**1. Setup a network and configure IP addressing, subnetting, masking in Linux and Windows Platform.**

**2. Study different types of network cables and practically implement the cross-wired cable and straight through cable using a Crimping tool.**

**3. Use basic networking commands in Linux (ping, tracert, nslookup, netstat, ARP, RARP, ip, ifconfig, dig, route).**

**4. Build a simple network topology and configure it for static routing protocol using packet tracer.**

**5. Perform network discovery using discovery tools (e.g., MRTG).**

**6. Use Wireshark to understand the operation of TCP/IP layers:**

**• Ethernet Layer: Frame header, Frame size etc.**

**• Data Link Layer: MAC address, ARP (IP and MAC address binding).**

**• Network Layer: IP Packet (header, fragmentation), ICMP (Query and Echo).**

**• Transport Layer: TCP Ports, TCP handshake segments etc.**

**• Application Layer: DHCP, FTP, HTTP header formats.**

**7. Configure a network using the Distance Vector Routing algorithm.**

**8. Implementation of any congestion control algorithms.**

**9. Simulation or implementation FTP.**

**10. Implementing Client-Server program using Iterative TCP server.**