THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. DEGREE PROGRAMME: LEVEL 05
NO BOOK TEST 2 - 2014/2015
CPU3245 – COMPUTER NETWORKS AND SECURITY
DURATION: One and a Half hours

Date: 30/08/2015 **Time: 4.00pm – 5.30pm**

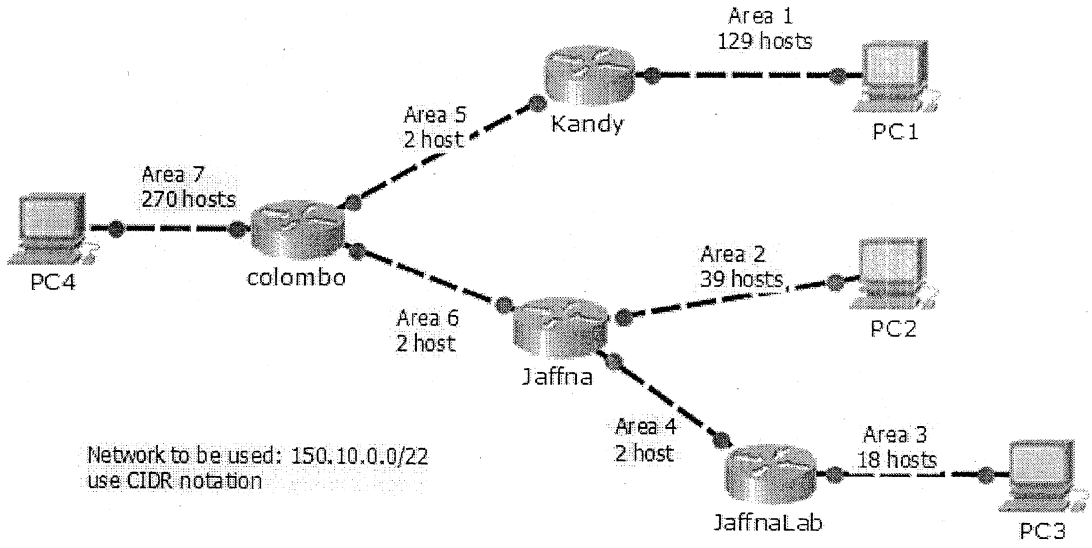
Answer All Questions

QUESTION 1

1.1) Explain the purpose of choke packet in the context of congestion control.

1.2) You need to subnet an IP block to a seven sub networks (areas) as indicated in the following diagram. Stating all the assumptions you make, divide the IP block (150.10.0.0/22) to proper subnets and give the following information for each subnet. Show your calculations.

i) Network address and mask
ii) Broadcast address of the subnet



1.3) Give the Linux command to copy all files starting from the letter g from *var* folder in root directory to *etc* folder in the root directory.

1.4) What is the difference between *IMAP* protocol and *POP3* protocol?

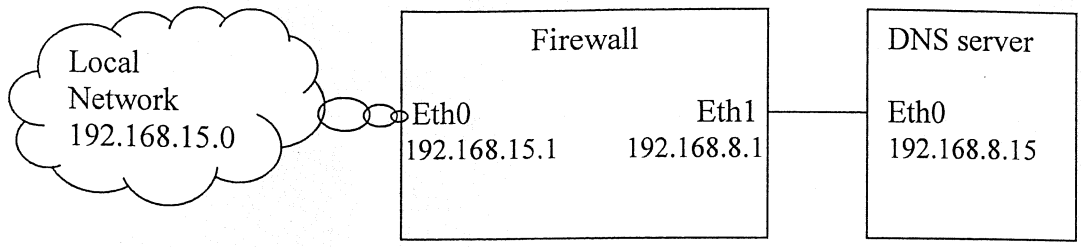
QUESTION 2

2.1) Draw the 32 bit IP header and briefly explain the fields of the IP header

2.2) What is the difference between symmetric key and asymmetric key algorithms? Give an example for each type.

2.3) Explain the three-way handshake mechanism in TCP connection establishment.

2.4) Suppose you have a following firewall setup in a Linux server. (Subnet mask /24)



Write proper firewall rules to allow the following traffic

i) Any DNS traffic coming to the DNS server 192.168.8.15 has to be allowed.

ii) Telnet traffic from the 192.168.15.0 network to the firewall has to be stopped without notifying sender.

iii) SMTP traffic coming in and going out of firewall has to be allowed.

iv) Default policy of the firewall is to allow any traffic other than specifically blocked traffic

2.5) Encrypt the following text using the key DENMARK and obtain the transposition cipher.

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