

Roll No.

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B.E / B.Tech (Full Time) END SEMESTER EXAMINATIONS Apr / May – 2019

ELECTRICAL AND ELECTRONICS ENGINEERING

IV Semester

EC8404 / EE8401 – COMMUNICATION ENGINEERING

(Regulation 2012)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. What is the modulation scheme used for commercial television broadcast? Why?
2. List the advantages of SSB?
3. State the sampling theorem.
4. What is it meant by quantization?
5. What is entropy? And give the expression.
6. Draw the bipolar R_z and NR_z line coding for the following bit stream 101011010.
7. List out the advantages of TDMA and FDMA?
8. Note down the applications of multiple access techniques.
9. What is it meant by frequency reuse?
10. Note down the some of sources and detectors.

Part – B (5 x 16 = 80 marks)
(Question No.11 is Compulsory)



11. What is NBFM and WBFM? Explain in detail about the generator of FM and PM using Armstrong method. (16)
12. a) (i) Describe the noise involved in PCM and how to mitigate it. (8)
(ii) Illustrate the DPCM with neat sketch. (8)

(OR)

- b) Explain in detail about QPSK with necessary diagram. (16)
13. a) What is BSC and BEC channel? Calculate the entropy of binary symmetric channel with diagram. (16)

(OR)

- b) (i) Write down the procedure involved in Shannon – Fano coding and Huffman coding. (8)
(ii) A DMS has the following probabilities calculate entropy, average code word length, efficiency using Huffman coding. (8)
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|----------------|----------|-------|-------|-------|-------|-------|-------|
| Symbols: | x_i | x_1 | x_2 | x_3 | x_4 | x_5 | x_6 |
| Probabilities: | $p(x_i)$ | 0.30 | 0.25 | 0.20 | 0.12 | 0.08 | 0.05 |

14. a) Explain in detail about TDMA multiple access techniques with required diagram. (16)

(OR)

b) Explain in detail about CDMA multiple access techniques with required diagram. (16)

15. a) Explain the cellular concept, channel assignment strategies and handoff strategies. (16)

(OR)

b) Write short notes about the following:

(i) Interference and system capacity (8)

(ii) Coverage and capacity expansion techniques. (8)

