

MID-TERM-TEST

I.

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1)

Describe and Express models: OSI and Hybrid.

OSI MODEL

Application: Interface with users, providing network ~~protocol~~ services such as FTP, HTTP(S), SMTP

Presentation: Data format, encode/decode, compress/extract

Session: Manage session between applications, setting, maintain connection.

Transport: Ensure reliable data transmission, split and combine data, Protocol: TCP/UDP

Network: Routing data from source to target through IP address. Device such as: Router

Data link: Packing data into frame, manage MAC address, detect and fixing errors. Devices such as: Switch, Bridge

Physical: Bit data transmission via physical media such as cable, wave. Devices such as Hub, Repeater

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HYBRID MODEL

Application: Combine OSI's Application, Presentation and Session layers. Manage high level protocol, data representation, encode, encryption and session management. Protocol such as HTTP, NFS, FTP, SMTP
Transport: Ensure reliable data transfer, error checking and flow control. Protocol: TCP, UDP

Network: Manage logical addressing and routing. Protocol such as IP, ICMP, ARP

Link: Packing data into frame, manage MAC address, detecting and fixing errors.

Physical: Transfer bit through physical environment such as wave, cable

COMPARE

	OSI Model	Hybrid Model
Structure	7 layers	Combine
Flexibility	Complex	Balance
Usage	Research/Learning	Reality
Application	less usage	Modern Network.

II.

Part 1:

```

MLS>enable
MLS#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
MLS(config)#interface g0/2
MLS(config-if)#
MLS(config-if)#no switchport
MLS(config-if)#i
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/2, changed state to up

% Ambiguous command: "i"
MLS(config-if)#ip address
MLS(config-if)#ip address 209.165.200.225 255.255.255.252
MLS(config-if)#no shutdown
MLS(config-if)#
MLS(config-if)#
MLS(config-if)#exit
MLS(config)#
MLS(config)#exit
MLS#
%SYS-5-CONFIG_I: Configured from console by console

MLS#ping 209.165.200.226

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 209.165.200.226, timeout is 2 seconds:

MLS#!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 0/0/0 ms

MLS#

```

Part 2:

Step 1:

```

MLS#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
MLS(config)#vlan 10
MLS(config-vlan)#name Staff
MLS(config-vlan)#exit
MLS(config)#vlan 20
MLS(config-vlan)#name Student
MLS(config-vlan)#exit
MLS(config)#vlan 30
MLS(config-vlan)#name Faculty
MLS(config-vlan)#exit
MLS(config)#vlan 30
MLS(config-vlan)#name Faculty
MLS(config-vlan)#exit
MLS(config)#

```

Step 2:

```

MLS(config)#interface vlan 10
MLS(config-if)#
%LINK-5-CHANGED: Interface Vlan10, changed state to up

MLS(config-if)#ip address 192.168.10.254 255.255.255.0

```



```

MLS(config)#
MLS(config)#interface vlan 10
MLS(config-if)#ip address 192.168.10.254 255.255.255.0
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (99), with S1
GigabitEthernet0/1 (1).

MLS(config)#interface vlan 20
MLS(config-if)#ip address 192.168.20.254 255.255.255.0
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#
%LINK-5-CHANGED: Interface Vlan20, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan20, changed state to up

MLS(config)#interface vlan 30
MLS(config-if)#ip address 192.168.30.254 255.255.255.0
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#
%LINK-5-CHANGED: Interface Vlan30, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan30, changed state to up

MLS(config)#vlan 99
MLS(config-vlan)#name Management
MLS(config-vlan)#exit
MLS(config)#interface vlan 99
MLS(config-if)#ip address 192.168.99.254 255.255.255.0
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#
%LINK-5-CHANGED: Interface Vlan99, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan99, changed state to up

```

Step 3&4:

```

MLS(config)#
MLS(config)#interface g0/1
MLS(config-if)#switchport trunk encapsulation dot1q
MLS(config-if)#switchport mode trunk

MLS(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to down

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan10, changed state to up

MLS(config-if)#switchport trunk native vlan 99
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#

```

Step 5:

```

GigabitEthernet0/1 (1).

MLS(config)#ip routing
MLS(config)#show ip route
      ^
% Invalid input detected at '^' marker.

MLS(config)#exit
MLS#
%SYS-5-CONFIG_I: Configured from console by console

MLS#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

C      192.168.10.0/24 is directly connected, Vlan10
C      192.168.20.0/24 is directly connected, Vlan20
C      192.168.30.0/24 is directly connected, Vlan30
C      192.168.99.0/24 is directly connected, Vlan99
      209.165.200.0/30 is subnetted, 1 subnets
C          209.165.200.224 is directly connected, GigabitEthernet0/2

```

Step 6:

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2

Pinging 192.168.10.2 with 32 bytes of data:

Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time=7ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 7ms, Average = 1ms

```

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.20.2

Pinging 192.168.20.2 with 32 bytes of data:

Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time<1ms TTL=128
Reply from 192.168.20.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

```

```
Cisco Packet Tracer PC Command Line 1.0
```

```
C:\>ping 192.168.30.2
```

```
Pinging 192.168.30.2 with 32 bytes of data:
```

```
Reply from 192.168.30.2: bytes=32 time<1ms TTL=128
```

```
Reply from 192.168.30.2: bytes=32 time<1ms TTL=128
```

```
Reply from 192.168.30.2: bytes=32 time=1ms TTL=128
```

```
Reply from 192.168.30.2: bytes=32 time<1ms TTL=128
```

```
Ping statistics for 192.168.30.2:
```

```
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

