss the generation of DSB-SC signal using ring modulator.   7M
   b Discuss Phase and frequency errors in the detection of DSB-SC using synchronous detection.   5M

UNIT-II

3 a Compare NBFM &WBFM.   4M
   b Derive the expression and Discuss the generation of NBFM signal.   8M

OR

4 a Prove that power of FM signal is same as Carrier signal power.   4M
   b Pre-emphasis and De-emphasis are used to improve the SNR in FM system. Explain   8M

UNIT-III

5 Obtain the expression for output SNR of FM system.   12M

OR

6 Obtain the expression for output SNR of SSB-SC system.   12M

UNIT-IV

7 a Explain about generation of PWM Signal?   6M
   b Explain about demodulation of PPM signal.   6M

OR

8 a What are the differences between PAM, PWM and PPM?   6M
   b Explain about Aperture effect in PAM system.   6M

UNIT-V

9 a Explain about sensitivity, selectivity and fidelity.   6M
   b The IF Frequency of AM MW Super heterodyne receiver is fixed at 455KHz. Why?   6M

OR

10 a Explain about H(X),H(Y),H(X|Y),H(Y|X)and H(XY) ?   6M
    b Explain (a). Entropy (b) Information rate (c) Channel capacity   6M

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