

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul></div>								<div>SET: 1</div>			
<div><b><u>Program/Task:</u></b></div> <div><b>Network commands like Ping, IPCONFIG, and Tracert in real networks.</b></div> <div><ul style="list-style-type: none"><li>View the configuration details, including addresses, of your computers network interfaces.</li><li>Test the network connectivity between your computer and several other computers: another PC in the lab; external web servers</li><li>Using one of the publicly available websites for ping/traceroute, test the connectivity to several external websites.</li><li>Find the IP addresses of several web servers (domains), using several different DNS servers.</li><li>Find the mac address of another computer in the network</li><li>View the active TCP connections that your computer has?</li></ul></div>											
<div><b><u>Viva Questions:</u></b></div> <div>Define Network &amp; Protocol?</div> <div>What is a Link &amp; node?</div> <div>Name the factors that affect the performance of the network?</div> <div>What is Round Trip Time?</div> <div>List the layers of OSI.</div>											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul>								<div>SET: 2</div>			
<div><div><b><u>Program/Task:</u></b></div><div>Analyze Network Traffic Using Wireshark tool.</div><div>Capture the data for a Google search in your device. Analyze the following:</div><ul style="list-style-type: none"><li>Capture the outgoing or incoming frames?</li><li>Source IP address of the network-layer header in the frame</li><li>Destination IP address of the network-layer header in the frame</li><li>Total number of bytes in the whole frame</li><li>Number of bytes in the Ethernet (data-link layer) header</li><li>Number of bytes in the IP header</li><li>Number of bytes in the TCP header</li><li>Total bytes in the message (at the application layer)</li></ul></div>											
<div><div><b><u>Viva Questions:</u></b></div><div>What is meant by sniffing?</div><div>Which layers are network support layers?</div><div>List the layers of TCP/IP</div><div>What are the two types of transmission technology available in real time networks?</div><div>What is the structure of MAC address?</div></div>											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul></div>								<div>SET: 3</div>			
<div><div>Program/Task:</div><div>Implement Framing Mechanism such as chracter count in any programming language.</div></div>											
<div><div>Viva Questions:</div><div>What is Bandwidth (Hardware &amp; Software)?</div><div>What is Framing?</div><div>List Various Framing mechanisms?</div><div>What are the two sub layers of DLL?</div><div>Explain the functionalities of DLL.</div></div>											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB								Internal Lab Examination		
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022								AC Year: 2022-23		
Instructions: <ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul>									SET: 4		
<b><u>Program/Task:</u></b> Implement Framing Mechanism such as chracter stuffing in any programming language.											
<b><u>Viva Questions:</u></b> What is subnet? What is multiplexing? What is MAC Address? What is Simplex, Half-duplex & Full-duplex? What is the use of MAC layer?											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:<ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul></div>								<div>SET: 5</div>			
<div><b><u>Program/Task:</u></b> Implement Framing Mechanism such as bit stuffing in any programming language.</div>											
<div><b><u>Viva Questions:</u></b> What are the different transmission media? List the functionalities of LLC sub layer? What do you mean by redundancy? What is a Firewall? Which framing mechanism is used for variable length frames at byte level?</div>											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul>								<div>SET:</div> <div>6</div>			
<div><b><u>Program/Task:</u></b></div> <div><b>Implement CRC12 Error Detection Technique.</b></div> <div>CRC 12 : <math>x^{12} + x^{11} + x^3 + x^2 + x + 1</math></div>											
<div><b><u>Viva Questions:</u></b></div> <div>What is Repeaters ?</div> <div>Define cyclic redundancy check (CRC).</div> <div>What is the generator polynomial of data (110101)</div> <div>List the steps involved in creating the CRC.</div> <div>Compare Error Detection and Error Correction.</div>											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><div><div></div><div>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</div></div><div><div></div><div>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</div></div><div><div></div><div>There shall be no change in program.</div></div><div><div></div><div>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</div></div></div> <div>SET: 7</div>											
<div>Program/Task:</div> <div>Implement CRC16 Error Detection Technique.</div> <div>CRC 16 : <math>x^{16} + x^{15} + x^2 + 1</math></div>											
<div>Viva Questions:</div> <div>What is single bit error and burst error?</div> <div>What are the contents of DLL Trailer?</div> <div>List few protocols of DLL?</div> <div>List the use of ping command?</div> <div>What is mesh network?</div>											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul></div>								<div>SET:</div> <div>8</div>			
<div><b><u>Program/Task:</u></b></div> <div><b>Implement CRC-CCITT Error Detection Technique.</b></div> <div>CRC CCITT : <math>x^{16} + x^{12} + x^5 + 1</math></div>											
<div><b><u>Viva Questions:</u></b></div> <div>List few topologies of network?</div> <div>What is Packet switching?</div> <div>What is connection oriented network?</div> <div>What is the format of MAC Broadcast address?</div> <div>Which command is used for getting all interface address of a device?</div>											

