

**4A0-107.78q**

Number: 4A0-107  
Passing Score: 800  
Time Limit: 120 min

**4A0-107**



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**Nokia Quality of Service**

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## Exam A

### QUESTION 1

Which of the following are major components of QoS functionality on the Nokia 7750 SR? (Choose three)

- A. Microflow reservations using RSVP
- B. DSCP to EXP translation
- C. Traffic classification
- D. Automatic profiling and policy configuration
- E. Buffer memory management
- F. Traffic scheduling

**Correct Answer:** CEF

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 2

Which of the following are characteristics of 802.1p? (Choose two)

- A. 802.1p adds 16 bits to the Layer 2 header,
- B. 802.1p adds 16 bits to the Layer 3 header.
- C. 802.1p specifies 64 different priority levels.
- D. 802.1p uses a field in the 802.1Q header.
- E. 802.1p uses a field in the Layer 3 IP header
- F. 802.1p defines a 3-bit Class of Service field.

**Correct Answer:** DF

**Section:** (none)



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### **Explanation**

### **Explanation/Reference:**

### **QUESTION 3**

Which of the following BEST describes a SAP when regarding QoS?

- A. A point in the network where EXP bits can be mapped to one of eight predefined FCs, each one with its own queue.
- B. A logical point in a service tunnel where all of customer traffic is aggregated.
- C. A point at which the initial classification of customer traffic occurs.
- D. A point in the network where QoS parameters are discarded in favor of lower-level hardware queuing functions, such as LLI (Link Layer Interleave).
- E. A point in the network where traffic flows from multiple different services are queued together, based on forwarding class.

**Correct Answer:** C

**Section:** (none)

### **Explanation**

### **Explanation/Reference:**

### **QUESTION 4**

Individual application streams are considered microflows, whereas \_\_\_\_\_ are considered macroflows.

- A. SAPs
- B. SDPs
- C. Services
- D. Queues
- E. Schedulers
- F. Forwarding classes

**Correct Answer:** F

**Section:** (none)

### **Explanation**

### **Explanation/Reference:**

### **QUESTION 5**

Which of the following are possible criteria for classifying packets at the network port ingress on the Nokia 7750 SR? (Choose three)

- A. The EXP bits in the MPLS header.
- B. The packet's source and destination IP addresses.
- C. The packet's DSCP bits.
- D. The dot1p bits in the frame header.
- E. The ID of an SDP that is transporting the packet.

**Correct Answer:** ACD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 6**

A default network policy is applied to all router interfaces associated with network ports.

- A. TRUE
- B. FALSE

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 7**

Which of the following are NOT ingress matching criteria for a network policy? (Choose two)

- A. TCP port numbers
- B. LSP EXP
- C. DSCP
- D. Source and destination IP addresses
- E. Dot1p priority

**Correct Answer:** AD

Section: (none)

Explanation

Explanation/Reference:

#### QUESTION 8

Click the exhibit button below. A partial SAP-ingress policy configuration is shown below. A UDP video stream is sent to a PC with IP address 192.168.1.100. Given the SAP-ingress policy, to which forwarding class is the traffic matched?

```
A:srl1a>config>qos>sap-ingress# info detail
-----
---- output omitted -----
      ip-criteria
        entry 10 create
        match dst-ip 192.168.1.99/32
        exit
        action fc "af"
      exit
      entry 20 create
      match protocol udp
      exit
      action fc "ef"
    exit
    entry 30 create
    match protocol udp
      dst-ip 192.168.1.100/32
    exit
    action fc "h2"
  exit
  entry 40 create
  match protocol icmp
  exit
  action fc "h1"
exit
default-fc "be"
-----
```

- A. AF
- B. EF
- C. H2
- D. H1
- E. BE

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 9**

On a Nokia IOM 3, how is buffer memory allocated per forwarding complex?

- A. 512 MB ingress, 512 MB egress
- B. 256 MB ingress, 256 MB egress
- C. 1 GB dynamically allocated between ingress and egress.
- D. 768 MB dynamically allocated between ingress and egress.
- E. 768 MB, with a minimum of 256 MB ingress and egress, and an additional 256 MB dynamically allocated.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 10**

WRED can be used to help avoid TCP slow-start synch problems.

