**Computer Networks Lab Class: T. E. Computer**

|  |  |
| --- | --- |
| **Sr. No.** | **Assignment Name** |
| **Group A** | |
| **1** | **Part A:** Setup a wired LAN using Layer 2 Switch and then IP switch of minimum four  computers. It includes preparation of cable, testing of cable using line tester, configuration  machine using IP addresses, testing using PING utility and demonstrate the PING packets  captured traces using Wireshark Packet Analyzer Tool.  **Part B:** Extend the same Assignment for Wireless using Access Point  (Mandatory Assignment) (Manual OK) |
| **2** | Write a program for error detection and correction for 7/8 bits ASCII codes using Hamming Codes or CRC. Demonstrate the packets captured traces using Wireshark Packet Analyzer Tool for peer to peer mode.( 50% students will perform Hamming Code and others will perform CRC) (Use C/C++) ***(DONE)*** *(**Manual OK)* |
| **3** | Write a program to simulate Go back N and Selective Repeat Modes of Sliding Window  Protocol in peer to peer mode and demonstrate the packets captured traces using Wire-shark Packet Analyzer Tool for peer to peer mode. (Use JAVA/PYTHON) ***(DONE)*** *Manual OK)* |
| **4** | Write a program to demonstrate subletting and find the subnet masks.  (Use JAVA/PYTHON) ***(DONE)*** *Manual OK)* |
| **5** | Write a program using TCP socket for wired network for following  a. Say Hello to Each other ( For all students) ***(DONE)***  b. File transfer ( For all students)  c. Calculator (Arithmetic) (50% students)  d. Calculator (Trigonometry) (50% students)  Demonstrate the packets captured traces using Wireshark Packet Analyzer Tool for peer to  peer mode. (Mandatory Assignment) (Use C/C++) (Manual OK) |
| **6** | Write a program using UDP Sockets to enable file transfer (Script, Text, Audio and Video  one file each) between two machines. Demonstrate the packets captured traces using  Wire-shark Packet Analyzer Tool for peer to peer mode.  (Mandatory Assignment) (Use C/C++) ***(DONE)***  *(**Manual OK)* |
| **7** | Write a program to analyze following packet formats captured through Wire-shark for wired network.  1. Ethernet  2. IP  3.TCP  4. UDP  (Mandatory Assignment) (Use C/C++) ***(DONE)***  *(**Manual OK)??????????????* |
| **8** | Write a program for DNS lookup. Given an IP address input, it should return URL and vice- versa. (Use JAVA/PYTHON) ***(DONE)*** *(**Manual OK)* |
| **9** | Installing and configure DHCP server and write a program to install the software on remote machine. (Manual OK) |
| **Group B** | |
| **10** | Write a program using TCP sockets for wired network to implement  a. Peer to Peer Chat ***(DONE)***  b. Multiuser Chat  Demonstrate the packets captured traces using Wire-shark Packet Analyzer Tool for peer to peer mode. (Use JAVA/PYTHON)  (Manual OK) |
| **11** | Write a program using UDP sockets for wired network to implement  a. Peer to Peer Chat ***(DONE)***  b. Multiuser Chat  Demonstrate the packets captured traces using Wire-shark Packet Analyzer Tool for peer to peer mode. (Use JAVA/PYTHON)  (Manual OK) |
| **12** | Use network simulator NS2 to implement:  a. Monitoring traffic for the given topology ***(DONE)***  b. Analysis of CSMA and Ethernet protocols ***(DONE)***  c. Network Routing: Shortest path routing, AODV. ***(DONE)***  d. Analysis of congestion control (TCP and UDP). (Mandatory Assignment) ***(DONE)***  *(**Manual OK)* |
| **13** | Configure RIP/OSPF/BGP using packet Tracer. (Mandatory Assignment) ***(DONE)*** *(**Manual OK)* |

Practical In charge H.O.D.

Prof. S. S. Thakare Prof. G. P. Mohole