USN [　　　　　　　　] 　　　　　　　　　　　　　　　　　　　　　　10CS55

Fifth Semester B.E. Degree Examination, Dec. 2013/Jan. 2014
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 data communication? List and explain the five components of data communication system. **(06 Marks)**
   b. Discuss the ISO–OSI layered model, bringing out the functionalities of each layer. **(10 Marks)**
   c. Differentiate between :
      i) ARP and RARP
      ii) UDP and TCP. **(04 Marks)**

2 a. Write a descriptive note on three causes of transmission impairment. **(08 Marks)**
   b. Explain the transmission modes? **(06 Marks)**
   c. Explain delta modulation? **(06 Marks)**

3 a. What is FDM? Briefly explain its multiplexing and demultiplexing process. **(06 Marks)**
   b. Four sources create 250 characters per second. The frame contain one character from each source and one extra bit for synchronization. Find :
      i) The data rate of each source
      ii) Duration of each character in each source
      iii) Frame rate
      iv) Duration of output frame
      v) Frame size in bits
      vi) Data rate of link. **(06 Marks)**
   c. What is time division multiplexing? Explain how statistical TDM overcomes the disadvantages of synchronous TDM. **(08 Marks)**

4 a. Describe different types of errors. **(03 Marks)**
   b. Explain error detection and error correction with respect to block coding. **(08 Marks)**
   c. Find the codeword, using CRC given data word "1001" and generator "1011". **(09 Marks)**

PART – B

5 a. Explain briefly, with neat figure stop and wait ARQ and Go Back N ARQ. **(12 Marks)**
   b. Explain the frame format and transitional phases of point to point protocol. **(08 Marks)**

6 a. Explain :
      i) CSMA
      ii) CSMA/CD. **(12 Marks)**
   b. Describe 802.3 Mac frame. **(08 Marks)**

7 a. Explain IEEE 802.11 architecture. **(10 Marks)**
   b. Bring out the differences between repeaters, bridges, routers and gateways. **(10 Marks)**

8 a. Explain with respect to IPV4, classful addressing and classless addressing. **(10 Marks)**
   b. Explain in detail IPV6 packet format. **(10 Marks)**

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