Total No. of Questions : 5] [Total No. of Printed Pages : 3

Roll No. .....

CS–501(N)

B. E. (Fifth Semester) EXAMINATION, June, 2011

(Computer Science & Engg. Branch)

DATA COMMUNICATION

[CS–501(N)]

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt all questions. All questions carry equal marks.

Unit–I

1. (a) Describe the asynchronous transmission control scheme with their frame structure.

   (b) What is run length encoding ? Explain with suitable example.

   Or

   (a) Draw the following data formats for the bit stream 1100110 :

   (i) Polar NRZ

   (ii) Unipolar RZ

   (iii) AMI

   (iv) Manchester

   (b) Discuss the MPEG compression standard in detail.

P. T. O.

Unit–II

2. (a) Explain the following :

   (i) Frequency hopping spread spectrum

   (ii) Direct sequence spread spectrum

   (b) Discuss the X·25 packet switching network on the following points :

   (i) Services provided

   (ii) Advantages and Disadvantages

   (iii) Function of PAD

   Or

   (a) Briefly describe the digital signal :

   (i) Service

   (ii) What is TI carrier ?

   (b) List the name of ISDN channel types and give bandwidth and typical use of each ISDN channel types.

Unit–III

3. (a) What types of modulation is used for V-34 modems and why ?

   (b) Briefly describe the RS-449 Interface. Also discuss the advantages of RS-449 over RS-232.

   Or

   (a) What is a Null Modem ? Explain using the diagram.

   (b) (i) Explain the working of bridge.

   (ii) What is collision domain and broadcast domain ? Explain.

Unit–IV

4. (a) Briefly describe the broadband coaxial cable.

   (b) Explain briefly the Digital Subscriber Line (DSL).

Or

(a) Write a short note on unguided media.

(b) Briefly describe the POTS, Components, LATAs and signaling and services.

Unit – V

5. (a) What are the types of errors ? Explain each with example.

(b) (i) Calculate the internet checksum for the following group of 8-bits :

0 0 0 0 1 1 0 1

1 0 1 0 0 1 0 0

0 1 0 1 0 1 1 1

0 1 1 1 1 0 0 1

1 0 1 0 0 0 1 0

(ii) Write a short note on convolution code.

Or

(a) Explain the operation of the parity bit method of error detection and how it can be extended to cover block characters.

(b) Explain the principle of a CRC error detection method. If the given message = 1010001101 and predefined pattern = 110101 :

(i) Generate the transmitted message at transmitter.

(ii) The received message is checked for correctness at the receiver.