- A. TRUE
- B. FALSE

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 11**

What is the maximum number of forwarding subclasses a forwarding class can have?

- A. 3
- B. 64
- C. 72
- D. 16
- E. 56

**Correct Answer:** E

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 12**

Click the exhibit button below. Given the output of the `#show pools 1/2/2 network-egress` command on a GigE port, what can the service provider deduce? (Choose two)

A:srla>config# show pools 1/2/2 network-egress

=====  
Pool Information  
=====

Port : 1/2/2  
Application : Net-Egr Pool Name : default  
Resv CBS : Sum  
-----

-----  
Utilization State Start-Avg Max-Avg Max-Prob  
-----

High-Slope Down 70% 90% 80%  
Low-Slope Up 10% 50% 80%

Time Avg Factor : 7  
Pool Total : 20480 KB  
Pool Shared : 12288 KB Pool Resv : 8192 KB

Pool Total In Use : 704 KB  
Pool Shared In Use : 192 KB Pool Resv In Use :  
512 KB  
WA Shared In Use : 1 KB

Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob : 0  
-----

FC-Maps MBS Depth A.CIR A.PIR  
CBS O.CIR O.PIR  
-----

be 12	192	190	0	1000000
	0		0	Max
af	10240	456	250000	1000000
	1792		250000	Max
l1	5120	0	250000	1000000
	512		250000	Max
h2	10240	0	1000000	1000000
	1792		Max	Max
ef	10240	0	1000000	1000000
	1792		Max	Max
h1	512	0	100000	10000
	512		100000	10000
nc	5120	0	100000	1000000
	512		100000	Max



- A. QoS is not configured on the router.
- B. Packets in forwarding classes "be" and "12" are being queued.
- C. Traffic belonging to forwarding class "ef" is not experiencing queuing delays.
- D. Traffic belonging to forwarding class "11" will never make use of the shared buffer pool.
- E. Out-of-profile traffic in the shared buffer pool is being dropped.

**Correct Answer:** BC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 13

A queue is configured with the following attributes:

MBS = 10KB

CBS = 5KB

High-Priority-Only = 20%

Assume that there is no CBS overbooking and that the slope-policy is disabled. If the current queue depth is 3KB, what will happen to an out-of-profile packet arriving at an egress queue?

- A. It will be queued in the reserved portion of the buffer pool and remain out-of-profile.
- B. It will be queued in the reserved portion of the buffer pool if there are no in-profile packets already in the queue.
- C. It will be queued in the reserved portion of the buffer pool and be in-profile.
- D. It will be queued in the shared portion of the buffer pool but contend for shared buffer space with packets from other queues.
- E. It will be queued in the shared portion of the buffer pool but may be dropped if the buffer utilization exceeds the start-average value of the low slope.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 14

A physical port has three associated buffer pools. Which of the following buffer pool combinations is associated to a physical port?

- A. Access ingress, access egress, network egress
- B. Access ingress, network ingress, network egress
- C. Port ingress, port egress, shared bi-directional
- D. Port ingress, port egress, network egress
- E. Port ingress, network ingress, network egress

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 15**

Which of the following are the minimum requirements needed to classify traffic marked with DSCP AF11, AF12, and AF13 into the AF forwarding class and provide fair treatment to the drop precedence settings? (Choose three)

- A. Profile mode queues
- B. Priority mode queues
- C. 1 queue
- D. 3 queues
- E. 3 forwarding classes
- F. 1 forwarding class, with 2 subclasses
- G. 1 forwarding class, with 3 subclasses

**Correct Answer:** ACF

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 16**

Forwarding subclasses are only relevant to, and are therefore applied within the context of, a \_\_\_\_\_ policy.

- A. network
- B. scheduling

- C. slope
- D. SAP-ingress
- E. network-queue

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 17**

To manage the shared buffer space at network ports, slope policies are applied on \_\_\_\_\_ for the ingress direction, and on \_\_\_\_\_ or \_\_\_\_\_ for the egress direction.