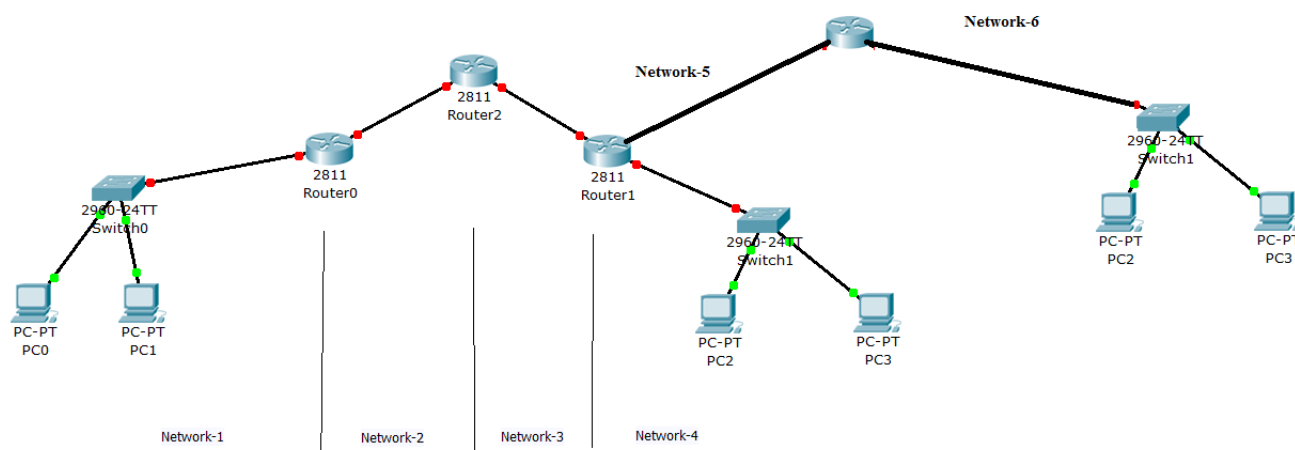


P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><div></div><div><div></div><div>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</div></div><div><div></div><div>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</div></div><div><div></div><div>There shall be no change in program.</div></div><div><div></div><div>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</div></div></div>								<div>SET:</div> <div>9</div>			

### Program/Task:

#### **Demonstrate Static Routing on Packet Tracer. (Network-1)**

#### **Scenario:**



**Network 1 & 2 ---Class A Addressing**

**Network 3--- Class B Addressing**

**Network 4,5,6 ---- Class C Addressing**

### Viva Questions:

Define Routing?

What is the structure if IPv4 address?

What is packet filter?

