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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)