KLS GIT, Department of Computer Science & Engineering
Network Programming (18CS72) - Question Bank

UNIT-1 _ INTRODUCTION

1. What is network programming? With neat diagram, Explain the Client and Server Communication over LAN and WAN OR **With a neat block diagram, explain the Client and Server communication on Local Area Network using TCP (8-10 marks)**
2. **With a neat block diagram, explain how the communication takes places in a LAN and a WAN respectively (8-10 marks)**
3. **What are the design decisions made before writing network programs? Justify the decisions made in a typical client server model (05 marks)**
4. **What is a netstat? List the command with atleast 5 options along with the sample output with a brief description on the nature of the output produced. (07 marks)**
5. **With a neat flow chart, explain the steps involved in building an Echo Client-Server application using TCP. (10 marks)**
6. **Write a program to implement TCP daytime client. (10 marks)**
7. **What do you understand by the term Network Programming? What are the high-level decisions to be made before you design the details of a protocol? With a neat diagram, explain how the communication takes place between a client and a server over LAN. (10 marks)**
8. **What is network protocol? With a neat block diagram explain the network application for client and server (08 marks)**
9. **Explain with a neat diagram the following: (12 marks)**
10. **a. TCP Connection Establishment b. TCP data transfer c. TCP connection termination**
11. **Develop a C program to implement TCP daytime client (12 marks)**
12. Write a program to implement TCP daytime client for IPV6
13. Explain the Error Handling using Wrapper functions OR **What are wrapper functions? Develop the wrapper functions for the following.**
    a) **Socket function**
    b) **Pthread_mutex_lock (08-10 marks)**
14. **Develop the "C" Program to implement simple daytime Server** OR Write a program to implement TCP daytime Server **(10-12 marks)**
15. Explain the layers in the OSI model and Internet Protocol suite
16. Write a brief note on BSD Networking History
17. Write a short note on various UNIX standards
18. With the neat diagram give the overview of TCP/IP Protocol
19. Write a short note on i) TCP ii) UDP iii) SCTP protocols
20. **Explain the process of TCP Connection Establishment and Termination (10 marks)**
21. Explain TCP state Transition Diagram OR **With a neat sketch explain the TCP state Transition Diagram (10-12 marks)**
22. With neat diagram, explain Packet Exchange for TCP connection
23. Explain Sockaddr_in structure and its parts.
24. Give the comparison on TCP, UDP and SCTP protocols

NOTE: For Network Programming Notes/PPTs/Study Materials join to the Google Class room through below link: https://classroom.google.com/c/NDQxMzI1ODk2NjAy?cjc=247muhv

NP UNIT 2_ Question Bank

1. **Illustrate the significance of socket functions for elementary TCP client/server with a neat block diagram. 8-10 marks**
2. **Develop a C Program to demonstrate the TCP echo server: main function 12 marks**
3. **Explain the following arguments of the socket function a) family b) Type c) Protocol**
4. **Compare the little-endian and big-endian byte ordering functions with a neat diagrams. Develop a C Program to determine host byte order. 12 marks**
5. **Discuss value-result arguments passed from process to kernel and kernel to process. 10 mark**
6. **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 10 mark.**
7. **Demonstrate with appropriate code, the application of fork() and exec() APIs in Concurrent Server implementation 10 mark.**
8. **Defend the use of htons/htonl and inet_pton functions in network programming. Write a sample program to demonstrate the use of above functions. 10 marks**
9. **What are Concurrent Servers? Explain how does Concurrent Servers handle multiple clients at the same time. (explain with the necessary code and the diagrams) 10 marks**
10. **What are Socket Functions? With neat figure explain Socket functions for elementary TCP client/Server. 10 mark**
11. **Outline the typical concurrent server with the help of pseudocode. 8 marks**
12. **Develop the C program to demonstrate the TCP echo client:str_cli function. 12 marks**
13. **Demonstrate the status of client/server after fork returns with a neat block diagram. 8 marks**
14. **Develop the pseudocode that returns the address family of a Socket 12 marks**
15. **What are Sockets? Explain Socket address structures**
16. Explain Generic socket address structure and its fields
17. **Explain IPV4 socket address structure and its fields**
18. **Explain IPV6 address structure and its fields**
19. **Implement client server communication using socket programming that uses connection oriented protocol at transport layer 10 Marks**
20. Explain New Generic socket address structure and its fields
21. Explain Value-Result Arguments.
22. Explain Byte Ordering Functions
23. Explain Byte Manipulation Functions.
24. What are Socket Functions? With neat figure explain Socket functions for elementary TCP client/Server
25. Discuss the following Socket functions
26. Connect Function

    • bind Function
    • listen Function
    • Accept Function
    • close Function
27. Explain fork and exec Functions
28. Explain in detail the socket Function. Explain the two queues maintained by TCP for a listening socket . How can you increase the maximum queue size to hold more number of connections.

29. What is the difference between Iterative and Concurrent Servers
30. What are getsockname and getpeername functions