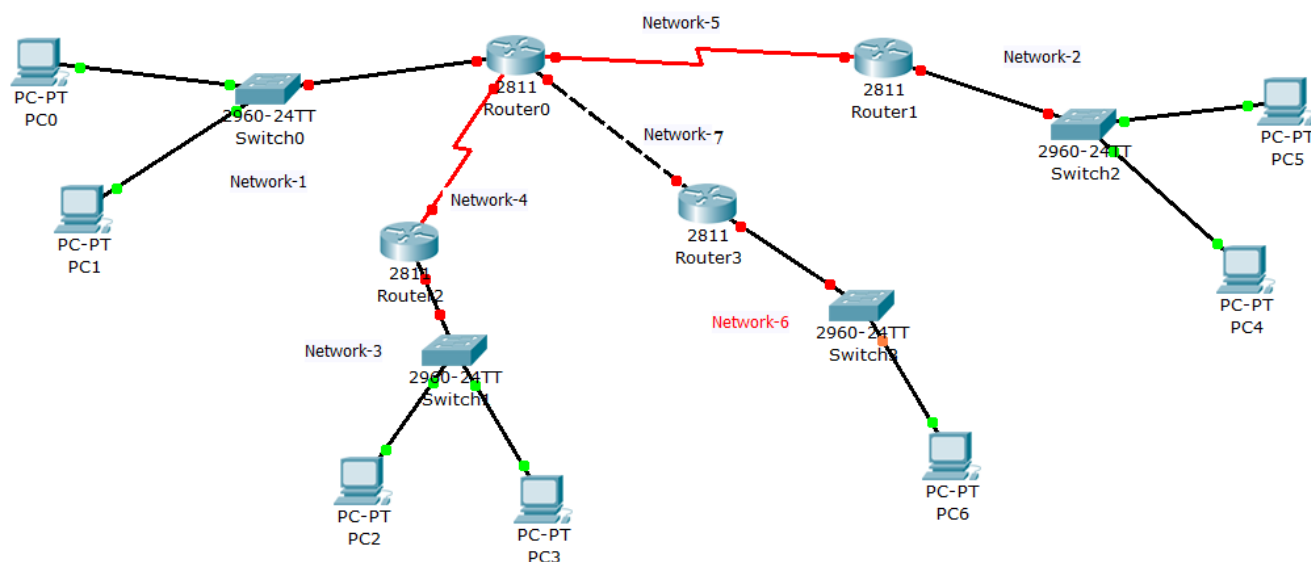
Define classfull addressing?

What is subnet mask?

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><div><div></div><div>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</div></div><div><div></div><div>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</div></div><div><div></div><div>There shall be no change in program.</div></div><div><div></div><div>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</div></div></div>								<div>SET:</div> <div>10</div>			

### Program/Task:

#### **Demonstrate Static Routing on Packet Tracer. (Network-2)**



**Network 1,3,6: Class C Addressing**

**Network 2,4,5,7: Class B Addressing**

### Viva Questions:

Differentiate Static routing v/s Dynamic Routing?

What is a gateway?

Define classless addressing?

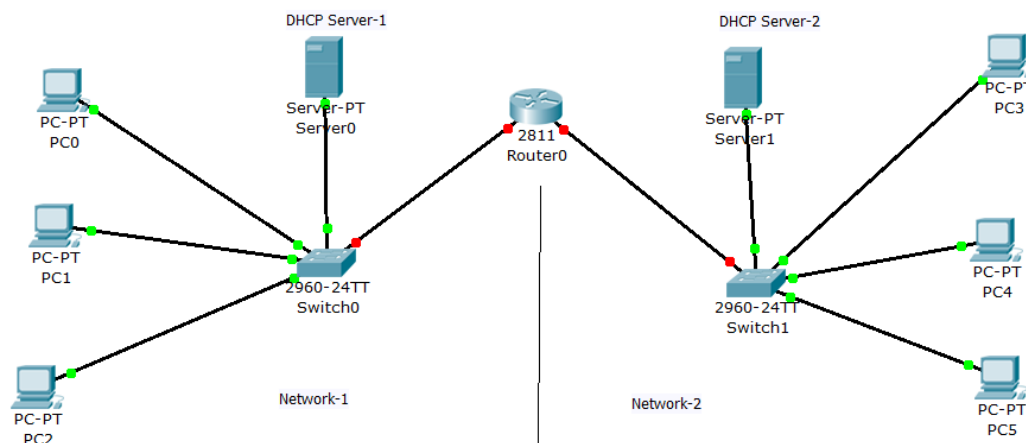
When do you tell an address is a broadcast address?

What is a stub network?

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul></div>								<div>SET:</div> <div>11</div>			

### **Program/Task:**

#### **Demonstrate Dynamic Addressing (DHCP) Mechanism on Packet Tracer.(Network-1)**



**Network-1----Class A Addressing**

**Network-2 ---- Class B Addressing**

### **Viva Questions:**

What is congestion?

What is meant by dynamic addressing?

What are the functionalities of Network layer?

