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MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

V SEMESTER B.TECH (COMPUTER SCIENCE AND ENGINEERING) DEGREE
MAKEUP EXAMINATION, DEC-2018
SUBJECT : COMPUTER NETWORKS(CSE 3103)
REVISED CREDIT SYSTEM
DATE: 23-12-2018

TIME:03 HOURS MAX.MARKS : 50

Instructions to Candidates:

- Answer ALL FIVE FULL questions.
- Missing data, if any, may be suitably assumed.

1A. With a diagram explain how an electronic store can benefit from the use of cookies. 5M

1B. One of the most popular Internet application protocols uses two ports and two channels between client and server. Which protocol is it, and how are the two channels used? Explain with a diagram. 3M

1C. Why do HTTP, FTP, SMTP and POP3 run on top of TCP rather than on UDP? 2M

2A. Explain the different events happening during connection establishment, connection termination, and data transfer between TCP client and server using a state transition diagram. 5M

2B. Explain following with respect to TCP 3M

(i) SYN Flooding Attack
(ii) Piggybacking
(iii) AIMD (Additive Increase, Multiplicative Decrease)

2C. Why in TCP, a SYN, SYN+ACK, and FIN segment, each consume a sequence number but an ACK segment carrying no data does not consume a sequence number? Explain. 2M

3A. With a neat diagram, explain the ICMP error message format. Explain any four ICMP error messages. Also discuss the restrictions on the generation of ICMP error messages. 5M

3B. Explain the different phases in Virtual Circuit Approach in packet switched network. 3M

3C. Combine the three blocks of addresses into a single block: 2M

(i) 16.27.24.0/26
(ii) 16.27.24.64/26
(iii) 16.27.24.128/25

4A. Explain Agent discovery, registration and data transfer phases in Mobile IP with suitable Diagram. 5M

4B. Explain three forms of Carrier Sense Multiple Access Protocols. 3M

4C. We have a channel with a 1 Mhz bandwidth. The Signal-to-Noise Ratio of this channel is 63 db. What are the appropriate bit rate and signal level? 2M

5A. With a frame format explain different fields of a TCP header. 5M

5B. List and explain three Transmission Impairements in Transmission Media with necessary expressions and diagrams. 3M

5C. A non periodic composite signal has a bandwidth of 200 kHz,with a middle frequency of 140 kHz and peak amplitude of 20V. The two extreme frequecies have an amplitude of 0V. Draw the frequency domain of the signal. 2M