LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

M.C.A. DEGREE EXAMINATION – **COMPUTER APPLICATIONS**

FOURTH SEMESTER – APRIL 2017

CA 4958- NETWORK ADMINISTRATION

Date: 29-04-2017 Dept. No. Max. : 100 Marks
Time: 09:00-12:00

PART A

Answer ALL Questions (10 X 2 = 20 Marks)

1. What is called a hub?
2. What is SMTP?
3. Why we need ARP protocol?
4. Define network address translation.
5. Give the range of class A, B and C addresses in dotted-decimal notation.
6. Change the following IP addresses from dotted-decimal notation to binary notation:
   i. 114.34.20.8 ii. 129.14.6.8 iii. 208.34.54.14 iv. 238.34.2.
7. How DNS converts a URL into respective IP address?
8. Why DHCP is needed in a network?
9. What is the necessity for MPLS?
10. Mention the types of messages sent by ICMP Protocol.

PART B

Answer ALL Questions (5 X 8 = 40 Marks)

11a. What do you mean by persistent and nonpersistent connection in HTTP?

(or)

11b. Explain the header format of TCP segment.

12a. Explain the responsibilities of Data Link layer.

(or)

12b. Discuss the concept that is used in link-state routing.

13a. An organization is granted the block 130.56.0.0/16. The administrator wants to create 1024 subnets. Find the following:

i. the subnet mask ii. the number of addresses in each subnet
iii. first and last address in first subnet iv. first and last address in the last subnet.

(or)

13b. An organization is granted a block of addresses with the beginning address 14.24.74.0/24. The organization needs to have 3 subblocks of addresses to use it in its three subnets as shown below:
i. one subblock of 120 addresses ii. one subblock of 60 addresses iii. one subblock of 10 addresses.
Design the subblocks and find out how many addresses are still available after the allocation.

14a. Discuss the DORA process of DHCP

(or)

14b. Describe how errors are handled by ICMP protocol.

15a. Write the applications of ATM network.

(or)

15b. Write a note on point- to- point protocol.

ART C

Answer any TWO Questions (2 X 20 = 40 Marks)

16a. Describe the connection establishment and data transfer phases of TCP protocol.

16b. Explain the format of request message and response message of HTTP protocol.

17a. Explain in detail Ethernet evolution.

17b. Discuss the IP protocol in detail.

18a. Describe the message format of DNS.

18b. Write about the components of MPLS network.

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