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| **National University of Computer and Emerging Sciences, Lahore Campus** | | | | |
| C:\Users\saif\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Word\final design.jpg | **Course:** | **Computer Networks** | **Course Code:** | **CL-307** |
| **Program:** | **BS(Computer Science)** | **Semester:** | **Spring 2018** |
| **Duration:** | **20 Minutes** | **Total Marks:** | **25** |
| **Paper Date:** | **08-October-18** | **Weight** | **4%** |
| **Section:** | **A** | **Page(s):** | **4** |
| **Exam:** | **Quiz 1** | **Reg. No.** |  |
| **Instruction/Notes:** |  | | | |

**PART 1 (Marks: 8)**

**Suppose you have TCPclient and TCPserver on one host and UDPclient and UDPserver on another host.**

1. **Suppose you run TCPclient before TCPserver. What happens and why? (2)**

If TCPClient is run first, ConnectionRefused error will occur. This makes sense because if the TCPServer is not running it won’t be able to listen for a connecting client and allow it to connect.

1. **Suppose you run UDPclient before UDPserver. What happens and why? (2)**

If the UDPClient ran before the UDPServer, the program still allows me to send a message except I wouldn't get a response. This could mean the message is lost because the server was not available to receive the packet. Therefore, I can still run the client first, but in-order to receive a response I can’t send a message until the server is running.

1. **What happens if you use different port numbers for the client and server sides? (2)**

With UDP, there are no visible errors but the client won’t receive a response and the program won’t close. In TCP, client receives **a socket error.**

1. **Why Bind fail error occur? (2)**

Bind can fail for a number of reasons, such as, binding to a port that is already in use, having an invalid socket descriptor, etc... man bind gives a list of various errors it can cause.

**PART 2 (Marks: 5)**

1. **What information is needed to create a TCP Socket? What does it return?(1)**
2. **Differentiate between TCP and UDP. Give example where TCP and UDP are used**? **(2)**

|  |  |
| --- | --- |
| **TCP** | **UDP** |
| Connection oriented | Connection-less |
| Reliable | Unreliable |
| More Overhead | Less overhead |
| **Example** | |
| File transfer/ web page | Audio/Video |
| Emails | Video conferencing /Skype |

1. **Give two uses of Touch command? Which Linux command is used to show Memory and CPU utilization for running processes? (2)**

Touch command is used to

* 1. Create empty file using terminal
  2. Change timestamps of existing files and directories.

1. **TOP Command**

**PART 3 (Marks: 12)**

**Select an appropriate answer for each of the following questions.**

1. GNU Debugger, which is also called

A. gbd B. gnud C. gdb D. None

1. **Which combination of family and type of socket is used to create a datagram socket  
   Select one:**A. AF\_ROUTE, SOCK\_DGRAM B. AF\_INET, SOCK\_DGRAM  
   C. AF\_INET, SOCK\_STREAM D. AF\_KEY, SOCK\_DGRAM
2. The combination of an IP address and a port number is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Network address C. MAC address
4. Socket addresses D. None of the choices are correct
5. How many bits make up IPv4 and IPv6 addresses?
6. 16 and 128
7. 32 and 128
8. 16 and 32
9. None
10. What is the default packet size for ping command on Linux System?
11. 32 \* 8 bits B. 32 bits C. 32 \* 16 bits D. 32 \* 2 bits
12. Which of the following function puts the server in blocking state in TCP Socket Programming until client sends connection request?  
    A. Recv() B. Listen() C. Accept() D. both A and B
13. MAC Address of machine can be found using which Linux command:
14. Host –s MAC B. ipconfig
15. Both a & b D. None of these
16. Which one is incorrect Port No?
17. 65535 B. 241 C. 30987 D. None
18. Network byte order is also known as
19. Little Endian B. Big Endian
20. Can socket stream send data without a connection?
21. A connection needs to be established to send/receive data.
22. NO
23. Can be
24. ClientSocket = socket (AF\_INET, **SOCK\_DGRAM**, IPPROTO\_UDP)

The second parameter indicates that socket is of \_\_\_\_\_ type.

1. TCP
2. UDP
3. \_\_\_\_\_\_ command can be used to verify the path that your data will take to reach its destination, without actually sending your data.
4. Ping
5. Traceroute
6. Wget
7. Route