- A. Interfaces, ports, SAPs
- B. Ports, ports, MDAs
- C. MDAs, MDAs, ports
- D. Interfaces, interfaces. MDAs
- E. MDAs, ports, interfaces

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 18**

Click the exhibit button below. A service provider has applied the SAP-ingress policy configuration below on his customer's SAP. The service provider notices that all of the customer's traffic is being dropped at the SAP-ingress. Which of the following actions can resolve the problem, if applied on its own? (Choose three)

```
A:srl1a>config>qos>sap-ingress# info
```

```
-----  
    queue 1 create  
    exit  
    queue 3 profile-mode create  
        rate 50000 cir 0  
        high-prio-only 100  
    exit  
    queue 11 multipoint create  
    exit  
    fc "af" create  
        queue 3  
        profile out  
    exit  
    default-fc af  
-----
```



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- A. Set the CIR of queue 3 to a non-zero value corresponding to the customer's expected bandwidth requirements.
- B. Set queue 3 to use priority mode.
- C. Set the traffic classification of packets to in-profile.
- D. Set the high-priority-only value to 0.
- E. Map AF traffic to queue 1

**Correct Answer:** CDE

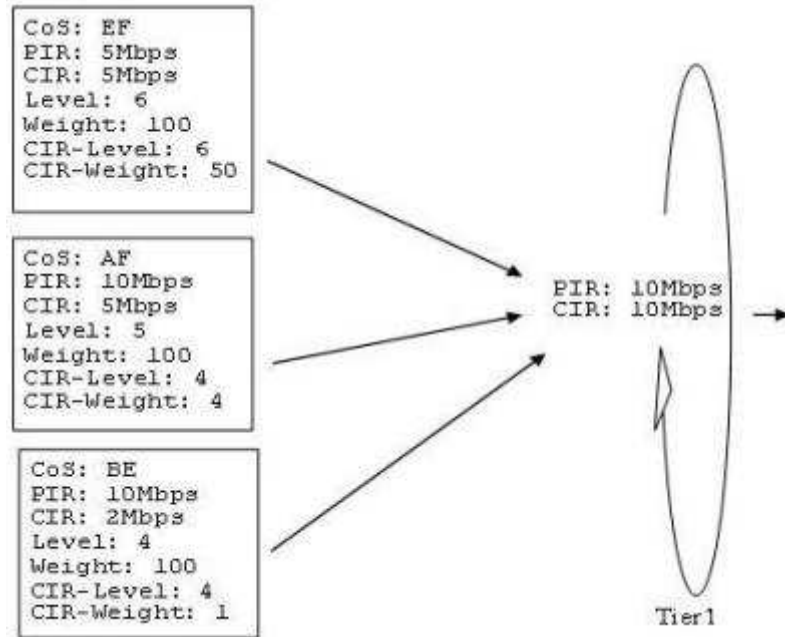
**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 19

Click the exhibit button below. Given the scheduler-policy (below), how much bandwidth can the best-effort traffic receive (PIR and CIR) when the ingress rate of each queue is 10Mbps?



- A. PIR = 4Mbps. CIR = 1Mbps
- B. PIR = 1Mbps, CIR = 1 Mbps
- C. PIR = 10Mbps, CIR = 1Mbps
- D. PIR = 5Mbps, CIR = 1.25Mbps
- E. PIR = 1.25Mbps, CIR = 1.25Mbps

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 20

In the context of hierarchical scheduling, a scheduler is configured with a CIR weight of 0. Which of the following statements is TRUE?

- A. The scheduler will be allocated its "within CIR" bandwidth before all other children at the same level have received their "within CIR" bandwidth.
- B. The scheduler will be allocated its "within CIR" bandwidth after all other children at the same level have received their "within CIR" bandwidth.
- C. The scheduler will be allocated its "within CIR" bandwidth after all other children at all levels have received their "within CIR" bandwidth.
- D. The scheduler will not be allocated its "within CIR" bandwidth.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 21**

Which of the following statements describe the primary objectives of the policing of traffic flows on the Nokia 7750 SR? (Choose two)

- A. Ensure that traffic flows conform to their traffic profile.
- B. Log violations of metered traffic flows exceeding the CIR value set on the entity across which the traffic is moving.
- C. Provide fairness between traffic flows, so that conforming (in-profile) traffic flows are not starved of bandwidth and/or buffer space by non-conforming (out-of-profile) flows.
- D. Minimize packet loss and reduce end to end latency.
- E. Ensure that variable latencies do not cluster short bursts of originally conforming packets and render them nonconforming.

