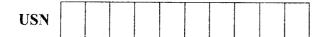
8



Fifth Semester B.E. Degree Examination, December 2010 Computer Networks - I

Time: 3 hrs. Max. Marks:100

> Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

- 1 system, with examples.
 - b. Discuss the ISO OSI layered model, bringing out the functionalities of each layer.

(10 Marks)

c. Define the key elements of a protocol.

(03 Marks)

- 2 An analog signal has a bandwidth of 40 kHz. If we use four levels in the signal, what is the minimum bandwidth of the digital signal? (04 Marks)
 - What is the Nyquist sampling rate for each of the following signals?
 - A low pass signal with bandwidth of 200 kHz. i)
 - A band pass signal with bandwidth of 300 kHz, having lowest frequency of 200 kHz.

(04 Marks)

Write a descriptive note on the three causes of transmission impairments.

(12 Marks)

- a. What is time division multiplexing? Explain how statistical TDM overcomes the disadvantages of synchronous TDM.
 - b. An analog signal has a bit rate of 10000 bps and bandwidth of 2000 band. How many data elements are carried by each signal element? How many signal elements do we need?

(04 Marks)

Explain phase shift keying, in detail.

(08 Marks)

- What is reflection? Briefly explain the fibre optic cable media, with a neat sketch. (08 Marks)
 - Draw a CRC encoder and decoder for CRC code with C (7, 4). Also explain how this CRC design works, with an example. (10 Marks)
 - c. Define line of sight propagation.

(02 Marks)

PART - B

- List the protocols for noisy channels. Explain stop and wait protocol for noiseless channels. 5
 - (08 Marks)

Define piggybacking and its usefulness.

(04 Marks)

Write explanatory notes on the different phases of PPP.

Explain 802.3 MAC frame format and frame length.

Explain in detail, the architecture of a SONET system.

(08 Marks)

Describe the different controlled access methods.

(10 Marks) (10 Marks)

7 Discuss the 802.11 MAC layer frame format.

- (08 Marks)
- b. Differentiate bus back bone from star back bone. Explain each in detail.
- (10 Marks) (02 Marks)

c. Differentiate between amplifier and repeater.

(10 Marks)

Write a note on byte interleaving.

- (04 Marks)
- c. Give the architecture of ATM. Show how VPs and VCs are established.
- (06 Marks)