Charotar University of Science and Technology

Devang Patel Institute of Advance Technology and Research

Department of Computer Engineering

Subject: Data Communication and Networking **Semester: 3**

Subject Code: CE 257 **Academic Year: 2020-21**

Course Outcomes (COs):

After completion of the course students will be able to:

CO1	Understand and identify different physical layer transmission fundamentals such as types of signals, transmission, multiplexing, types of medium and modulation.
CO2	Evaluate existing layer-2 networking standards and implementations.
CO3	Evaluate key networking protocols, and their hierarchical relationship in the context of a conceptual model, such as the OSI and TCP/IP framework.
CO4	Understand existing different medium access protocols and evaluate for adoption for future networking.
CO5	Understand and differentiate functionality of existing network routing protocols.
CO6	Measure different network parameter such as Throughput & different types of delays.

Practical List

Sr. No.	AIM	Hrs	COs	POs	PEOs
1	Configuration, Management and Administration of various networking and Internetworking Devices. • NIC • Hub • Switch • Router • Gateway • Repeater • Bridge • Console Cable	**2**	**1**	**1,2,4,12**	**1,2**
2	Illustration of various networking commands: • Ping (types of responses) • netstat • ipconfig/ifconfig • tracert/traceroute • arp • nslookup	**2**	**2,3**	**1,2,3,4,5,12**	**1,2**

3	List different types of network cables. Create understanding of straight through and cross over cable using twisted-pair cable and RJ-45 connector.	**2**	**2**	**1,2,3,4 ,5,12**	**1,2**
4	Work on Classful Addressing in IPv4, Network Address, Broadcast Address in each Class.	**2**	**5**	**1,2,3,4 ,5,9,10 ,12**	**1,2**
5	Understand basic networking concept using Wireshark. Use of different Wireshark Display Filters.	**2**	**3**	**1,2,3,4 ,5,12**	**1,2**
6	1. Capture HTTP & ICMP Traffic using Wireshark. 2. Understand DNS packet format through captured Traffic. 3. Follow TCP/UDP Stream to look inside packet. Outcome: analyze network from given file.	**2**	**4**	**1,2,3,4 ,5,10,1 2**	**1,2**
7	Understand basic configuration (Password/Switch name/time) of Switch using Packet Tracer CLI & Actual Device. Create Star topology.	**2**	**2**	**1,2,3,4 ,5,12**	**1,2**
8	Create topology having 2 switch, 1 Router and 5 Host where router port is configured though Cisco Packet Tracer's Wizard.	**2**	**2,5**	**1,2,3,4 ,5,9,10 ,12**	**1,2**
9	Configuration of Wireless Router using CLI and create traffic in Three LAN Architecture using Cisco Packet Tracer.	**2**	**5**	**1,2,3,4 ,5,9,10 ,12**	**1,2**
10	Configuring a Cisco Router as a DHCP Server using Cisco Packet Tracer and create understanding of DHCP handshake and when it adds delay.	**2**	**5,6**	**1,2,3,4 ,5,9,10 ,12**	**1,2**
11	Configure DHCP, DNS and HTTP services using single Server in Cisco packet tracer.	**2**	**3**	**1,2,3,5 ,10,12**	**1,2**
12	Demonstrate Network tool that can measure network throughput.	**2**	**6**	**1,2,3,4 ,5,9,10 ,12**	**1,2**

Prepared By:

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