

www.vusr.net

LMS.VUSR.NET

CS601 Data Communication

Final Term Examination – Spring 2006

Time Allowed: 150 Minutes

Question No. 1

Marks : 2

Which error detection method uses ones complement arithmetic?

- ? Simple parity check
- ? Two-dimensional parity check
- ? CRC
- ? Checksum

Question No. 2

Marks : 2

In a time-domain plot, the vertical axis is the measure of _____.

- ? Amplitude
- ? Frequency
- ? Phase
- ? Time

Question No. 3

Marks : 20

Apply the Hamming code algorithm to transmit the seven bit data 1101101. Invert the 4th bit of the transmitted data and prove it at receiving end. The combination used to calculate each of the four r values for a seven bit data sequence are as follows:

- r1:** bits 1, 3, 5, 7, 9, 11
- r2:** bits 2, 3, 6, 7, 10, 11
- r4:** bits 4, 5, 6, 7
- r8:** bits 8, 9, 10, 11

Question No. 4

Marks : 2

Which topology requires a multipoint connection?

- ? Mesh

- ? Star
- ? Bus
- ? Ring

Question No. 5

Marks : 20

Draw the sender and receiver windows for a system using Go-Back-N ARQ, given the following:

- a. Frame 0 is sent; frame 0 is acknowledged.
- b. Frames 1 and 2 are sent; frame 1 and 2 are acknowledged.
- c. Frames 3, 4 and 5 are sent; frame 4 is acknowledged; timer for frame 5 expires.
- d. Frames 5, 6 and 7 are sent; frames 4 through 7 are acknowledged.

Question No. 6

Marks : 10

Apply the checksum error detection technique at sending end to the following two bit streams. If there is no error, prove at the receiving end that the pattern is OK.

- a) 1110101
- b) 1010010

Question No. 7

Marks : 20

- a) Encode the given bit stream using Return to Zero (RZ) scheme of Encoding. [10]

1 0 1 0 1 0 1 0 1 0

- b) Encode the given bit stream using Alternate Mark Inversion (AMI) scheme of Encoding. [10]

1 1 0 0 1 1 0 0 1 1

Question No. 8

Marks : 2

A timer is set when _____ is (are) sent out.

- ? A data frame
- ? An ACK
- ? A NAK
- ? An ARQ

Question No. 9

Marks : 2

If the data unit is 111111, the divisor 1010, and the remainder 110, what is the dividend at the receiver?

- ? 111111011
- ? 111111110
- ? 1010110
- ? 110111111

VUSR