



Exam 1: Network Redundancy Part 1

Due Feb 16 at 2:30pm Points 100 Questions 21

Available Feb 16 at 12:30pm - Feb 16 at 2:30pm 2 hours

Time Limit 50 Minutes

Instructions

This is an individual, **closed-book** exam. Access to any course and online materials as well as any form of communication with others aside from the instructor while taking the exam is not allowed. Take note that your actions are logged while taking the exam and any excessive switching of pages in your browser will be flagged.

Once you begin, you will be given 40 minutes to complete the exam.

Read the questions carefully and select the best answer/s among the given choices.

Reminder: Practice academic honesty. Any student who is determined to have copied or shared answers will automatically be given a 0 for this exam and for the entire course.

This quiz was locked Feb 16 at 2:30pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	13 minutes	90 out of 100

⚠️ Correct answers are no longer available.

Score for this quiz: **90** out of 100

Submitted Feb 16 at 12:59pm

This attempt took 13 minutes.

Question 1

In a PVST+ implementation, what does a switch priority value of 32768 indicate?

- ☐ It is a switch with a priority value of 32768
- ☐ It is a switch that will automatically be elected as the root bridge
- ☒ It is a switch that is using the default priority value for a spanning tree
- ☐ It is the switch that is assigned priority 32768

Send

Question 2

0 / 8 pts

Which among the following are common characteristics between PVST+ and Rapid PVST+? Choose 3

- ☐ Both assign the non-designated role to ports that need to block traffic
- ☐ Both are open standard protocols
- ☒ Both support one spanning tree instance per VLAN
- ☐ Both rely on timers to transition from one port state to another
- ☒ Both elect the switch with the lowest BID as the root bridge
- ☒ Both utilize the root and designated port roles

Question 3**3 / 3 pts**

What happens when an EtherChannel member port is set to 'On' mode?

☒

It is forced into channeling without sending or responding to PAgP/LACP negotiation messages

☐

It will respond to PAgP/LACP frames only if the opposite port is also set to 'On'

☐

It will form a working link if the opposite port is set to Desirable or Active mode

☐

It allows a port to work compatibly with other ports in the bundle regardless if using PAgP or LACP

Question 4**4 / 4 pts**

What advantages does link aggregation provide to a network?
Choose 2

☒

It provides a redundant link between the same pair of switches

☐

It enables the switch to automatically determine which ports are compatible for bundling



It prevents ports from participating in STP and thus avoid being blocked



It provides increased bandwidth without the need to acquire new equipment

Question 5

6 / 6 pts

Which among these must be consistent across all ports that will be bundled together to form an EtherChannel? Choose 3



VLAN membership



STP port priority



Speed



DTP mode

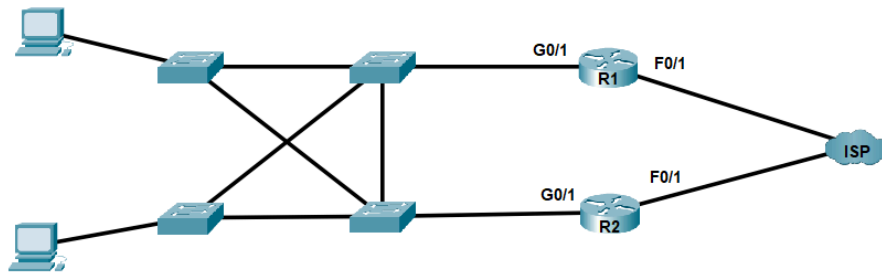


Port security setting

Question 6

3 / 3 pts

A network with the following topology has a pair of links to an ISP in order to provide redundancy for its users' internet connection with R1 and R2 serving as gateways of the network hosts. The network must provide automatic gateway selection in case of router failure in the network. At the same time, since the ISP connections are considered critical links, the active gateway must be selected according to the status of the ISP link. What is the correct way of configuring HSRP on this network?



In case image does not load, click [here](#) ↓

- ☐ Configure HSRP on R1 and R2 G0/1; track R1 and R2 G0/1.
- ☒ Configure HSRP on R1 and R2 G0/1; track R1 and R2 F0/1.
- ☐ Configure HSRP on R1 and R2 F0/1; track R1 and R2 F0/1.
- ☐ Configure HSRP on R1 and R2 F0/1; track R1 and R2 G0/1.

