Batch: SY-IT(B3) **Experiment Number:2**

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Aim of the Experiment: Fabrication of LAN cables in Computer Networks

Program/ Steps:

1. Gather the necessary tools and materials – LAN cable , RJ45 connectors, crimping tool, wire stripper, and cable tester.

2. Strip some part of the outer insulation of the LAN cable using the wire stripper.

3. Untwist and arrange the individual wires following the T568B color code sequence:

White orange

Orange

White green

Blue

White blue

Green

White brown

Brown

4. Flatten and align the wires in the correct order, ensuring they are even at the tips.

5. Cut the wires to a uniform length.

6. Insert the wires into the RJ45 connector, ensuring each wire goes into the correct slot and reaches the end of the connector.

7. Use the crimping tool to crimp the RJ45 connector onto the cable.

8. Test the cable using a cable tester to ensure all connections are working correctly.

Output/Result:

After following the steps and fabricating the LAN cable, the final result was a properly assembled LAN cable with the correct wiring configuration. Upon testing with a cable tester the cable was confirmed to be fully functional with all connections in the correct order, ensuring reliable data transmission in the network.

Post Lab Question-Answers:

1. The slowest transmission speeds are those of
    a. Twisted-pair wire
    b. Coaxial cable
    c. Fibre-optic cable
    d. Microwaves

Answer : Twisted-pair Cable.

2. Compare coaxial cable and optical fibre cable.

Coaxial Cable:

- It has a copper core surrounded by insulation and shielding, making it suitable for transmitting electrical signals.
- Coaxial cables are commonly used for cable TV and internet connections.
- They offer decent speed and reliability but are slower than optical fibre.
- Coaxial cables are more expensive than twisted-pair wires but less expensive than fiber-optic cables.

Optical Fibre Cable:

- It uses thin strands of glass or plastic to transmit data as light signals, which allows for much faster data transmission over longer distances compared to coaxial cables.
- Optical fibres are ideal for high-speed internet and large data transfers with less signal loss.
- Fiber-optic cables are the most expensive to install but offer the best performance.

Outcomes:

CO1: Understand the data communication systems, network topologies and

network devices.

Conclusion (based on the Results and outcomes achieved):

From this experiment, I learned how to practically fabricate LAN cables, which are essential for setting up computer networks. I gained hands-on experience with cutting, stripping and stripping the cables and I now understand the correct arrangement of wires. This exercise helped me grasp the importance of precision and the proper tools needed to ensure a reliable network connection.

References:

Books/ Journals/ Websites:

- Behrouz A Forouzan, Data Communication and Networking, Tata Mc Graw hill, India, 4th Edition
- A. S. Tanenbaum," Computer Networks", 4th edition, Prentice Hall