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VI SEMESTER B.E. DEGREE END SEM EXAMINATION
MAY-2012
SUBJECT**: Network Protocol (CSE 306)**

TIME : 3 HOUR MAX.MARKS :50

Instructions to Candidates

- Answer any 5 full questions.
- Assume the required data.

1A An organization was allocated 130.16.0.0 IP address(class full addressing) for their network. They want to subnet this into 13 subnets? 5M 5M

a. Calculate required number of bits to borrow for subnetting
b. Calculate the subnet mask
c. How many hosts can be connected in each subnet

Write the subnet network address and broadcast address for first 3 subnets

1B Explain clearly about the restrictions in classless addressing 2M

1C Find the range of addresses in the following blocks 3M

a. 123.56.77.32/29 b. 200.17.21.128/27 c. 17.34.16.0/23

2A In the below given ARP cache Table the maximum time out allowed is 200 seconds and maximum number of attempt allowed are 3. Update the below given Cache Table for the following continues events.Note: This is the status of the ARP Cache table at 10^{th} second and the following events are happening with respect this time line 5M

State	Attempts	Time-Out	Protocol Addr	Hardware Addr
R		100	198.168.1.8	AC:AE:32:45:73:42
R		170	198.168.1.9	AC:AE:32:45:73:44
P	2		198.168.1.3	
F				
F				
P	1		198.168.1.19	
P	3		198.168.1.20	
R		70	198.168.1.33	AC:AF:32:45:73:42

a. At 20^{th} second ARP reply packet comes from a host with ip address 198.168.1.3 and the MAC address mentioned in the reply packet is BC:AE:32:55:73:44.
b. At 35^{th} second an ARP request packet comes from a host requesting for the MAC address of 198.168.1.20.
c. At 70^{th} second an ARP request packet comes from a host requesting for the MAC address of 198.168.1.60.
d. At 130^{th} second an ARP request packet comes from a host requesting for the MAC address of 198.168.1.8.
e. At 170^{th} second an ARP request packet comes from a host requesting for the MAC address of 198.168.1.60.

2B	Determine if datagram with the following information is first fragment, a middle fragment, a last segment, or the only fragment (no fragmentation): a. M-bit is set to 1 and the value of the offset field is zero. **b.** M-bit is set to 1 and the value of the offset field is nonzero	2M
2C	What is the size of the address space in each of the following systems? a. A system in which address is only 16-bits b. A system in which each address is made of six hexadecimal digits **c.** A system in which each address is made of four octal digits.	3M
3A	Explain transition strategies with help of diagram, used when host is using IPv6 - Destination host uses IPv6 - Destination host uses IPv4.	5M
3B	Explain the four aspects of registration in Mobile IP?	2M
3C	Find the value of flag field(in hexadecimal) for an authoritative message carrying an inverse response. The resolver had asked for a recursive response but the recursive answer was not available.	2M
3D	What is the size of the question record containing the domain name manipal.edu?	1M
4A	A new TCP implementation use the SACK option to report the out of order and duplicates range of bytes, explain separately how old implementations (without sack) can indicate that the bytes in a received segments are out of order or duplicate.	2M
4B	Some of the application programs can use the services of two transport layer protocols(TCP or UDP). When a packet arrives at the destination how can the computer find which transport layer protocol is involved?.	2M
4C	Explain strict source routing with required packet format and example?	3M
4D	An HTTP client opens a TCP connection using an initial sequence number (ISN) of 14,534 and the ephemeral port number of 59,100. The server opens the connection with an ISN of 21,732. Show the three TCP segments (show all field values) during the connection establishment if the client defines the *rwnd* of 4000 and the server defines the *rwnd* of 5000. Ignore the calculation of Checksum field.	3M
5A	Explain source quench and redirection in detail.	2M
5B	Explain receiver site and sender site implementation of flow control in SCTP.	3M
5C	Explain the role of security parameter index in IPV6 Options	2M
5D	Explain INIT and INIT ACK chunk with the help of the format	3M
6A	What are different types of commands in FTP? Explain each with example.	3M
6B	Host A uses TFTP to read 2150 bytes of data from host B. Show all the TFTP commands including commands needed for connection establishment and termination. Assume the second block is in error.	2M
6C	Explain the characters used to control the application program running on remote server in TELNET.	3M
6D	Explain Persistent and non-persistent connection in HTTP.	2M