Question 7

3 / 3 pts

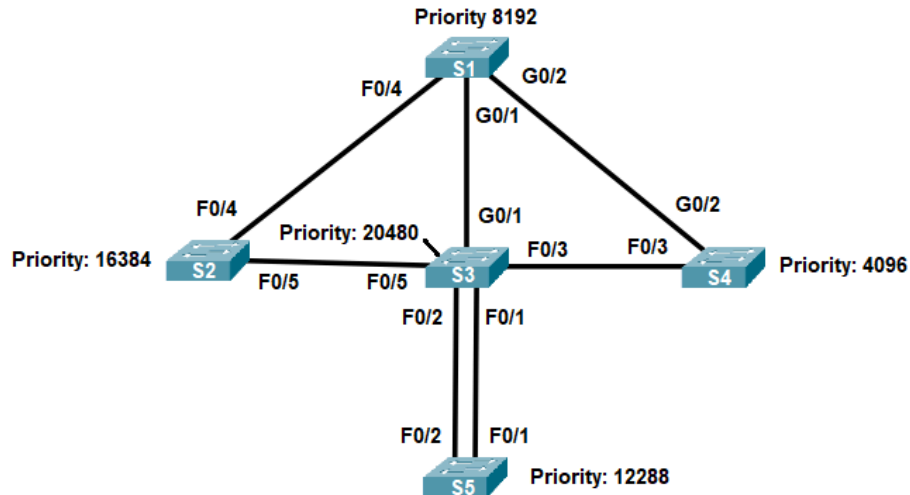
In which among the following scenarios would STP be blocking switch ports in a network?

- ☐ 2 access mode links, each assigned to a different VLAN, connecting 2 switches
- ☐ In redundant trunk links bundled as an EtherChannel between 2 switches
- ☒ Redundant trunk links between access switches and layer 2 distribution switches
- ☐ A network with multiple routers serving as gateways

Question 8

6 / 6 pts

Answer the following questions based on the topology below:



If image does not load, click [here](#) ↓

Assuming a stable topology based on the spanning tree algorithm:

1. Which switch is the root bridge? S4
2. Which port will be the root port of S3? G0/1
3. What is the port role of S5 F0/2 Non designated port

Answer 1:

S4

Answer 2:

G0/1

Answer 3:

Non designated port

Question 9

10 / 10 pts

Determine if the following statements regarding STP are true or false

1. All switches except the root bridge have only 1 root port True
2. By default, the cost of individual links is based on link bandwidth True
3. On a link that needs to block traffic, the switch ports on both ends of the link will both take the Non-designated / Alternate role False
4. A spanning tree may have multiple root bridges if there are switches of equally lowest assigned bridge priority False
5. On a switch, all forwarding ports that are not selected as root port are assigned the Designated port role True

Answer 1:

True

Answer 2:

True

Answer 3:

False

Answer 4:

False

Answer 5:

True

Question 10

3 / 3 pts

Which among these best describes what happens to a LAN host when the active router in an HSRP group fails?



The LAN host is not affected due to the gateway switchover being transparent to it



The LAN host is notified by the standby router to change its default gateway setting



The LAN host receives a gratuitous ARP reply to remap its ARP table entry for the default gateway to the new active router



The LAN host issues an ARP Request to find the new active router when it stops receiving HSRP Hello packets from the active router

Partial

Question 11**4 / 6 pts**

Which among the following are TRUE regarding HSRP operations?
Choose 3



The router with the lowest priority setting will be assigned the active role



All routers in an HSRP group must assign the virtual address as the IP address of their individual physical interfaces



A loss of HSRP hello packets from the active router will trigger an election regardless if HSRP members are set to preempt or not



An HSRP group can have only 1 standby router at a time



Lowering the HSRP timers allows the network to more quickly detect and adjust to a gateway failure

Incorrect

Question 12

0 / 3 pts

A network administrator has configured an EtherChannel by bundling 3 trunk links that connect a pair of switches. If the administrator changes the speed setting of one of the physical interfaces in the bundle, what happens to the EtherChannel?



The entire etherchannel automatically changes to the new speed and continues functioning



The physical interface with the modified speed will be excluded from the bundle; while the other 2 continue functioning in the bundle



The entire bundle is brought down because of inconsistent port settings



The switch OS flags it as an error and will prevent the administrator from individually changing the settings of ports included in a bundle

Partial

Question 13

6 / 8 pts

Two switches, S1 and S2 are connected to each other using a set of redundant links. Assuming all links are configured to be part of the same port channel and have compatible settings, determine whether

the following port combinations will result in a working EtherChannel between S1 and S2:

1. S1 ports = active; S2 ports = passive --> Yes

2. S1 ports = on; S2 ports = on -->

[Select]



3. S1 ports = auto; S2 port = auto -->

[Select]



4. S1 ports = auto; S2 ports = desirable -->

[Select]



Answer 1:

Yes

Answer 2:

Yes

Answer 3:

No

Answer 4:

Yes

Question 14

4 / 4 pts

Three routers are currently in a HSRP group with the following assigned priorities, roles and capabilities:

