TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean
April 2018

Full Marks: 40
Time: 2 hrs.

> **BIM / Fifth Semester / IT 223: Advance Internetworking**

Candidates are required to answer all the questions in their own words as far as practicable.

Group "A"

1. **Brief Answer Questions:** [10 × 1 = 10]

   i. Place the following protocols/mechanisms in the correct TCP/IP protocol layer: ICMP, DCCP and DNS.

   ii. What is multi homing?

   iii. Write down the range of IPv4 multicast address.

   iv. Write layers of OSI Model in order.

   v. What is the aggregated network of the following subnets: 172.16.0.0/18, 172.16.64.0/18, 172.16.128.0/18, 172.16.192.0/18?

   vi. F0BC:B0A8:000:3210:02F:0000:0000:FFEF is an IPv6 address. Use the IPv6 abbreviation rules to give this address in its shortest form.

   vii. List the closed loop congestion control method.

   viii. Write down the first IP and last IP of given IP address 192.168.100.197/27. Also write the subnet mask of given IP.

   ix. List the types of scheduling to improve quality of service.

   x. List the method to stream store audio and video.

Group "B"

Exercise Problems: [5 × 4 = 20]

2. Differentiate between SCTP and DCCP with example.

3. Use an Ethernet channel with MTU = 1500 bytes to transmit the one large datagram of 5500 bytes. Show fragmentation in detail.

4. The Asia Pacific Network Information Center (APNIC) has to provide service to 8 Local ISPs from the network pool of 215.10.0.0/20. From the available pool each Local ISP has to provide service to their 4 dedicated clients. Design the complete IP Address Plan which includes IP Pool, Usable IP Pool and Subnet Mask for each network.

5. From the following information convert MAC address into IPv6 address using EUI-64

   MAC address: 10:0B:0D:10:0A:20

   IPV6 Network ID: 20B4:2001:1A34:ABBA::/64

   Also write down the link local IPV6 address.

6. What are the advantages of CDN? Also explain its server placement philosophies.

Group "C"

Comprehensive Questions: [2 × 5 = 10]

7. Explain the Multicast Distance Vector Routing Protocol and its strategies in detail.

8. What do you mean by Count to Infinity Problem? Explain any two solutions to the problem.