Fifth Semester B.E. Degree Examination, December 2012
Computer Networks – I

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
atleast TWO questions from each part.

PART – A

1   a.   What is protocol? Define the key elements of protocols?   **(05 Marks)**
    b.   Define network topology, explain ring topology with advantages and disadvantages.
                                                                                    (05 Marks)
    c.   Explain the different levels of addressing used in an internet with a suitable example for each level of addressing in TCP /IP?   **(10 Marks)**

2   a.   Explain the following :
         i)   Bandwidth
         ii) Through put
         iii) Transmission time
         iv) Latency
         v)   Jitter.   **(05 Marks)**
    b.   Explain with the block diagram, the causes for transmission impairments.   **(09 Marks)**
    c.   Explain with neat waveform any two polar line coding schemes.   **(06 Marks)**

3   a.   What is multiplexing? Explain with a neat diagram FDM.   **(08 Marks)**
    b.   Explain how time – division – multiplexing differs from FDM, with a neat diagram?
                                                                                    (04 Marks)
    c.   What is switching? Differentiate circuit switch network with packet – switched network.
                                                                                    (08 Marks)

4   a.   What is internet checksum? List the steps undertaken by sender and receiver for error detection.   **(06 Marks)**
    b.   Explain with an example of block coding method for error detection and correction?
                                                                                    (10 Marks)
    c.   What is the Hamming distance? Find the minimum Hamming distance of the coding scheme shown in the table.   **(04 Marks)**

Data word		Code word				
0	0	0	0	0	0	0
0	1	0	1	0	1	1
1	0	1	0	1	0	1
1	1	1	1	1	1	0

PART – B

5 a. Calculate the time takes to send 2 million bits of data in a system that uses stop and wait protocols, if the distance between sender and receiver is 2000 kms. Assume packet size is 400 bits and propagation speed is 2×10^8 m. No data or control frame is lost. **(10 Marks)**

   b. Explain the frame format and transitional phases of Point – to – point protocols. **(10 Marks)**

6 a. Explain why collision is an issue in a random access protocol but not in controlled access or channelizing protocols? **(04 Marks)**

   b. Explain any two popular control access methods, with a neat diagram. **(08 Marks)**

   c. Explain 802.3 MAC frame format. **(08 Marks)**

7 a. Explain the services of IEEE 802.11 standards. **(04 Marks)**

   b. Write a short notes on :
      i) Blue tooth
      ii) Cellular telephone. **(10 Marks)**

   c. Explain the five standard of IMT – 2000 radio – interface of 3G systems? **(06 Marks)**

8 a. Explain briefly the advantages of IPV6. **(06 Marks)**

   b. Find out the netid and hostid of the following IP address?
      i)   111.64.2.6
      ii) 131.57.9.3
      iii) 207.64.52.11
      iv) 225.34.2.1. **(08 Marks)**

   c. Write short notes on network address translation (NAT). **(06 Marks)**

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