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**B.E / B.Tech (Part Time) End Semester DEGREE EXAMINATION, APRIL / MAY 2010**

Fourth Semester

Computer Science and Engineering

**PTCS 373 – DATA COMMUNICATION AND COMPUTER NETWORKS**

(Regulation 2005)

Time : 3 Hours

Answer ALL Questions

Max. Marks 100

**PART-A (10 x 2 = 20 Marks)**

1. How Fiber optic cables carry data with higher rate?
2. How synchronization is ensured in Biphase encoding techniques?
3. What do you meant by bit stuffing? Why it is required?
4. Suppose that a selective-reject ARQ is used where  $W=4$ . Show by example that a 3-bit sequence number is needed.
5. Why there is no ICMP message report for the loss of an ICMP message?
6. State few design considerations for ARP Cache.
7. What is the role of RST and URG flag fields in TCP header?
8. Compare congestion control with flow control.
9. List the various Resource records maintained in DNS.
10. How FTP operates on two port numbers?

**PART B ( 5 x 16 = 80 Marks)**

- 11). a) Discuss in detail about the modulation techniques for transmitting digital data using analog signals. (8)
- b) Explain the characteristics and modes of operation of Fiber optic communication media in detail. (8)
- 12). a) i.. Consider the use of 1000 bit frames on a 1-Mbps satellite channel with a 270ms delay. What is the maximum link utilization for
  1. Stop and wait flow control?
  2. Continuous flow control with a window size of 7?
  3. Continuous flow control with a window size of 127?
  4. Continuous flow control with a window size of 255? (8)

- ii. Discuss in detail about the various error detection and correction mechanisms in Layer 2. (8)

Or

- b) Write notes on
- i. FDDI (8)
  - ii. Wireless LAN (8)
13. a) i. Explain the various fields in ARP/RARP packet headers. (8)
- ii. What is the need for subnetting? With suitable examples show how it is performed in class B addresses with the corresponding subnet masks (8).

Or

- b) i. Explain any two routing algorithms with an example network scenario. (10)
- ii. Explain any three ICMP messages with their format in detail. (6)
14. a) Explain the TCP congestion avoidance mechanisms in detail. (16)

Or

- b) i. Explain the various fields in TCP and UDP header with a diagram. (10)
- ii. Discuss in detail about the various queuing disciplines in TCP transmissions. (6)
15. a) Discuss about the various multimedia applications in detail. (16)

Or

- b) Discuss about
- i. FTP (8)
  - ii. SNMP (8)