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BT-4/M-24 44219

INTELLIGENT COMMUNICATION SYSTEMS
ES-CS-AIDS

Time : Three Hours] [Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (i) Discuss the role of Nyquist-Shannon sampling theorem in communication system with example. 8

   (ii) Differentiate BPSK and QPSK. 7

2. (i) Explain the working of Delta modulation. 7

   (ii) Differentiate FDMA and TDMA with example. 8

Unit II

3. (i) A text is made up of character A, B, C, D and E. Each with the occurring probability :

   0.08, 0.40, 0.25, 0.15 and 0.12.

   Find the average length of optimal coding techniques using Huffman coding. 8

(ii) Write and describe the steps involved in Viterbi algorithm. 7

4. (i) What is Channel coding theorem ? If the channel is band limited to 6 kHz and signal to noise ratio is 16, what would be the capacity of channel ? 8

(ii) Differentiate connection oriented and connection less services with example. 7

Unit III

5. Distinguish TCP/IP and OSI model. Explain layered architecture of OSI model. 15

6. Explain ATM layered architecture and working of ATM. Discuss various AAL services. 15

Unit IV

7. (i) Discuss the structure of knowledge base system in intelligent communication system. 7

(ii) What is Herbrand universe ? Discuss Herbrand theorem and its application. 8

8. (i) Explain state of the art design methodology used in intelligent communication system. 7

(ii) What is the production rule for telecommunication ? Discuss various applications of production rule. 8