**Correct Answer:** AC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 22**

Which of the following entities can scheduler policies be applied to? (Choose two)

- A. Network ingress port
- B. Epipe ingress SAP
- C. ES egress SAP
- D. Ingress MDA

- E. VPRN ingress interface
- F. Shared buffer space

**Correct Answer:** BC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 23**

It is necessary for Tier 1 schedulers to obtain bandwidth from a higher tier scheduler.

- A. TRUE
- B. FALSE

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 24**

When using an egress port scheduler, on which scheduling loop are orphaned queues serviced?

- A. Level 8 within CIR.
- B. Level 8 between CIR and PIR.
- C. Level 8, once all PIR is serviced.
- D. Level 1 within CIR.
- E. Level 1 between CIR and PIR.
- F. Level 1, once all PIR is serviced.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 25**

Which of the following statements regarding the egress port scheduler is TRUE?

- A. The egress port scheduler can have up to 17 children spread across 8 levels.
- B. Multiple egress port schedulers can be assigned to a single port with many HQoS children.
- C. Multiple HQoS policies can be children of a single port scheduler.
- D. Multiple egress port schedulers can be children of a single HQoS scheduler.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 26**

Traffic assigned to forwarding classes is placed into queues, while the contents of the queues are serviced in a controlled manner using\_\_\_\_\_.

- A. WRED
- B. shapers
- C. schedulers
- D. markers
- E. weighted fair queues (WFQ)

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 27**

To implement Hierarchical-QoS (Multi-tiered scheduling), which of the following actions must be undertaken? (Choose three)

- A. H-QoS capabilities must be enabled globally on the router
- B. A scheduler-policy must be configured.
- C. The queues in the SAP-ingress and SAP-egress policies do not require additional configuration attributes to make use of the hierarchical schedulers.



- D. The network queue policy must be configured to make use of the scheduler-policy.
- E. The scheduler-policy must be referenced in the SAP-ingress and SAP-egress policies.
- F. The scheduler-policy must be applied on the service SAP.

**Correct Answer:** BEF

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 28**

Which of the following statements regarding policing and shaping on the Nokia 7750 SR are TRUE? (Choose two)

- A. The larger the configured MBS value, the lower the amount of shaping performed.
- B. When policing is enabled on the SAP-ingress, all traffic is considered as in-profile.
- C. Setting the CIR to 1000 and the PIR to max will enable shapeless policing at 1 Mbps within the SAP-egress policy.
- D. Configuring MBS to equal CBS will disable shaping.
- E. Setting the CIR and PIR to equal values disables soft-policing.

**Correct Answer:** BE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 29**

Click the exhibit button below. Given this scheduler-policy configuration, which of the following can be said about the scheduler called "high"? (Choose two)

```

A:srla>config>qos>scheduler-policy# info
-----
    tier 1
      scheduler "Root" create
        description "This is the root scheduler"
        rate 50000 cir 50000
      exit
    exit
    tier 2
      scheduler "high" create
        description "High priority traffic"
        parent "Root" level 5 cir-level 5
        rate 30000 cir 25000
      exit
    tier 3
      scheduler "low" create
        description "Low priority traffic"
        parent "high" level 2 cir-level 2
        rate 50000 cir 10000
      exit
    exit
-----

```

- A. It is a parent scheduler.
- B. It is the top-level scheduler.
- C. It can allocate up to 50 Mbps of bandwidth to scheduler "low" since the bandwidth is not used by another Tier 3 scheduler.
- D. It is a child scheduler.
- E. It can only have queues as children.

**Correct Answer:** AD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 30

At which points can traffic be marked or remarked on the Nokia 7750? (Choose two)

- A. SAP-ingress only
- B. SAP-egress only
- C. SAP-ingress and SAP-egress
- D. Network ingress
- E. Network egress

**Correct Answer:** CE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### **QUESTION 31**

Which of the following statements regarding egress FC and profile over-ride are TRUE? (Choose two)

- A. Packets can be classified into 16 different FCs when using priority mode queuing.
- B. This feature is available on egress SAPs within any service.
- C. MPLS EXP bits can be changed based on multi-field classification.
- D. If a Behavior Aggregate (BA) and Multi-field (MF) match occurs, only the MF override parameters will take effect.
- E. If a Behavior Aggregate (BA) and Multi-field (MF) match occurs, the BA classification can override the forwarding class while the MF classification can override the profile.