```
Approximate round trip times in milli-seconds:
```

```
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
S3(config)#exit
```

```
S3#
```

```
%SYS-5-CONFIG_I: Configured from console by console
```

```
S3#ping 192.168.99.2
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 192.168.99.2, timeout is 2 seconds:
```

```
..!!!
```

```
Success rate is 60 percent (3/5), round-trip min/avg/max = 0/0/0 ms
```

```
GigabitEthernet0/1 (1).
```

```
MLS#ping 209.165.200.226
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 209.165.200.226, timeout is 2 seconds:
```

```
!!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/0/0 ms
```

Part 3:

Step 1:

```
MLS#configure terminal
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
MLS(config)#ipv6 unicast-routing
```

Step 2:

```
MLS(config)#interface
```

```
MLS(config)#interface vlan 10
```

```
MLS(config-if)#ipv6 address 2001:db8:acad:10::1/64
```

```
MLS(config-if)#no shutdown
```

```
MLS(config-if)#exit
```

```
MLS(config)#
```

```
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (99), with S1  
GigabitEthernet0/1 (1).
```

Step 3:


```

MLS#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
MLS(config)#ipv6 unicast-routing
MLS(config)#interface vlan 10
MLS(config-if)#ipv6 address 2001:db8:acad:10::1/64
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#interface vlan 20
MLS(config-if)#ipv6 address 2001:db8:acad:20::1/64
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#interface vlan 30
MLS(config-if)#ipv6 address 2001:db8:acad:30::1/64
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#interface gigabitEthernet 0/2
MLS(config-if)#ipv6 address 2001:db8:acad:a::1/64
%GigabitEthernet0/2: Error: 2001:DB8:ACAD:A::/64 is overlapping with 2001:DB8:ACAD:A::/64 on Vlan10
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#
MLS#
%SYS-5-CONFIG_I: Configured from console by console

MLS#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (99), with S1 GigabitEthernet0/1 (1).

MLS#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (99), with S1 GigabitEthernet0/1 (1).

MLS#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (99), with S1 GigabitEthernet0/1 (1).

MLS# t configure
MLS#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
MLS(config)#interface vlan 10
MLS(config-if)#no ipv6 address 2001:db8:acad:a::1/64
MLS(config-if)#ipv6 address 2001:db8:acad:10::1/64
MLS(config-if)#exit
MLS(config)#interface gigabitEthernet 0/2
MLS(config-if)#ipv6 address 2001:db8:acad:a::1/64
MLS(config-if)#no shutdown
MLS(config-if)#exit
MLS(config)#
%CDP-4-NATIVE_VLAN_MISMATCH: Native VLAN mismatch discovered on GigabitEthernet0/1 (99), with S1 GigabitEthernet0/1 (1).

```

```

MLS#show ipv6 route
IPv6 Routing Table - 5 entries
Codes: C - Connected, L - Local, S - Static, R - RIP, B - BGP
        U - Per-user Static route, M - MIPv6
        I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
        ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
        O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
        ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
        D - EIGRP, EX - EIGRP external
C   2001:DB8:ACAD:A::/64 [0/0]
    via ::, Vlan10
L   2001:DB8:ACAD:A::1/128 [0/0]
    via ::, Vlan10
C   2001:DB8:ACAD:10::/64 [0/0]
    via ::, Vlan10
L   2001:DB8:ACAD:10::1/128 [0/0]
    via ::, Vlan10
L   FF00::/8 [0/0]
    via ::, Null0
MLS#

```

RESULT CHECK:

Cisco Packet Tracer - C:\Users\hung\Downloads\Temp\4.3.8-packet-tracer---configure-layer-3-switching-and-inter-vlan-routing-VTP.pka - HuuDuc - 2025-03-10 10:06:02

FileEditOptionsViewToolsExtensionsWindowHelp

Activity Results

Time Elapsed: 00:36:53

You did not complete the activity. Please close this window and try again.

Overall FeedbackAssessment ItemsConnectivity Tests

Expand/Collapse AllShow Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
MLS				
Ports				
GigabitEthernet0/1				
Native VLAN	Correct	1	Switching	
Port Mode	Correct	1	Other	
GigabitEthernet0/2				
(deprecated) IPv6 Addresses				
2001:DB8:ACAD:A::1				
IP Address	Correct	1	IPv6	
Prefix Length	Correct	1	IPv6	
IP Address	Correct	1	Ip	
Subnet Mask	Correct	1	Ip	
SwitchPort	Correct	1	Other	
Vlan10				
(deprecated) IPv6 Addresses				
2001:DB8:ACAD:10::1				
IP Address	Correct	1	IPv6	
Prefix Length	Correct	1	IPv6	
IP Address	Correct	1	Ip	
Vlan20				
(deprecated) IPv6 Addresses				
2001:DB8:ACAD:20::1				
IP Address	Correct	1	IPv6	
Prefix Length	Correct	1	IPv6	
IP Address	Correct	1	Ip	
Vlan30				
(deprecated) IPv6 Addresses				
2001:DB8:ACAD:30::1				
IP Address	Correct	1	IPv6	
Prefix Length	Correct	1	IPv6	
IP Address	Correct	1	Ip	
Vlan99				
IP Address	Correct	0	Other	
Routes				
IP Routing	Correct	1	Routing	
Routesv6				
IPv6 Unicast Routing	Correct	1	Routing	
VLANs				
VLAN 10				
VLAN Name	Correct	1	Switching	
VLAN 20				
VLAN Name	Correct	1	Switching	
VLAN 30				
VLAN Name	Correct	1	Switching	
S1				

Score: 22/24

Item Count: 22/24

Component	Items/Total	Score
IPv6	8/8	8/8
Ip	6/6	6/6
Other	2/3	2/3
Routing	2/2	2/2
Switching	4/5	4/5

Close