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

Question Paper Code : 71452

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

Fifth Semester

Electronics and Communication Engineering

EC 2301/EC 51 – DIGITAL COMMUNICATION

(Regulation 2008)

(Common to PTEC 2301 – Digital Communication for B.E. (Part – Time) Fourth Semester – Electronics and Communication Engineering – Regulation 2009)

Time : Three hours | Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State four advantages of digital communication system.
2. What is the major disadvantage of a digital communication system?
3. State sampling theorem.
4. Define non-uniform quantization.
5. Define Hamming distance and Hamming weight.
6. Define constraint length of a convolutional coder.
7. Define false alarm and false dismissal errors.
8. Give four applications of eye pattern.
9. What are coherent and non coherent receivers?
10. What is memory-less modulation? Give examples of two such methods.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Briefly write on various analog pulse communication systems. (10)

(ii) Explain the channel classification. (6)

Or

(b) (i) Briefly explain on geometric representation of signals. (8)

(ii) Explain the mathematical models of communication channel. (8)

12. (a) Explain temporal waveform encoding and spectral waveform encoding.

Or

(b) (i) Explain model based encoding. (8)

(ii) Compare the performance of various speech encoding methods. (8)

13. (a) Explain Viterbi algorithm to decode a convolutional coded message with a suitable example.

Or

(b) Derive and explain the power spectral density of

(i) ON-OFF code (8)

(ii) Polar code. (8)

14. (a) Derive the bit error probability of a matched filter.

Or

(b) Explain the Nyquist first criterion for ISI elimination.

15. (a) Derive the bit error probability of coherent ASK, FSK, PSK receivers.

Or

(b) Derive the bit error probability of QPSK Receiver.
