



UNIVERSITY COLLEGE TATI (UC TAT)

FINAL EXAMINATION QUESTION BOOKLET

COURSE CODE	: DNT 2024
COURSE	: CONNECTING TO NETWORKS
SEMESTER/SESSION	: 1-2023/2024
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 5 questions. Answer **ALL** questions.
2. All answers should be written in the answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 4 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

- a) Describe application of two-tier hierarchical design for small company. (2 marks)
- b) Explain **FOUR (4)** purpose of distribution layer in hierarchical networks.
needs of Wide Area Network (WAN) over Local Area Network (LAN). (8 marks)
- c) Define teleworking. (2 marks)
- d) Brief **TWO (2)** benefits and weaknesses of teleworking. (8 marks)

QUESTION 2

- a) There are **TWO (2)** types of WAN access, private and public. List all option in private connection with their example. (5 marks)
- b) Justify the necessity of Wide Area Network (WAN). (2 marks)
- c) Differentiate between circuit switching and packet switching. (4 marks)
- d) Produce **THREE (3)** factors in choosing an appropriate WAN connection. (6 marks)
- e) Identify **THREE (3)** facts about 3G/4G wireless WAN infrastructure. (3 marks)

QUESTION 3

- a) Describe **THREE (3)** benefits of using PPP over HDLC in a WAN (6 marks)
- b) List **THREE (3)** Point-to-Point (PPP) main component. (3 marks)
- c) Classify **THREE (3)** phases in establishing PPP session. (6 marks)
- d) Describe **FIVE (5)** features your understanding about Demarcation Point. (5 marks)

QUESTION 4

- a) Define **TWO (2)** types of IPv4 address applied in NAT (2 marks)
- b) Classify **THREE (3)** types of NAT translation. (6 marks)
- c) Justify **FOUR (4)** reasons of using NAT in network environment. (4 marks)
- d) Identify **FOUR (4)** types of addresses in NAT. (4 marks)

- e) Refer to Figure 2, write command for static route from the ISP router to the Gateway router using the assigned public network address range. (4 marks)
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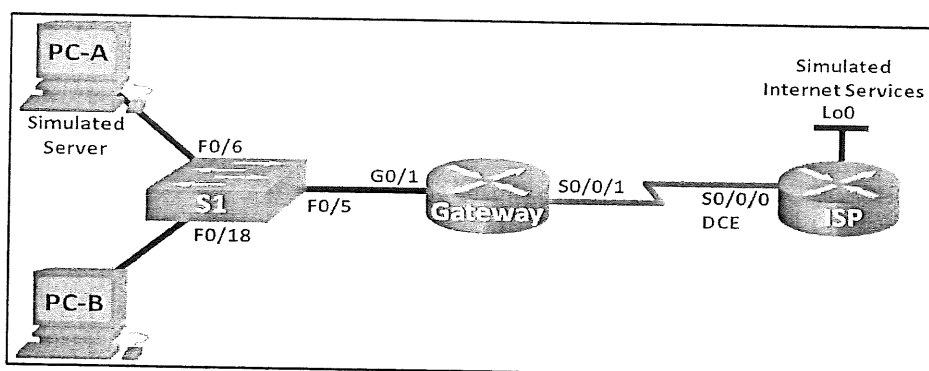


Figure 1

QUESTION 5

- a) Scenario:

You have just been recruiting a network technical person in small company that includes ten hosts with printer shared by network. You are required to set up a new network, and you discover that the connection is not working correctly. Some of the devices cannot access each other and some cannot access the printer and integrated service router (ISR) which connects to the ISP. It is your responsibility to troubleshoot and fix the problems.

Answer the following question based on the scenario given.

- i. Indicate **THREE (3)** features that should be included in network document for smooth troubleshooting. (6 marks)
 - ii. Recognize **FOUR (4)** commands to identify possible troubleshooting areas. (4 marks)
- b) Configure SNMP agent on R1 and S1 based on topology in Figure 2 and IPv4 addressing in Table 1

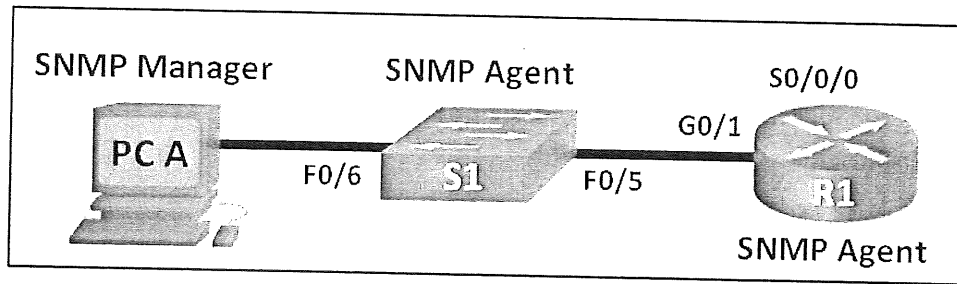


Figure 2

Table 1

Device	Interface	IP Address	Subnet Mask	Default Gateway
R1	G0/1	172.16.1.1	255.255.255.0	N/A
	S0/0/0	10.10.1.1	255.255.255.252	N/A
S1	VLAN 1	172.16.1.2	255.255.255.0	N/A
PC-A	NIC	172.16.1.3	255.255.255.0	172.16.1.1

- i. SNMP community string is "MGMT", with read-only privileges, and the named access list SNMP_ACL defines which hosts are allowed to get SNMP information from R1. (2 marks)
- ii. SNMP manager location is "SNMP_MANAGER". (2 marks)
- iii. SNMP managers contact information is "ALI". (2 marks)
- iv. SNMP manager IP address, the SNMP version "SNMPv2c", and the community string. (2 marks)
- v. Enables all default SNMP traps. (2 marks)

-----END OF QUESTIONS-----