Reg. No. :

Question Paper Code: 41445

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

Fourth Semester

Electronics and Communication Engineering

14UEC405 - ANALOG COMMUNICATION

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. If the modulation index of an AM wave is changed from 0 to 1, the transmitted power

    (a) increases by 50%   (b) increases by 75%
    (c) increases by 100%   (d) remains unaffected

2. In a DSB-SC system with 100% modulation, the power saving is

    (a) 50%   (b) 66%   (c) 75%   (d) 100%

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

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

4. The modulator stage in a radio transmitter is normally

    (a) Class A   (b) Class B   (c) Class AB   (d) Class C

5. Random process is a function of

    (a) Random event and time   (b) Random event and frequency
    (c) Random event and real number   (d) None of these

6. Gaussian process is a

    (a) Wide sense stationary process   (b) Strict sense stationary process
    (c) Both of the mentioned   (d) None of these

7. Threshold for detection of FM signals using discriminator is about

   (a) 100 dB   (b) 30 dB   (c) 200 dB   (d) 1 dB

8. Equalization network is used to

   (a) eliminate non-linear distortion   (b) eliminate quantization

   (c) compensate transmission loss   (d) none of these

9. Indicate which of the following system is digital

   (a) PPM   (b) PWM   (c) PDM   (d) PCM

10. Types of analog pulse modulation systems are

   (a) Pulse amplitude modulation   (b) Pulse time modulation

   (c) Frequency modulation   (d) Both a and b

PART - B (5 x 2 = 10 Marks)

11. Compare AM with DSB-SC and SSB-SC.

12. State the Carson's rule.

13. Define Gaussian processes.

14. What is pre-emphasis and de-emphasis?

15. Compare PAM, PPM, PWM.

PART - C (5 x 16 = 80 Marks)

16. (a) Draw the block diagram for the generation and demodulation of a VSB signal and explain the principle of operation. (16)

Or

    (b) Discus the coherent detection of DSB-SC modulated wave with a block diagram of detector and Explain. (16)

17. (a) Draw the circuit diagram of Foster-Seeley discriminator and explain its working.

                                                               (16)

Or

    (b) Derive the expression for the frequency modulated signal. Explain what is meant by narrowband FM and wideband FM using the expression. (16)

18. (a) Define and explain about auto correlation and cross correlation and its properties.

                                                                 (16)

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Or

   (b) State and Prove the properties of Gaussian Process.   (16)

19. (a) Explain about shot noise, thermal noise and white noise process with suitable diagram.   (16)

Or

   (b) Explain the working of super heterodyne receiver with its parameters.   (16)

20. (a) Explain the Generation and Demodulation procedure for PAM signal.   (16)

Or

   (b) Describe how different signals can be multiplexed using TDM system.   (16)

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