Reg. No. :

Question Paper Code: 53045

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Third Semester

Electronics and Communication Engineering

15UEC305 - ANALOG COMMUNICATION

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Time division multiplexing is used in

   (a) analog circuit   (b) digital circuit
   (c) modulation circuit   (d) multiplier circuit

2. In wideband FM system, the output signal to noise ratio increases

   (a) Linearly as the bandwidth   (b) as the square root
   (c) as the square of the bandwidth   (d) as the cube of the bandwidth

3. Gaussian process is a

   (a) Wide sense stationary process   (b) Strict sense stationary process
   (c) both a and b   (d) none of these

4. The use of pre-emphasis and de-emphasis in an FM system improves the noise performance over

   (a) the entire frequency range   (b) medium range of frequency only
   (c) lower frequency modulation   (d) higher frequency range

5. In pulse amplitude modulation

   (a) Amplitude of the pulse train is varied   (b) Width of the pulse train is varied
   (c) Frequency of the pulse train is varied   (d) None of these

PART - B (5 x 3 = 15 Marks)

6. Give the methods of generating SSB-SC-AM. And mention some applications of SSBSC.

7. Compare Wideband FM and Narrowband FM.

8. Give the classification of noise and explain any one type.

9. What is the purpose of pre-emphasis and de-emphasis in FM?

10. What is Nyquist rate?

PART - C (5 x 16 = 80 Marks)

11. (a) Draw an envelope detector circuit used for demodulation of AM and explain its operation. (16)

Or

(b) Explain Balanced modulator to generate DSB-SC signal. (16)

12. (a) Draw the circuit diagram of Foster-Seelay discriminator and explain its working. (16)

Or

(b) Define frequency modulation. Draw the FM waveform. Discuss about the generation of NBFM and WBFM. (16)

13. (a) (i) State any five properties of autocorrelation function. (8)

(ii) List the different types of random process and give the definition. (8)

Or

(b) Explain Narrowband noise. Show that a narrow band noise n(t) can be represented in terms of its inphase and quadrature phase components. (16)

14. (a) Explain the function of each block in the superheterodyne receiver and enlist its characteristics. (16)

Or

(b) (i) Explain pre-emphasis and De-emphasis in detail. (10)

(ii) Compare the performances of AM and FM systems. (6)

15. (a) Explain in detail about the PAM, PPM and PWM and its waveform. And compare. (16)

Or

(b) What is meant by quantization and develop an expression for quantization noise in PCM and DM systems. (16)

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