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Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 81300

M.E./M.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

First Semester

Computer and Communication

CP 9211/CP 911/CU 912/10244 CM 103 – MODERN DIGITAL COMMUNICATION TECHNIQUES

(Common to M.E. Communication System, M.E. Digital Electronics and Communication Engineering, M.Tech. Information and Communication Technology)

(Regulation 2009/2010)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. What is constant envelope modulation?

2. Compare BFSK and MFSK on two facts.

3. What are the uses of scrambling?

4. What is OFDM?

5. Comment on the threshold fixing in a matched filter.

6. State two features of Golay codes.

7. Design a convolutional coder of constraint length 6 and rate efficiency $\frac{1}{2}$.

8. Draw the state dragram of the coder in question 7.

9. What is ISI?

10. What is the need for equaliser?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss on minimum shift keying and Gaussian minimum shift keying.

Or

(b) Discuss :

(i) M–ary Quadrature amplitude modulation

(ii) Non-coherent detection of BFSK.

12. (a) Explain a PAP reduction techniques used in OFDM system.

Or

(b) (i) Explain the generation the sub-carriers using IFFT.

(ii) Discuss the advantages of OFDM system.

13. (a) Derive the expression for bit error probability of a matched fitter.

Or

(b) (i) Explain a method of spreading spectrum communication.

(ii) Discuss the error detecting and correcting capabilities of BCH codes and Reed. Solomon codes.

14. (a) Explain viterbi algorithm with a suitable input.

Or

(b) Write in detail about Turbo coding.

15. (a) Explain and analyse a method to control ISI.

Or

(b) Explain the working principles of any two types of equalisers.

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