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SEMESTER B.E (COMPUTER SCIENCE AND ENGINEERING) DEGREE
END-SEMESTER EXAMINATION-MAY 2013
SUBJECT: NETWORK PROTOCOLS (CSE 304)
DATE: 08-05-2013

TIME: 3 HOUR MAX.MARKS :50

Instructions to Candidates

- **Note:** Answer any **FIVE** full questions.

1.A. What is the maximum number of subnets in Class B network if mask is 255.255.192.0? Find the subnet mask in network if there are 256 subnets in class B?

1.B. An ICMP message has arrived with the header (in hexadecimal):
05 00 11 12 11 0B 03 02.
What is the type of the message? What is the code? What is the purpose of the message? What is the value of the last 4 bytes? What do the last bytes signify?

1.C. An ISP is granted a block of addresses starting with 150.80.0.0/16. The ISP wants
to distribute these blocks to 2600 customers as follows:
a. The first group has 200 medium-size businesses; each needs approximately 128 addresses.
b. The second group has 400 small businesses; each needs approximately 16 addresses.
c. The third group has 2000 households; each needs 4 addresses.
Design the sub blocks and give the slash notation for each sub-block.
Find out how many addresses are still available after these allocations. (3+3+4)

2.A. Show the encapsulation of RARP packet with diagram.

2.B. List and explain the cache table fields in ARP package

2.C. Explain the following with respect to IP.
a. Timestamp option(with format)
b. Steps to calculate checksum at receiver (2+3+5)

3.A. Draw the diagram of UDP package and write the pseudo code for Input module.

3.B. A window holds bytes 2001 to 5000. The next byte to be sent is 3001. Draw a figure to show the situation of the window after the following two events.
a. An ACK segment with the acknowledgment number 2500 and window size Advertisement 4000 is received.
b. A segment carrying 1,000 bytes is sent.

3.C. Show the sequence of characters exchanged between the TELNET client and the server to switch from the character mode to the default mode. (4+4+2)

4.A. List and define any four common options of telnet.

4.B. A DNS client is looking for the name of the computer with IP address 132.1.17.8. Show the query message.

4.C. The state of a receiver is as follows:
a. The receiving queue has chunks 1 to 8, 11 to 14, and 16 to 20.
b. There are 1800 bytes of space in the queue.
c. The value of lastAck is 4.
d. No duplicate chunk has been received.
e. The value of cumTSN is 5.
Show the contents of the receiving queue and the variables.
Show the contents of the SACK message sent by the receiver. (2+3+5)

5.A. Draw the different states of "simultaneous open" scenario in SCTP.

5.B. Give the solution for silly window syndrome in TCP, if it is created by
a. Sender
b. receiver

5.C. What is request line and status line in HTTP. Define with required fields.

5.D. Show the encapsulation of a WRQ message in a UDP user datagram. Assume the file name is "Report" and the mode is ASCII. What is the size of the UDP datagram? (2+3+2+3)

6.A. Explain the different transmission modes of FTP file transfer.

6.B. Write a short note on following.
a. Packet too big
b. Automatic tunnelling
c. 'Authentication' IPv6 extension header
d. Tunnel mode encryption in IPv6
e. Compatible address

6.C. What is the inefficiency in Mobile IP? Give the solution for this. (2+5+3)