Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

V SEMESTER B.TECH. (COMUPTER AND COMMUNICATION ENGINEERING)

END SEMESTER EXAMINATIONS, NOVEMBER 2017

SUBJECT: HIGH SPEED COMMUNICATION NETWORKS AND PROGRAMMING [ICT 3152]

REVISED CREDIT SYSTEM
(17/11/2017)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer ALL the questions.
- Missing data may be suitably assumed.

1A.	Write simple client – server program to demonstrate concurrent server using connection oriented communication. The server is using 10.1.1.20 and 1234 and client uses 10.1.2.10 and 2345 as IP address and port number respectively.	5
1B.	Explain the AAL process which supports services that require the transfer of information at constant rate. Find the overhead for 6400 bytes packet.	3
1C.	How do getservbyname and getservbyport system calls provide the details of server?	2
2A.	List and explain different IPv4 socket options with syntax.	5
2B.	What is the significance of label in MPLS? With neat diagram explain the structure of label used in MPLS.	3
2C.	Compare a conventional TDM leased line with an ATM PVC from the user's point of view and from the network operator's point of view. Which feature PVCs make them attractive from both points of view?	2
3A.	Sate the main difference between hard state and soft sate in communication network. Explain how the soft state features of RSVP allows it to adapt to failures in the network.	5
3B.	How do you use getsockname and getpeername in interoperability?	3
3C.	Integrated service model has failed to provide QoS in the internet. Justify your answer.	2

4A. Complete the levels and describe the sequence of DTLs that are used in setting up a connection from B.2.3 to A.1.2 in Figure Q.4A. (Thick line denotes shortest path from source node to destination node) 5

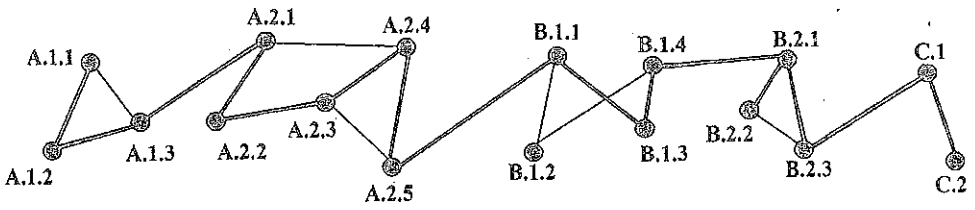

Figure Q. 4A

4B. What is byte ordering? What are the different types of ordering? How do you handle it in socket programming? 3

4C. Explain the functionalities of traffic conditioning in a differentiated service capable router. 2

5A. How do you convert multicast IP address to MAC address? What are the procedures involved in multicast communication and show multicast communication scenario to join a multicast group on WAN network? 5

5B. Draw a block diagram of fiber optic communication system and describe the function of each component. 3

5C. Write a client-side pseudo-code to send "Hi", "Good" and "Day" messages to the server in a single packet. The server is using 172.16.53.200 and 5218 and client uses 172.16.53.1 and 8739 as IP address and port number respectively. Here client and server are using connection oriented communication for sending and receiving the messages. 2