G 1556

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B.TECH. DEGREE EXAMINATION, MAY 2016

Fourth Semester

Branch : Computer Science and Engineering

CS 010 404 – SIGNALS AND COMMUNICATION SYSTEMS (CS)

(New Scheme – 2010 Admission onwards)

[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A
Answer all questions.
Each question carries 3 marks.

1. State sampling theorem.

2. Define signal to noise ratio.

3. What are the main advantage of FM over AM?

4. Distinguish between two basic multiplex in techniques.

5. Explain convolution coding.

(5 × 3 = 15 marks)

Part B
Answer all questions.
Each question carries 5 marks.

6. What is quantization?

7. Define Shannon Hartley theorem.

8. Explain differential phase shift keying.

9. What are the differences between half duplex and full duplex communication?

10. Explain Baudot and bar coding.

(5 × 5 = 25 marks)

Part C
Answer all questions.
Each full question carries 12 marks.

11. Explain the linearity and time scaling properties of Fourier transform.

Or

12. Explain the difference between continuous time signal and discrete time signal.

Turn over

13. What are the basic problems in signal transmission?

Or

14. Contrast the advantages and disadvantages of fiber-optic cables and metallic cables.

15. Mathematically show that the double-side band full carrier AM signal consists of one carrier and two side bands of equal amplitudes.

Or

16. Derive an expression for quantization noise and SNR of PCM system.

17. Explain how packet switching works.

Or

18. What are the differences between half duplex and full duplex communication?

19. Explain the following in detail :

    (a) ASCII.

    (b) Baudot coding.

    (c) Parity coding.

Or

20. What is the purpose of Hamming code? Construct the Hamming code for bit sequence 100011001.

(5 × 12 = 60 marks)