Reg. No. :

Question Paper Code: 33806

B.E. / B.Tech. DEGREE EXAMINATION, DEC 2020

Third Semester

Information Technology

01UIT306 - ANALOG AND DIGITAL COMMUNICATION

(Regulation 2013)

Duration: 1.15 hrs   Maximum: 30 Marks

PART A - (6 x 1 = 6 Marks)

(Answer any six of the following questions)

1. A 100MHz carrier is frequency modulated by 10 KHz wave. For a frequency deviation of 50 KHz, calculate the modulation index of the FM signal

    (a) 100   (b) 50   (c) 70   (d) 90

2. FM signal is better than AM signal because

    (a) Less immune to noise
    (b) Less adjacent channel interference
    (c) Amplitude limiters are used to avoid amplitude variations
    (d) All the above

3. Which type of signal is represented by discrete values?

    (a) Analog   (b) Digital   (c) Linear   (d)Nonlinear

4. The technique that may be used to increase average information per bit is

    (a) Shannon-Fano algorithm   (b) ASK
    (c) FSK   (d) Digital modulation techniques

5. Equalization in digital communication

      (a) Reduces inter symbol interference

      (b) Removes distortion caused due to channel

      (c) Is done using linear filters

      (d) All the above

6. Analog to digital conversion includes

      (a) Sampling   (b) Quantization

      (c) Both (a) and (b)   (d) None of these

7. The minimum bandwidth required to transmit the PCM signal is

      (a) 64KHZ   (b) 8 KHZ   (c) 16 KHZ   (d) 32 KHZ

8. Eye pattern is

      (a) Is used to study ISI   (b) May be seen on CRO

         (c) Resembles the shape of human eye   (d) All the above

9. In DPSK technique, the technique used to encode bits is

      (a) AMI   (b) Differential code

      (c) Uni-polar RZ format   (d) Manchester format

10. The bandwidth of spread signal is _____

      (a) $1/T_C$ (b) $1/T_S$ (c) $1/T_f$ (d) $1/T_P$

PART – B (3 x 8= 24 Marks)

(Answer any three of the following questions)

11.   What is the principle of Frequency modulation? Derive expression for the FM wave and draw its spectrum.   (8)

12.   Explain the principle of FSK receiver.   (8)

13.   Explain the functional description of digital communication system in detail.   (8)

14.   What is pulse modulation? Discuss about various pulse modulation schemes.   (8)

15.   Explain the two types of FH spread spectrum systems with suitable diagrams.   (8)

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