V-091

Roll No._____ Total Printed Pages : 3

05BEC104

B.TECH (ELEC. & COMM. ENGG.)

V-SEM Examination, Dec.-2016

SUB: ANALOG COMMUNICATION

Time : 3 Hours] [Total Marks 60

Use of following supporting material is permitted during examination.

1._____Nil _____ . _____ Nil_____

Note: 1. Attempt any five questions

2. Each question carry equal marks.

1. What is noise? Describe noise figure. An amplifier operating on a frequency range form 18 to 20MHz has a 10K Ω input resistance. Find the rms noise voltage at the inpiut to this amplifier if the ambient temperature is 17°c.

2. Derive an expression to calculate equivalent noise temperature in cascaded circuits.

3. Draw the circuit diagram and discuss generation of AM-DSBSC wave.

4. Write the expression for single tone amplitude modulation. A 400 watts carrier is modulated to a depth of 75 percent. Find the total power in the amplitude modulated wave. Assume the modulating signal to be a sinusoidal one.

5. Describe the relationship between phase modulation and frequency modulation. A single tone FM is represented by the voltage equation as:

   $V(t)=12\cos(6\times10^{4}t + 5\sin 1250t)$

   Determine the following

   i) Carrier frequency

   ii) Modulating frequency

   iii) The modulation index

   iv) Maximum deviation

   v) What power will this FM wave dissipate in 10Ω resistors?

6. Write down the performance comparison of FM demodulators. Also define Pre-Emphasis and De-Emphasis.

7. Explain how noise can be calculated in a communication system. Derive the expression for figure of merit for the DSB-SC receiver.

8. Discuss PAM-TDM using suitable block diagram.

9. Compare PAM-PWM and PPM.

10. Write short notes on any three-

    a) Noise temperature

    b) SNR

    c) Nyquist rate and nyquist interval

    d) Aliasing.