**Correct Answer:** BE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### **QUESTION 32**

Which of the following are trusted boundaries, by default? (Choose two)

- A. An IES SAP
- B. A VPLS SAP
- C. A network port
- D. AVPRN SAP

E. An access port

**Correct Answer:** CD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### **QUESTION 33**

A service provider is using GRE for his transport tunnel on the Nokia 7750 SR. How can traffic be marked as it traverses the service provider's network? (Choose two)

- A. Using dot1p bits of the 802.1q Ethernet frame header
- B. Using DSCP bits within the ToS field of the IP packet header.
- C. Using the IP precedence bits within the ToS field of the IP packet header.
- D. Using the CLP bit of the ATM cell header.
- E. Using the EXP bits of the MPLS transport label header.

**Correct Answer:** AB

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### **QUESTION 34**

In which of the following scenarios is self-generated traffic QoS (sgt-QoS) useful?

- A. EXP markings on transit control traffic are not set correctly.
- B. The priority of all self-generated traffic needs to be lowered to allow all other traffic to take precedence.
- C. The priority of various control packets requires special treatment throughout the network.
- D. The BGP process is consuming too many CPU cycles and is impacting OSPF performance.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 35**

Which of the following statements are TRUE when discussing self-generated traffic QoS? (Choose two)

- A. In order to mark Layer 2 traffic, sgt-qos will set various ToS bits.
- B. DSCP bits can be set per application, per routing instance.
- C. The DSCP marking stays nc1 for all applications. Only the internal FC is manipulated across different applications.
- D. In order to mark Layer 2 self-generated traffic, network interfaces must be set to dot1Q.
- E. The internal forwarding class for self-generated traffic is set once and applied to the base router and all VPRN instances.

**Correct Answer:** BD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 36**

A packet is to be encapsulated inside an MPLS tunnel which consists of two MPLS headers at the first network egress. Which of the MPLS EXP fields will be marked?

- A. The EXP field in the bottom MPLS header will be marked.
- B. The EXP field in both the top and bottom MPLS headers will be marked.
- C. For Layer 2 services, the top MPLS header will be marked; for Layer 3 services, the bottom MPLS header will be marked.
- D. The EXP field in the top MPLS header will be marked.
- E. Neither the top nor the bottom EXP field will be marked since EXP remarking can only be done on the network ingress.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 37**

Which of the following parameters are used in a hierarchical scheduler-policy to specify the priority of the child scheduler/queue for allocating bandwidth beyond its committed rate? (Choose two)

- A. CIR
- B. CIR level
- C. CIR weight
- D. Rate
- E. Level
- F. Weight

**Correct Answer:** EF

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 38**

Which of the following statements regarding scheduling on the Nokia 7750 SR is TRUE? (Choose two)

- A. When using profile-mode queues, traffic that is marked as in-profile on ingress and scheduled in the above-CIR loop will still be considered as in-profile at egress.
- B. When an HQoS strategy using an egress port-scheduler has been deployed, Tier 1 receives its scheduling rates based on the amount of egress bandwidth available for each forwarding class.
- C. The greater the difference between PIR and CIR rates in a queue, the less likely a CIR will be provided.
- D. Packets scheduled out of high-priority queues in the default scheduler will have a lower chance of packet loss at the expense of incurring a higher probability of delay.
- E. When using priority-mode queues, traffic that is marked as in-profile on ingress and scheduled in the above-CIR loop will be considered as in-profile at egress.

**Correct Answer:** AC

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 39**

Which of the following fields can be marked or remarked for frames belonging to a Layer 2 service?

