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EXPERIMENT NO. 1

Aim / Title: LAN Configuration.

Problem Statement: Establishment and configuration of LAN

Objectives:

1. Verify working PC
2. Check availability of LAN cable (RJ45)
3. Get correct IP configurations (unless DHCP)
4. Configure IP's under Networking Properties (unless DHCP is active)

Outcomes: Student will be able to configure SOHO networks.

Pre-requisite: Basic knowledge of LAN

Hardware requirements: PC, LAN cable

Software requirements: Internet access

Theory: Simply put, a LAN is a computer network that connects a relatively small area (a single building or group of buildings). Most LANs connect workstations and computers to each other. Each computer (also known as a "node"), has its own processing unit and executes its own programs; however, it can also access data and devices anywhere on the LAN. This means that many users can access and share the same information and devices. A good example of a LAN device is a network printer. Most companies cannot afford the budgetary or hardware expense of providing printers for each of its users. Therefore, one printer (i.e., device) is placed on the LAN where every user can access the same printer. The LAN uses IP addresses to route data to different destinations on the network. An IP Address is a 32-bit numeric address written as four numbers separated by periods (For example, 1.160.10.240).

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Instructions: STEPS: Proceed with following steps to configure your LAN.

1. From your Windows Desktop, click "Start"

2. Click on “Control Panel”

3. Click on “Network and Internet Connections”

4. Click on “Local Area Connection”

5. Click “Properties” on the “Local Area Connection Status” panel.

6. You should find a check mark already in the box next to “Internet Protocol (TCP/IP)”. Double Click “Internet Protocol (TCP/IP)”.

7. Select"Obtain an IP Address automatically”

8. Select “Obtain DNS server addresses automatically”

9. Click the “OK” button

10. Click the next “OK” button

11. Close the “Network Connections” panel

Program: NA

Output:Paste appropriate screen shots here

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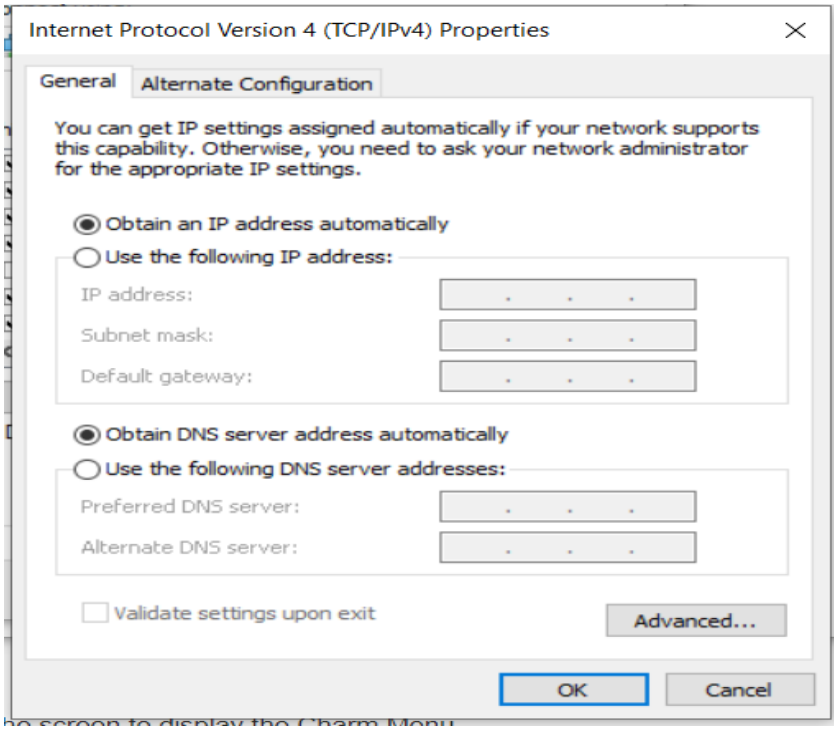

Conclusion:

A LAN (**Local Area Network)** is a network limited to an area such as a home or small business that is used to create connections between the devices. LAN settings can be configured to limit the number of devices that are connected and what IP addresses those devices will receive**.**

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Sample Viva Questions and Answers:

- **Explain LAN**

  Ans:A LAN (**Local Area Network)** is a network limited to an area such as a home or small business that is used to create connections between the devices. LAN settings can be configured to limit the number of devices that are connected and what IP addresses those devices will receive**.**

- **Explain the use of RJ-45 cable.**

  Ans:RJ45 is a type of cable connector. RJ45 is mainly used for ethernet networking which is used to connect different types of devices like a switch, hub, PC, router, to each other. RJ45 is the most known and popular connector type.

- **What are the basic requirements to configure your home network?**

  Ans: The main components required to build a typical home/small office network are:

- Router or Wireless router
- Wireless Access Point
- Ethernet HUB or Switch .
- Cable cat 5, cat5e or cat 6 with RJ45 connectors.
- Telephone Cable with RJ 10 connectors.
- Broadband Filters.

- **If you get IP address 169.254.X.X range what does it signify**?

  Ans:It means that the DHCP server is not reachable. The PC will not work because there is not a router from that PC

- **Explain APIPA (Automatic Private IP address).**

  Ans: An Automatic Private IP Addressing (APIPA), DHCP clients automatically configure an IP address and subnet mask when a DHCP server is not available. The device chooses its own IP address in the range 169.254. 1.0 through to 169.254. 254.255. The subnet mask is automatically set to 255.255**.**

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