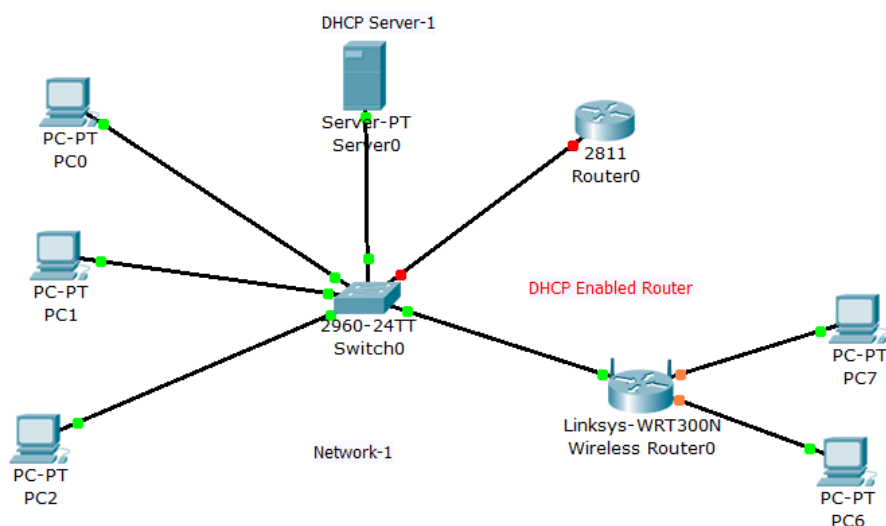
What is connectionless network?

When do you tell an address is network address?

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><div><div></div><div>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</div></div><div><div></div><div>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</div></div><div><div></div><div>There shall be no change in program.</div></div><div><div></div><div>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</div></div></div>								<div>SET:</div> <div>12</div>			

### Program/Task:

#### **Demonstrate Dynamic Addressing (DHCP) Mechanism on Packet Tracer.(Network-2)**



#### **Network-1--- Class B Addressing**

#### **Wireless router ---- Dynamic address**

#### **PC6 & PC7---Dynmic addressing by Wireless Router**

### Viva Questions:

List the classes of IPv4 addressing?

What are the various mechanisms used for handling address depletion problem in IPv4?

What are the messages exchanged between DHCP Client and DHCP Server?

How many numbers of addresses are usable for addressing in a Class C network?

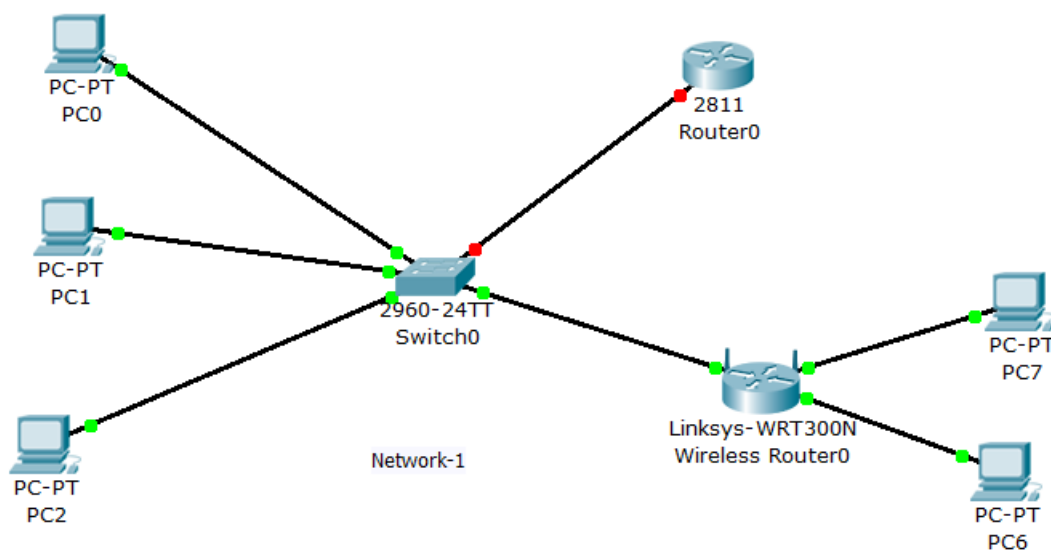
What is the unit of data in network layer?