- A. DSCP
- B. PREC

- C. Dot1p
- D. ToS
- E. Q-in-Q

**Correct Answer:** C

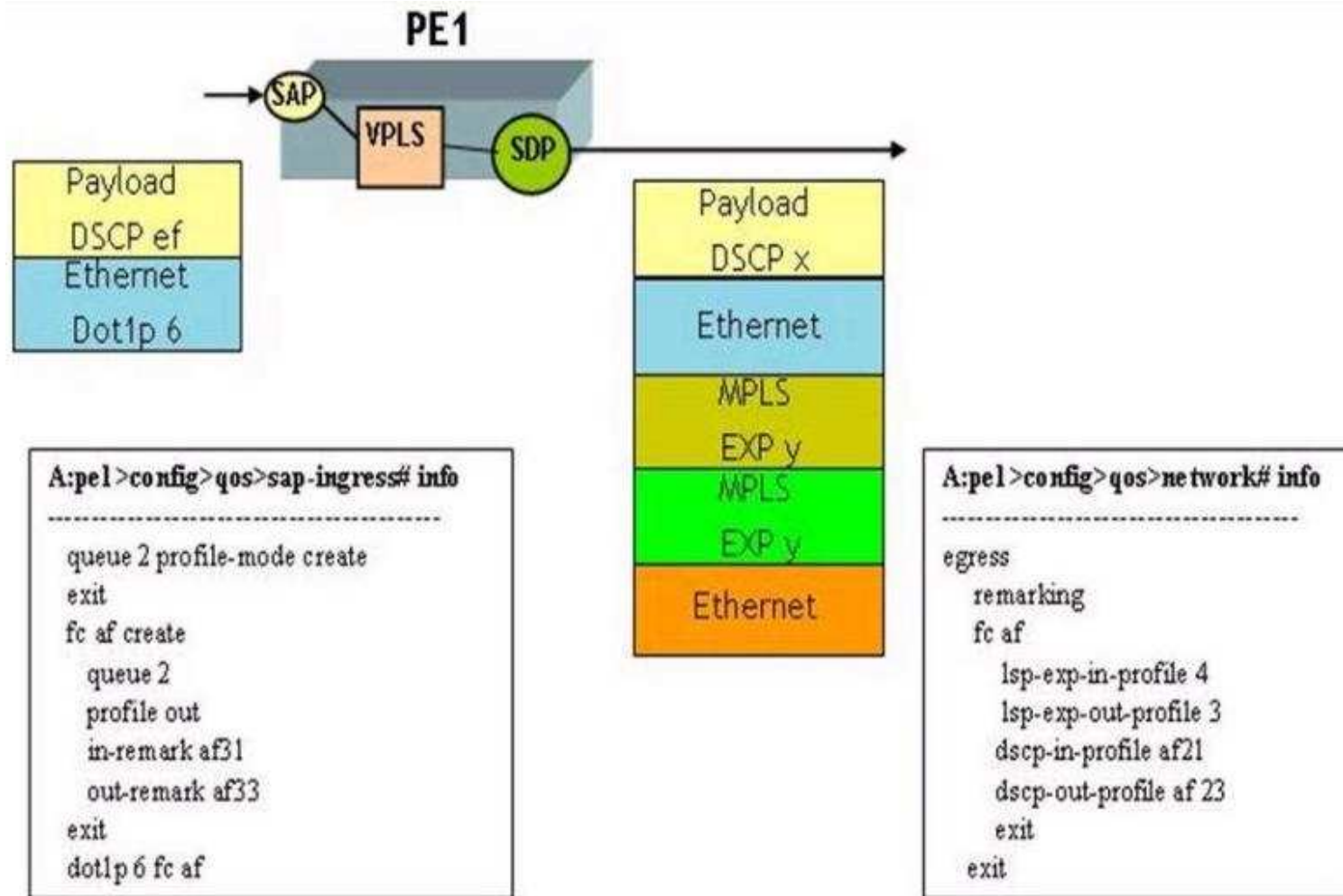
**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 40**

Click the exhibit button below.



At router PE1, customer packets are arriving tagged with a dot1p value of 6 and marked with a DSCP value of EF.

Based on the configuration shown below for a VPLS service, what will be the DSCP and EXP marking for the packet egressing the network port on this PE router? (Choose two)

- A. The DSCP value will be set to af21.
- B. The DSCP value will be set to af23.



- C. The DSCP value will remain as ef.
- D. The EXP value, in the MPLS headers, will be set to 4.
- E. The EXP value, in the MPLS headers, will be set to 3.

