Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

V SEMESTER B.TECH. (COMPUTER SCIENCE & ENGINEERING)

MAKE-UP EXAMINATIONS, DEC 2017

SUBJECT: COMPUTER NETWORKS [CSE 3103]

REVISED CREDIT SYSTEM
(21/12/2017)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitable assumed.

1A. Explain the different mail transfer phases during e-mail transfer. **4M**

1B. Assume that a TELNET client uses ASCII to represent characters, but the TELNET server uses EBSCDIC to represent characters. With a diagram explain the technique used in the TELNET to handle the above issue. **4M**

1C. Consider an HTTP client that wants to retrieve a Web document at a given URL. The IP address of the HTTP server is initially unknown. What transport and application layer protocols besides HTTP are needed in this case? **2M**

2A. With a send and receive window diagram explain the selective repeat protocol. **5M**

2B. Explain the role of following fields in the TCP header.
i) HLEN ii) PSH flag iii) URGENT pointer and URG flag. **3M**

2C. In TCP initial value of retransmission timeout, RTO = 10 secs. After first measurement, the measured value of Round trip time, RTT = 1.5 secs. During a second measurement, measured RTT = 2.5 secs. Calculate the new value of RTO. **2M**

3A. With a Time-line diagram explain the client and server TCP states for 3-way connection establishment, data transfer and connection termination. **5M**

3B. With an example explain the Count to infinity problem in distance vector routing algorithm. **3M**

3C. Given the following addresses 193.45.67.23/24. Extract the following information:
i) First address ii) Last address iii) Number of addresses in the block. iv) Network mask **2M**

4A. With an example explain the working of trace route program. **5M**

4B. Explain why Classfull addressing is not effective in i) Address utilization ii) Scalability. Give your suggestions to make it effective in each case. **3M**

4C. Determine if a datagram with the following information is a first fragment , a middle fragment , a last fragment, or the only fragment. **2M**
i) M bit is set to 1 and the value of offset field is zero
ii) M bit is set to 1 and the value of offset field is nonzero

5A. With a flow chart explain the p-persistent CSMA/CD media access protocol. **5M**

5B. With a diagram, explain Ethernet frame format. **3M**

5C. A signal travels from point A to point B. At point A signal power is 100W. At point B, the power is 90W. What is the attenuation in decibels. **2M**