

Bengal Engineering and Science University, Shibpur  
B.E. 6<sup>th</sup> Semester (CST) Final Examination, 2012  
Computer Networks (CS-603)

Time: 3 hours

FM: 70

(Answer any five)

1. (a) What is the basic principle of transmission using unguided transmission medium? 2  
(b) What are the different configurations used for this purpose? 4  
(c) What is encapsulation? 2  
(d) What is the function of preamble field in Ethernet frame? What is SFD? 4  
(e) Why CSMA/CD is not required in full duplex Ethernet? 2
2. (a) What is transparent bridge? 4  
(b) Compare the performance of 1-persistent, non-persistent and p-persistent CSMA protocol. 6  
(c) Describe the basic principle of operation of CRC error detection algorithm with example. 4
3. (a) A block of addresses starting with 17.12.14.0/26 is granted to an organization. Organization has three different offices and needs to divide the addresses into three subblocks of 32, 16 and 16 addresses. Find the new masks. 3  
(b) What is the function of fragmentation offset field in IPv4 datagram? 3  
(c) What is the function of flow label field in IPv6 datagram? 3  
(d) How BOOTP differs from RARP and DHCP differs from BOOTP? 5
4. (a) How the multicast router monitors group membership in IGMP? 3  
(b) Define intra domain and inter domain routing. 2  
(c) What is BGP? 3  
(d) Define forward signaling and backward signaling technique of closed-loop congestion control. 3  
(e) What is the use of the variable ssthresh in TCP congestion policy? 3
5. (a) What is the function of urgent pointer in TCP segment? 2.5  
(b) What is SYN flooding attack in the context of 3-way handshaking in TCP for establishing connection? How it can be removed? 5  
(c) Define the function of PSH flag in TCP segment? 2.5  
(d) How sliding window protocol of transport layer differs from DLC layer? 4
6. (a) How message/message digest differs from document/finger print? 2  
(b) What are the various criteria of hash function for creating message digest? 5  
(c) How digital signature differs from conventional signature? 4  
(d) Define message nonrepudiation and its solution. 3
7. (a) What is the format of SNMP packet in SNMP? 3  
(b) Describe DSSS CDMA system. 4  
(c) Define process migration in distributed OS. 4  
(d) Describe the differences between local and remote procedure call. 3