Reg. No. :

Question Paper Code: 54045

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

Fourth Semester

Electronics and Communication Engineering

15UEC405 - DIGITAL COMMUNICATION

(Regulation 2015)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (5 x 1 = 5 Marks)

1. Examples of digital communication are

   (a) ISDN   (b) Modems   (c) Classical telephony   (d) All the above

2. What is a sampling unit?

   (a) The basic unit containing the elements of the population to be sampled
   (b) The sampling frame
   (c) All the individual elements of the final sample, drawn together
   (d) The method used to collect the sample

3. Noise figure measures the

   (a) Power degradation   (b) Noise degradation
   (c) SNR degradation   (d) None of these

4. Which modulation scheme is also called as on-off keying method?

   (a) ASK   (b) FSK   (c) PSK   (d) GMSK

5. Pseudorandom signal _____ predicted

   (a) Can be   (b) Cannot be   (c) May be   (d) None of these

PART - B (5 x 3 = 15 Marks)

6. Which parameter is called figure of merit of a digital communication system and why?

7. State sampling theorem.

8. What is Inter Symbol Interference (ISI)?

9. Mention the need of optimum transmitting and receiving filter in baseband data transmission.

10. What is meant by frequency hop and types of hopping systems?

PART - C (5 x 16 = 80 Marks)

11. (a) Draw the block diagram of digital communication systems and explain each block detail. (16)

Or

(b) Classify channels. Explain the mathematical model of any two communication channels. (16)

12. (a) Explain in detail the various source coding techniques for speech signal and compare their performance. (16)

Or

(b) Explain in detail about viterbi decoding. (16)

13. (a) Explain in detail about different types of quantization method. (16)

Or

(b) Explain the operation of Detection-Maximum Likelihood Detector using signal constellation diagram. (16)

14. (a) Explain operation of various coherent digital detection systems. (16)

Or

(b) Explain the operation of QPSK with neat diagram. (16)

15. (a) Explain in detail about direct – sequence spread spectrum with coherent binary phase- shift keying. (16)

Or

(b) Explain the frequency hopping spread spectrum. (16)

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