Reg. No.

Manipal Institute of Technology, Manipal
(A Constituent Institute of Manipal University)

VII SEMESTER B.TECH (MECHATRONICS ENGINEERING)
END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: COMPUTER NETWORKING AND COMMUNICATION
PROTOCOL [CSE 451]

Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:

❖ Answer **ANY FIVE FULL** questions.
❖ Missing data may be suitably assumed.

1A.	With a diagram explain OSI reference model for Computer Networks.	**5**
1B.	What is multiplexing? Explain two basic methods of multiplexing.	**3**
1C.	Four channels are multiplexed using TDM. If a channel sends 100 bytes/s and we multiplex 1 byte per channel, find the frame size, the duration of a frame, the frame rate and bit rate for the link.	**2**
2A.	With examples explain the different framing techniques used in data link layer.	**5**
2B.	Differentiate between Go back N and Selective repeat protocols.	**3**
2C.	Explain how virtual connections are defined in ATM networks.	**2**
3A.	Explain distance vector routing algorithm to find the route between source and destination with an example.	**5**
3B.	Discuss class-full addressing scheme used in IP. Give examples for each class in dotted decimal format.	**3**
3C.	An IP packet has arrived with first 8 bits as *01000010.*The receiver discards the packet. Why?	**2**
4A.	Explain the different techniques used to improve the QOS in IP.	**5**
4B.	Differentiate between token bucket and leaky bucket algorithms.	**3**
4C.	Two channels one with a bit rate of 100Kbps and another 200Kbps are to be multiplexed. How this can be achieved? What is the frame rate? What is the frame duration? What is the bit rate of the link?	**2**
5A.	Explain the fields of a TCP header along with the datagram format.	**5**

5B.	Briefly explain how VSAT works as an example of GEO based satellite communication.	**3**
5C.	How the inefficiency of Stop-and-Wait protocol is overcome in sliding window protocol?	**2**
6A.	Explain the working of SNMP protocol for network management.	**5**
6B.	Discuss the working of Border Gateway protocol with a diagram.	**3**
6C.	What limitations of a bridge are overcome by a router?	**2**