
TNE10006 – Sample Skills Exam A

Name: _____ Student ID: _____

Sem/Year: Semester 2, 2023

Duration: 1 hour (No reading time)

Questions about the exam may only be asked during the first 10 minutes of the exam, no questions will be answered following this time.

The routers and switches have been checked to ensure that they have no pre-existing configuration and a valid IOS installed on the flash. It is your responsibility to ensure you do not erase the IOS operating system.

If you believe there to be a hardware error with the devices, determining this is part of the exam. You need to run the necessary tests on the device to confirm your suspicion before informing the Exam Supervisor. You must demonstrate how you determined there to be a Hardware error. The devices have been tested prior to the exam so an error is unlikely. If there is no hardware error you will not be granted any extra time.

Part A – Scenario

Your corporation has recently grown such that you have decided to create separate VLANs to manage the users. You have also deployed a distribution layer switch (**Curly**) in preparation for a larger network in the near future. You have opted to bundle connections between the switches to allow for greater throughput, and a router-on-a-stick solution to cut costs. There are multiple different exam papers, the specific exam paper allocated to you is circled at the bottom of this page.

NOTE:

Do not assign any passwords to your switches/router unless specifically stated within the exam paper, doing so will result in a FAIL

NOTE:

Blank pages have been provided following this page for you to write on, you **MUST** leave these pages attached to your exam script

Exam Specifics

VLAN Scheme:

A

B

C

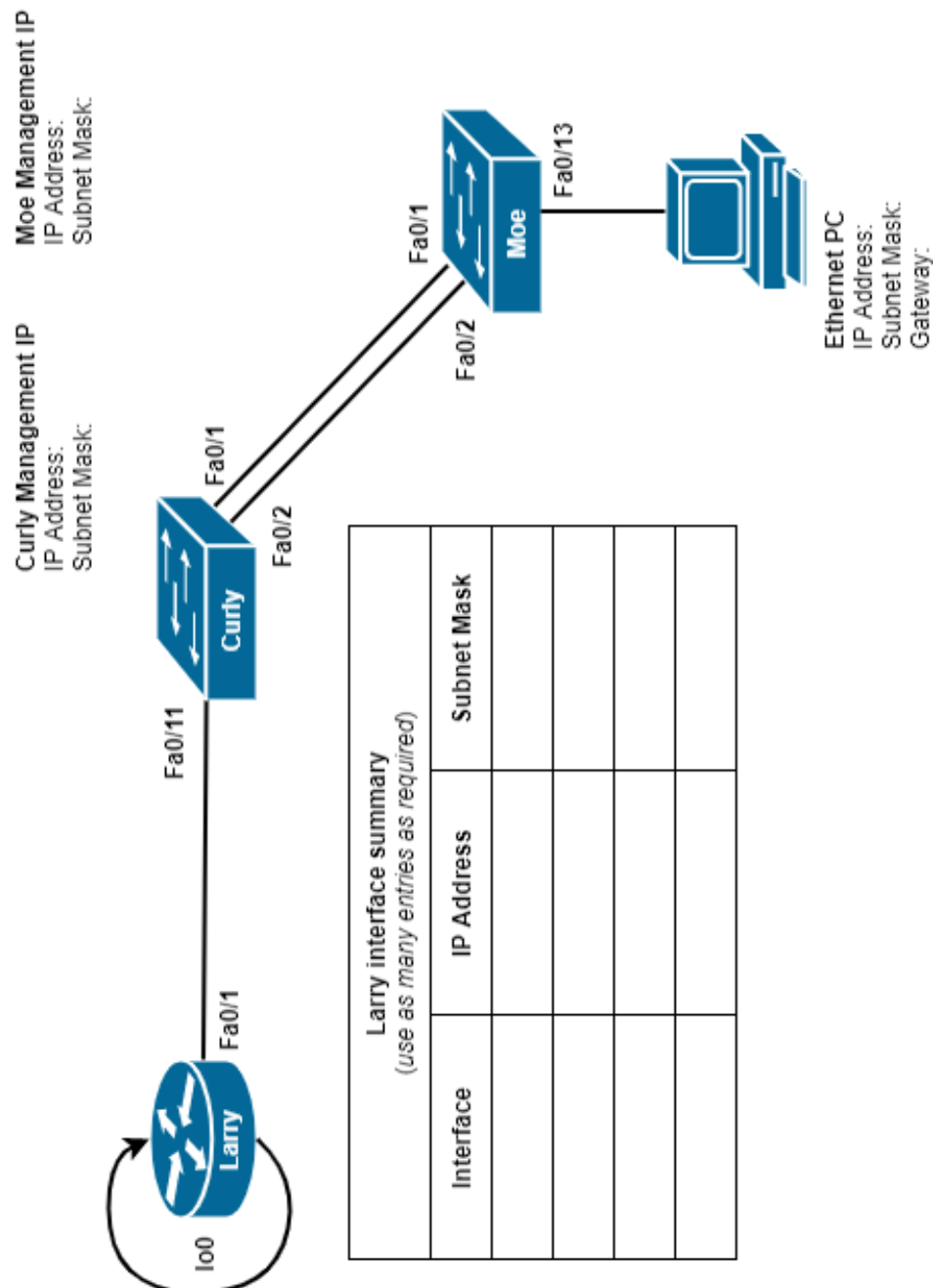
D

E

Part B – Network Drawing

The following diagram illustrates the network configuration for this Exam.