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
Instructions: <ul style="list-style-type: none"> <li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li> <li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li> <li>There shall be no change in program.</li> <li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li> </ul>								SET:  <div>13</div>			
<b><u>Program/Task:</u></b> Implement Unicast Routing Algorithm (Distance Vector Routing) using any programming language.											
<b><u>Viva Questions:</u></b> What is a unicast routing? List the principle behind distance vector routing? List the protocols used in each and every layer of TCP/IP Network? What is Sub-netting & Super-netting? What is count to infinity problem?											

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
<div>Instructions:</div> <div><ul style="list-style-type: none"><li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li><li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li><li>There shall be no change in program.</li><li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li></ul></div>								<div>SET:</div> <div>14</div>			

### Program/Task:

**Demonstrate Network Address Translation (NAT) on Packet Tracer.(Network-1)**



**Apply NAT at Wireless Router**

### Viva Questions:

Define NAT?

What is Public & Private IP address?

When do we use straight-through cabling and cross-over cabling?

What are the categories of Transmission media?

What is the use of ARP?

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			

Instructions:

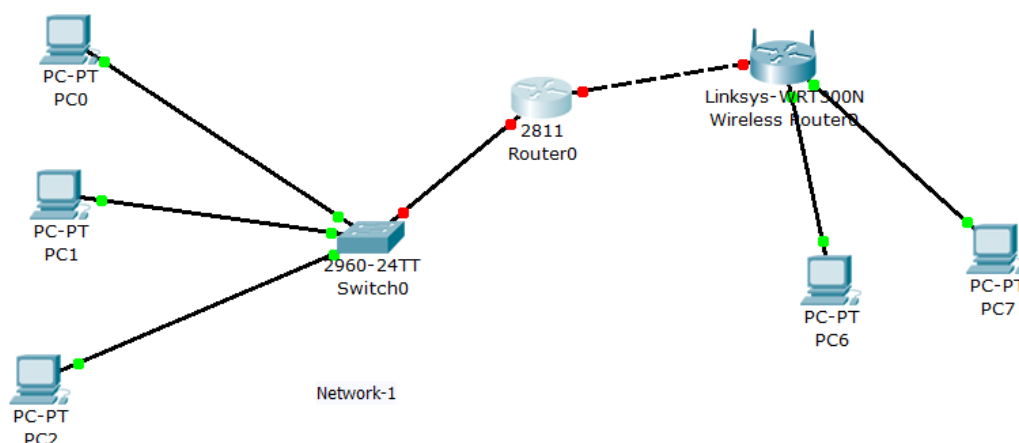
- Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.
- Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.
- There shall be no change in program.
- Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)

**SET:**

**15**

### **Program/Task:**

**Demonstrate Network Address Translation (NAT) on Packet Tracer.(Network-2)**



**Apply NAT at Wireless Router**

### **Viva Questions:**

Compare IPv4 vs IPV6 addressing?

What is Piggy Backing?

What is a router?

What is Internet protocol?

Describe various mechanisms for handling count to infinity problem?

P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER			Programme			DURATION			
Degree: B. TECH (PVP20)	III	I			B.Tech - CSE			3 HOURS			
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			

Instructions:

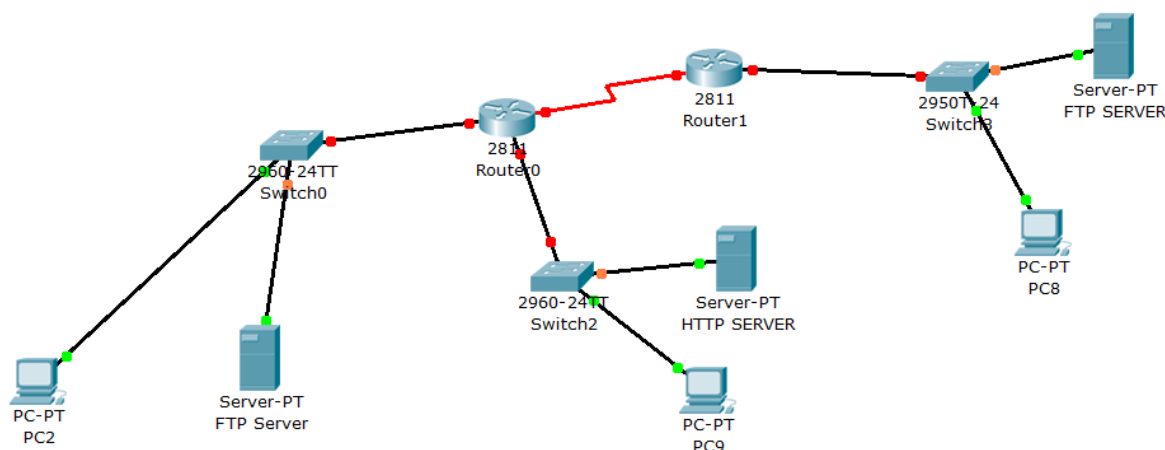
- Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.
- Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.
- There shall be no change in program.
- Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)

