

Seventh Semester B.E. Semester End Examination, FEBRUARY-APRIL-2022

NETWORK PROGRAMMING

Max. Marks :100

Time: 3 hrs

Instructions :1. Answer any FIVE Full Questions selecting at least ONE Question from Each Unit.

MODULE 1

L CO PO M

1a. What are the design decisions made before writing network programs? Justify the decisions made in a typical client server model. [5] [1] [1] [5]

1b. With neat block diagrams, explain how the communication takes places in a LAN and a WAN respectively. [2] [1] [1] [8]

1c. What is netstat? List the command with atleast 5 options along with the sample output with a brief description on the nature of the output produced. [3] [1] [1] [7]

OR

2a. Why do you think there was need for defining standards for Unix? What are the major Unix standards? Give an account of POSIX standards. [2] [1] [1] [6]

2b. What protocol options you have at transport layer? A student wants to build a PictureDekho server, and there are about 500 subscribers who would be watching the movie in the after-noon show, suggest a suitable protocol to use at the transport layer, with justification and show the necessary code to build the server. [3] [1] [2] [8]

2c. Justify why a three way handshake is needed in TCP connection? With a neat diagram, explain how the connection establishment and termination happens in TCP with appropriate timing diagrams. [2] [1] [1] [6]

MODULE 2

3a. Discuss value-result arguments passed from process to kernel and kernel to process. [4] [1] [2] [10]

3b. With a neat diagram, explain the sub-parts of Sockaddr_in structure and justify why it must be typecast to sockaddr while passing Sockaddr_in variable to bind API as an argument. [4] [1] [3] [10]

OR

4a. Defend the use of htons/htonl and inet_pton functions in network programming. Write a sample program to demonstrate the use of above functions.

4b. Demonstrate with appropriate code, the application of fork() and exec() APIs in Concurrent Server implementation. [2] [2] [3] [10]

MODULE 3

[3] [2] [2] [10]

5a. With a neat flow chart explain how you would implement Echo Client and Server application using UDP.

5b. Write both the Echo Client and Server programs using UDP and demonstrate their working. [2] [2] [2] [10]

[3] [2] [3] [10]

OR

6a. Explain with a neat diagram, the working of SCTP protocol and demonstrate with a sample code, how you would build a SCTP Server? [3] [2] [2] [8]

[3] [2] [2] [8]

10. Explain different kinds of patterns that can be mined with an example.

[2] [1] [4,5] [12]

OR

2a. Describe classification of data mining systems with

6b. How would you implement both UDP and TCP server using select API? Demonstrate and explain with the code listing.

[3] [2] [3] [12]

MODULE 4

7a. Discuss how IPV6 servers handle both IPV4 and IPV6 clients.

[2] [3] [3] [10]

7b. Explain processing of received IPV4 or IPV6 datagrams, depending on type of receiving socket.

[2] [3] [2] [10]

OR

8a. Explain processing of client requests, depending on address type and socket type for IPV4 and IPV6 datagrams.

[2] [3] [3] [10]

8b. Discuss the numerous ways to start a daemon and also explain the syslogd daemon.

[2] [3] [2] [10]

MODULE 5

9a. Explain Unicast example of a UDP datagram.

[2] [3] [2] [10]

9b. Explain the Scope of IPV4 and IPV6 Multicast addresses.

[2] [3] [2] [10]

OR

10a. Explain the dg_cli function that broadcasts to the standard UDP using SO_BROADCAST socket option.

10b. Demonstrate mapping of IPV4 and IPV6 multicast addresses to ethernet addresses.

[2] [1] [2] [10]
[3] [3] [3] [10]