**The LNM Institute of Information Technology, Jaipur**

**Computer Networks Lab**

**Lab Assignment**

**Objective**: Introduction to Networking Tools

**Task 1: Physical and Data link layer**

1. Find out what network cards your machine has. What is the speed?

(lspci)

1. What is the current speed of the network interface? What offload features are enabled?

(ethtool)

1. What is the MAC address of your machine?

(ip link, arp)

1. How many bytes did your eth0/em1 interface receive since boot?

(ifconfig)

1. What is the MTU setting for eth0/em1?

(ip link, ifconfig)

**Task 2: Network Layer**

1. What is your machine’s network address? What is the default gateway (IP address and MAC address) of your network?

(ip route, route, ip neighbour)

1. Show the arp entries in your machine.

(arp, ip neighbour)

1. Perform a traceroute/mtr to any web address. Provide the full traceroute/mtr output. Show how mtr and traceroute is working by packet capturing tools.

(mtr, traceroute, tcpdump host)

1. How many IP packets has received by your machine after current boot process?

(netstat)

**Task 3: Transport layer**

1. Find the active TCP connection on your machine?

(netstat)

1. How many sockets are currently open on your machine?

(netstat)

1. How many applications on your machine accessing network services? Also identify their access protocol.

(lsof)