**SET:**

# 16

### Program/Task:

**Show the working of Application Layer Protocols(FTP, DNS, HTTP) on Packet Tracer. (Network-1)**



### Viva Questions:

List the functionalities of application layer?

What is port number?

List few application layer protocols and their well-known port numbers?

What are the protocols in transport layer?

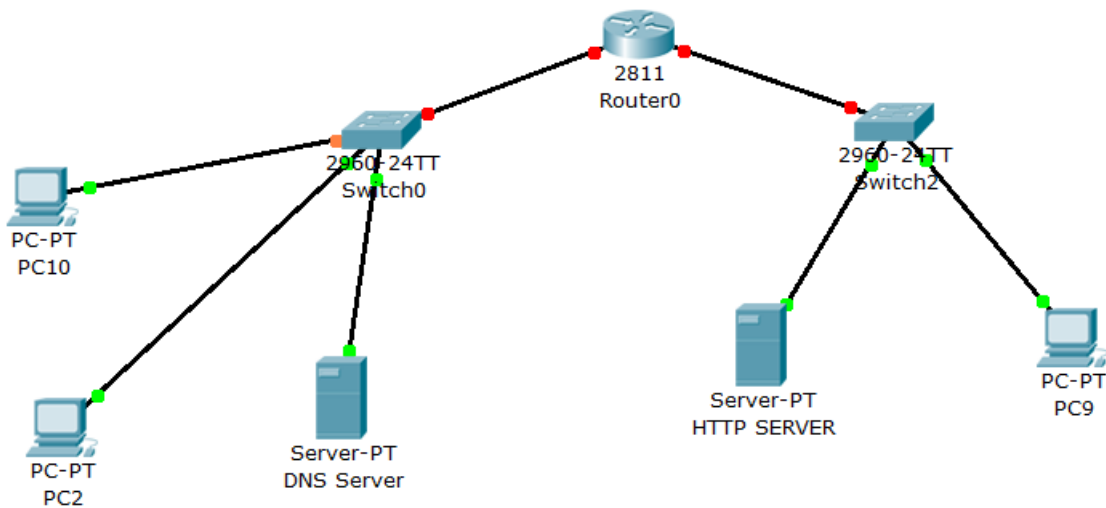
What is Network Interface Card?



P. V. P. SIDDHARTHA INSTITUTE OF TECHNOLOGY	Regd. No:			5	0		A	0	5		
	YEAR	SEMESTER				Programme			DURATION		
Degree: B. TECH (PVP20)	III	I				B.Tech - CSE			3 HOURS		
Course Code: 20CS3552	SUBJECT: COMPUTER NETWORKS LAB							Internal Lab Examination			
DEPARTMENT: CSE	DATE OF EXAM: 01-12-2022							AC Year: 2022-23			
Instructions: <ul style="list-style-type: none"> <li>Aim, Short Description/Procedure (1.5 Marks), Program/Task Steps and Result (1.5 Marks) statement has to be written for the below question.</li> <li>Write the Program legibly with comments describing each section of it. If scenario, describe each and every step with configuration parameters.</li> <li>There shall be no change in program.</li> <li>Kindly Answer the Viva Voce Questions in the script for evaluation. (2 Marks)</li> </ul>								SET:  <div>17</div>			

**Program/Task:**

**Show the working of Application Layer Protocols(FTP, DNS, HTTP) on Packet Tracer. (Network-2)**



### Viva Questions:

## How can you classify port numbers?

## What is the functionality of DNS?

### What is the use of MAC address and IP address?

## What is SSL?

### What is the use of tracer command?

