

Reg. No. :

Question Paper Code : 93393

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Sixth Semester

Electronics and Communication Engineering

EC 1351/EC 1352 — DIGITAL COMMUNICATION

(Regulation 2004/2007)

(Common to B.E. (Part-Time) Fifth Semester, Regulation 2005)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State Nyquist sampling theorem.
2. What is a digital multiplexer?
3. What is correlative level coding?
4. List any two advantages of adaptive equalization.
5. Draw the power spectra of BPSK signal.
6. What is the need for carrier synchronization?
7. What is a cyclic code?
8. Give any two disadvantages of Turbo codes.
9. List the properties of pseudo random noise sequence.
10. What is a gold code?

PART B — (5 × 16 = 80 marks)

11. (a) • With neat diagram explain differential pulse code modulation CODEC.

Or

- (b) Distinguish Delta modulation and adaptive delta modulation.

12. • (a) What is a matched filter? Explain its operation and derive the error rate of matched filter due to noise.

Or

- (b) Explain with relevant diagrams baseband and M-ary PAM transmission.

13. • (a) Derive the Bit error probability of QPSK system.

Or

- (b) Explain the generation and detection of MSL scheme.

14. (a) Sketch the state diagram, the tree diagram and the trellis diagram for the convolutional encoder of Fig. 14 (a).

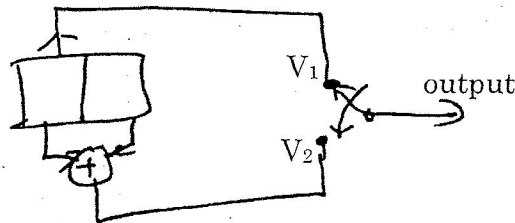


Fig. 14 (a)

Or

- (b) Let C be a $(7, 4)$ cyclic code with $g(x) = 1 + x + x^3$. Find a generator matrix G for C and find the code word for $d = (1010)$

15. • (a) With neat block diagram explain direct sequence spread spectrum system with coherent BPSK.

Or

- (b) Derive the probability of error of frequency-hop spread spectrum system.