



**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: CE257**

**Academic Year: 2021-22**

### **Course Outcomes (COs):**

After completion of the course students will be able to:

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

### **Practical List**

<b>Sr. No.</b>	<b>AIM</b>	<b>Hrs</b>	<b>COs</b>
1	Illustration of various networking commands: <ul style="list-style-type: none"><li>• Ping (types of responses)</li><li>• tracert/traceroute</li><li>• Netstat</li><li>• Arp</li><li>• ipconfig/ifconfig</li><li>• nslookup</li></ul>	2	
2	An organization is having size of 10 employees. The PC of all the employees are connected with each other in a single network using a switch. Create the topology and configure the devices in such a	2	



	way that messages can be sent to each system using cisco packet tracer.		
3	Bank of Baroda at Changa has implemented the loan department. All the computers of loan department are connected in closed loop format. Create the topology and configure the devices to analyze the network in cisco packet tracer.	2	
4	An organization has configured all the systems in such a way that each system, has the direct connection to other system. Create the topology and analyze the network in cisco packet tracer.	2	
5	Bank of Baroda has implemented the new environment in which all the departments i.e. loan, cash, check is connected in a bus topology. The structure of Loan department is in closed loop format while the Cash department is in star topology. Create and configure the network architecture of bank in cisco packet tracer.	2	
6	An organization works on IT projects. It has mainly 3 departments i.e. php, .net and android. CEO of that organization wants to configure a single network but virtually divided into 3 department in such a way that the packets can travel or broadcasted within the same department only. Demonstrate the configuration of such network in cisco packet tracer.	2	
7	Demonstrate the simple network configuration with a router that connects two local area network (LAN) segments using cisco packet tracer.	2	
8	Configure the client server architecture to access the resource from HTTP Server using the domain name. Also configure the DHCP server to provide IP addresses to the PCs connected in a network using cisco packet tracer.	2	
9	Implement Client-server mechanism using socket programming in C.	2	
10	Implement cyclic redundancy check in c to understand error handling at data link layer.	2	

**Prepared By:**

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