

<b>Name:</b>	 <b>UPES</b> UNIVERSITY WITH A PURPOSE
<b>Enrolment No:</b>	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**

**End Semester Examination, May 2021**

**Course: Data Communication and Computer Networks**

**Semester: IV**

**Program: B.Tech CSE**

**Time 03 hrs.**

**Course Code: CSEG2009**

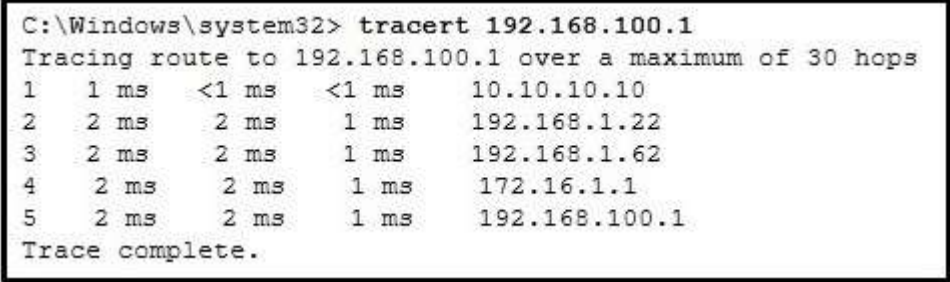
**Max. Marks: 100**

**Instructions:**

**SECTION A**

S. No.	Multiple Choice Questions	Marks	CO
Q 1	What are the services provided by POP3? a) Retrieves email from the server by downloading the email to the local mail application of the client. b) An application that allows real-time chatting among remote users. c) Allows remote access to network devices and servers. d) Uses encryption to provide secure remote access to network devices and servers.	<b>05</b>	<b>CO5</b>
Q 2	A network administrator needs to keep the user ID, password, and session contents private when establishing remote CLI connectivity with a switch to manage it. Which access method should be chosen? a) Telnet b) AUX c) SSH d) Console	<b>05</b>	<b>CO5</b>
Q 3	What are two problems that can be caused by a large number of ARP request and reply messages? (Choose two.) a) Switches become overloaded because they concentrate all the traffic from the attached subnets. b) Network may become overloaded because ARP reply messages have a very large payload due to the 48-bit MAC address and 32-bit IP address that they contain. c) A large number of ARP request and reply messages may slow down the switching process, leading the switch to make many changes in its MAC table. d) All ARP request messages must be processed by all nodes on the local network.	<b>05</b>	<b>CO3</b>
Q 4	A network administrator is adding a new LAN to a branch office. The new LAN must support 90 connected devices. What is the smallest network mask that the network administrator can use for the new network? a) 255.255.255.128 b) 255.255.255.240 c) 255.255.255.248 d) 255.255.255.224	<b>05</b>	<b>CO4</b>

Q 5	Which three layers of the OSI model map to the application layer of the TCP/IP model? (Choose three.) a) application b) network c) data link d) session e) presentation f) transport	05	CO2
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Q 6	Refer to the exhibit. Based on the output, which two statements about network connectivity are correct? (Choose two.)  a) This host does not have a default gateway configured. b) There are 4 hops between this device and the device at 192.168.100.1. c) There is connectivity between this device and the device at 192.168.100.1. d) The connectivity between these two hosts allows for videoconferencing calls. e) The average transmission time between the two hosts is 2 milliseconds.	05	CO3
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**SECTION B**

Q 1	Which two ICMPv6 messages are used in SLAAC? (Detail and explanation briefly)	10	CO4
Q 2	Which two operations are provided by TCP but not by UDP? Detail and explanation briefly about two of them.	10	CO2
Q 3	What is the purpose of the subnet mask in conjunction with an IP address?	10	CO5
Q 4	What are three parts of an IPv6 global unicast address?	10	CO4
Q 5	What are two characteristics of the application layer of the TCP/IP model?	10	CO3

**SECTION-C**

Q 1	Explain the concept of network protocols and their construction in layers. Describe all the layers of the TCP / IP stack and give one example of the protocol in each layer in the stack and give a full explanation about it. OR Explain the concept of network protocols and their construction in layers. Describe all the layers of the OSI stack. State the role of the above 3 devices, what layer they work in, and what information they process in the communication process. HUB, ROUTER, SWITCH	20	CO1
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