Router	Priority	Role	Preemption Enabled
R1	150	Standby	No
R2	100	Active	Yes
R3	50	Other	No

A router R4 is added to the group with priority 200 WITHOUT preemption enabled. After R4 is added,

- which router will be the active router? R2
- which router will be the standby router? R1

Answer 1:

R2

Answer 2:

R1

Question 15

3 / 3 pts

Which among these is the primary reason for enabling the Portfast feature on a switch interface

- ☐ It improves port performance by increasing its bandwidth
- ☐ It prevents the port from accepting STP BPDU if another switch is accidentally connected
- ☐ It shortens the STP timers of the port to allow it to transition through the listening and learning states more quickly
- ☒ It allows the port to go immediately into forwarding state for faster host connectivity

Question 16

8 / 8 pts

Identify which HSRP router roles are being described by the following statements:

1. A router that multicasts HSRP Hello packets but does not perform packet forwarding Standby Router
2. The default gateway setting to be configured on network hosts Virtual Router
3. A router that remains in the Listen state after an HSRP election concludes Other Router
4. The router that wins an election in an HSRP group Active Router

Answer 1:

Standby Router

Answer 2:

Virtual Router

Answer 3:

Other Router

Answer 4:

Active Router

Question 17

3 / 3 pts

When a switch has multiple equal cost paths to the root bridge, what will be its basis for selection of its root port?

☒ Port connected to the upstream switch with lowest BID

☐ Port connected to the upstream switch with highest BID

☐ Port connected to the upstream switch port with lowest port priority



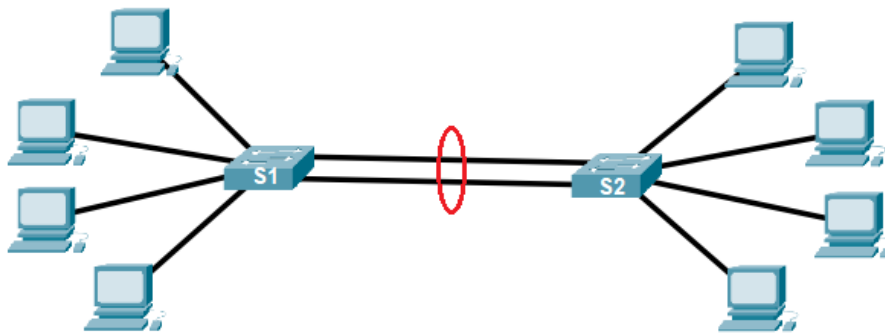
Port connected to the upstream switch port with highest port priority

Incorrect

Question 18

0 / 3 pts

The following image shows the topology of a network with 2 switches using an Etherchannel for connectivity. All hosts connected to S1 regularly communicate with any host on S2.



*If image does not load, click [here](#) ↓

When configured on S1, which among the following load balancing schemes can result in efficient load distribution among the bundled links?



Source IP



Destination IP



Source and destination MAC



Any of these

Question 19

6 / 6 pts

The 'show standby brief' command issued on a router produces the following result.

```
R1#sh standby brief
```

P indicates configured to preempt.

Interface IP	Grp	Pri	P	State	Active	Standby	Virtual
Gig0/0 8.1.254	1	100		Listen	192.168.1.1	192.168.1.3	192.16

Assuming no ongoing HSRP election, which of the statements below correctly describes the current HSRP operations in the network? Choose 3.

☒ The router forwarding packets in the network is 192.168.1.1

☐ There are only 2 routers in the HSRP group

☒ R1 is neither the active nor standby router in the network

☐ R1 is capable of forcing an election in the HSRP group



If R1 G0/0 goes down, R1 will automatically decrease its HSRP priority

☒ R1 G0/0 is a member of HSRP group 1

Question 20

3 / 3 pts

Which among the following is a non-proprietary protocol used to set up automatic gateway failure recovery in a LAN with redundant routers by assigning one router to perform actual forwarding of packets in the network and another to serve as backup gateway in case the forwarding router fails?

☐ Hot Standby Router Protocol

☐ Gateway Load Balancing Protocol

☒ Virtual Router Redundancy Protocol

☐ First Hop Redundancy Protocol

Question 21

6 / 6 pts

Which among the following statements correctly describe the LACP Etherchannel management protocol? Choose 3

☐ It will work only if channeling between 2 Cisco switches



It automatically bundles ports that have compatible settings to form an Etherchannel



It will work when channeling between switches from different vendors



Its ports must be set to desirable mode to initiate channeling



Its ports must be set to passive mode to allow but not initiate channeling

Quiz Score: **90** out of 100

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Submission Details:

Time: 13 minutes

Current Score: 90 out of 100

Kept Score:

90 out of 100