(you may wish to record IP addresses on the topology diagram)



Part C – Network Information Allocation

Select the correct subnetting scheme below based on the value circled on the front page of the exam paper

Subnetting Scheme A

	Subnet Address	VLAN Number	VLAN Name
Three:	83.174.16.0/25	5	Three
Stooges:	83.174.0.0/20	45	Stooges
Crazy:	83.174.16.128/27	278	Crazy
Management:	83.174.16.160/29	451	Management
Simulated Internet Address:	93.216.87.1/29	–	–

Subnetting Scheme B

	Subnet Address	VLAN Number	VLAN Name
Three:	83.174.0.0/18	6	Three
Stooges:	83.174.64.0/25	56	Stooges
Crazy:	83.174.64.128/26	266	Crazy
Management:	83.174.64.192/28	452	Management
Simulated Internet Address:	93.216.87.1/29	–	–

Subnetting Scheme C

	Subnet Address	VLAN Number	VLAN Name
Three:	83.174.8.0/23	7	Three
Stooges:	83.174.0.0/21	67	Stooges
Crazy:	83.174.10.0/26	254	Crazy
Management:	83.174.8.64/29	453	Management
Simulated Internet Address:	93.216.87.1/29	–	–

Subnetting Scheme D

	Subnet Address	VLAN Number	VLAN Name
Three:	83.174.0.0/19	8	Three
Stooges:	83.174.32.64/27	78	Stooges
Crazy:	83.174.32.0/26	242	Crazy
Management:	83.174.32.96/28	454	Management
Simulated Internet Address:	93.216.87.1/29	–	–

Subnetting Scheme E

	Subnet Address	VLAN Number	VLAN Name
Three:	83.174.4.128/26	9	Three
Stooges:	83.174.4.0/25	89	Stooges
Crazy:	83.174.0.0/22	230	Crazy
Management:	83.174.4.192/29	455	Management
Simulated Internet Address:	93.216.87.1/29	–	–

Router Addresses

All IP addresses allocated to the Ethernet interfaces on **Larry** **must** be the **last** useable address in the attached network. The Loopback interface **must** be assigned the address 93.216.87.1/29

Switch Management Addresses

The management IP address on **Curly** **must** be the **second-last** useable IP address in the Management subnet, and the **third-last** useable address on **Moe**. The management address **must** be configured on the **Management** VLAN.

You **MUST** configure only one management address on the switches.

Part D – Specific Device Configuration

All Devices

- Device name
- Message of the Day (include your student ID and surname in the MOTD)
- SSH access for administrative privileges using the username **sample** and the password **exam**

Larry

- Configured as a **router-on-a-stick** to route between all VLANs
- All Ethernet interfaces configured with the last useable address in allocated subnet
- Loopback interface configured with the specified address and subnet mask
- Interface descriptions on all enabled interfaces/sub-interfaces

Curly

- Switch must be configured with all VLANs
- The two links connected to Moe must be bundled into a single virtual link using Etherchannel Bundling
- Switch must be configured to become the root bridge within STP for VLANs **Three** and **Management**
- All unused ports (including gigabit ports) must be disabled

Moe

- Switch must be configured with all VLANs
- The two links connected to **Curly** must be bundled into a single virtual link using Etherchannel Bundling
- Switch must be configured to become the root bridge within STP for the VLANs **Stooges** and **Crazy**
- Switch ports **f0/3-12** and **g0/1-2** must be disabled
- Switch ports **f0/13-16** must be enabled as access ports, allocated to the **Three** VLAN and with Switchport security turned on
- Switch ports **f0/17-20** must be enabled as access ports, allocated to the Stooges VLAN and with Switchport security mode of "protect", security mode of "mac address sticky", and a maximum of 4 connected devices
- Switch ports **f0/21-24** must be enabled as access ports and allocated to the **Crazy** VLAN and with Switchport security mode of "restrict", security mode of "mac address sticky"

Part E - Testing

For a properly functioning network, you should have connectivity between all hosts on all VLANs and the router Loopback interface. You should confirm that your network functions by pinging all allocated IP addresses from all devices. IP address allocation for your PCs may be any valid address within the allocated subnet

IMPORTANT

The tests listed above are not complete and passing these tests is NOT a guarantee that you will pass your exam. You must correctly configure the devices according to instructions in this exam paper in order to pass. Testing your network is your responsibility and part of the exam. Also note that you will fail the exam if you have not configured the correct subnets on the correct interfaces, or if you have used the wrong VLAN scheme.