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CS-69

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Pre-Revised)

Term-End Examination

June, 2016

00886

CS-69 : TCP/IP PROGRAMMING

Time : 2 hours *Maximum Marks : 60*

Note : *Question number 1 is* ***compulsory****. Answer any* ***three*** *questions from the rest.*

1. (a) How many networks can each IP address class A, B, C and D have ? Also, find the number of hosts per network in each given address class. *4*

(b) Given the following IP addresses, find the network address (beginning addresses) : *5*

(i) 25.27.10.90

(ii) 140.15.25.80

(c) Give any two examples of how computers can be connected together. *4*

(d) Write a UDP client and a server algorithm where the client should prompt a user to type a line of a text and send it to the server. The server should listen to the client and print the text with a client's name and calculate the number of space characters in the text. *7*

(e) How does TCP manage out-of-order and corrupted segments ? Explain with the help of an illustration/diagram. *6*

(f) What is the purpose of designing ICMP ? What are the different query messages in ICMP for network monitoring and management ? *4*

2. (a) What is the value of HLEN (IP Header field) when the header size is 20 bytes ? What is the value of HLEN when the maximum size of a header is 60 bytes ? *3*

(b) How does the link state routing protocol work ? *4*

(c) Explain the sequence of system calls in UDP and TCP client-server architecture. *3*

3. (a) Describe the two flags in IP header which deals with datagram fragmentation. *3*

(b) How is TELNET different from FTP ? Explain. *3*

(c) What is the purpose of the following system calls ? *4*

(i) read( )

(ii) sendto( )

4. (a) Explain the following TCP header fields with the help of examples : 4

(i) Sequence number

(ii) Acknowledgement number

(b) Differentiate between POP and IMAP. 3

(c) Discuss any two types of sockets. 3

5. (a) A DNS client is looking for the IP address of xxx.xxx.com domain name. Illustrate the complete procedure of mapping. 6

(b) How does the sliding protocol control the flow of packets in the network ? Explain with the help of a diagram. 4