**Correct Answer:** CE

**Section:** (none)

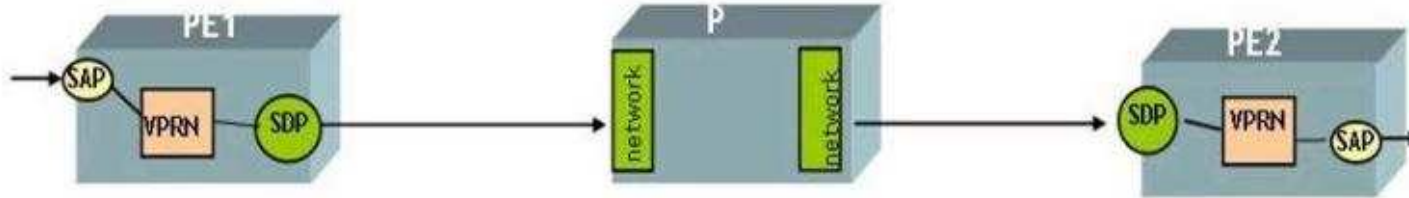
**Explanation**

**Explanation/Reference:**

#### **QUESTION 41**

Click the exhibit button below.

Default trust states  
for all interfaces



A:pe1>config>qos>sap-ingress# info

```

-----
queue 2 profile-mode create
exit
fc af create
queue 2
profile out
in-remark af22
out-remark af23
exit
dot1p 3 fc af

```

A:pe1>config>qos>network# info

```

-----
egress
  remarking
  fc af
    lsp-exp-in-profile 5
    lsp-exp-out-profile 4
    dscp-in-profile af21
    dscp-out-profile af 23
  exit
exit

```

A:p>config>qos>network# info

```

-----
ingress
  lsp-exp 4 fc af profile out
  lsp-exp 5 fc af profile in
  dscp af33 fc af profile out
  dscp af31 fc af profile in
exit

```

A:p>config>qos>network# info

```

-----
egress
  no remarking
  fc af
    lsp-exp-in-profile 2
    lsp-exp-out-profile 3
    dscp-in-profile af21
    dscp-out-profile af 23
  exit
exit

```

A:pe2>config>qos>sap-egress# info

```

-----
queue 3 create
queue 5 create
exit
fc af create
queue 3
dot1p 5
dscp af1 2
exit
fc 11 create
queue 5 create
dot1p 2
dscp be
exit

```

A:pe2>config>qos>network# info

```

-----
ingress
  lsp-exp 2 fc 11 profile in
  lsp-exp 3 fc 11 profile out
  lsp-exp 4 fc af profile out
  lsp-exp 5 fc af profile in
  dscp af33 fc af profile out
  dscp af31 fc af profile in
  dscp af21 fc 11 profile in
  dscp af23 fc 11 profile out
exit

```

All interfaces are using their default trust states and MPLS is used as the transport tunnel. The SAP-ingress, SAP-egress, and network QoS policies have been configured as shown below. Assume that the default network-queue policy is used on each router.

At router PE 1, customer traffic is arriving marked with DSCP BE and tagged with a dot1p value of 3.

Based on the configuration shown below for the VPRN service, what will be the DSCP and dot1p marking for the packet egressing at router PE 2? (Choose two)

- A. The DSCP value will be set to af21.
- B. The DSCP value will be set to be.
- C. The DSCP value will be set to af23.
- D. The DSCP value will be set to af 12.
- E. The dot1p value will be set to 5.
- F. The dot1p value will be set to 2.
- G. The dot1p value will be set to 3.

**Correct Answer:** DE

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 42

When deploying a Nokia MPLS network with QoS, how are the EXP bits set?

- A. The first 3 bits of the DSCP value are copied directly into the EXP field on the first network egress.
- B. The EXP bits are set on the first network egress, based on a combination of the SAP-ingress classification and the network policy applied.
- C. The 3 priority bits are copied directly from the dot1p header into the EXP field of the first MPLS header.
- D. The EXP bits are set based on a default map that translates DSCP codes into internal forwarding classes on SAP-ingress.

**Correct Answer:** AB

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 43

In which policies, on the Nokia 7750 SR, is classification performed? (Choose three)

- A. SAP-ingress policy

- B. SAP-egress policy
- C. IP-criteria policy
- D. Network-queue policy
- E. Slope policy
- F. Network policy

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 44**

Which of the following are categories of forwarding classes on the Nokia 7750 SR? (Choose two)

- A. Real-time
- B. Assured
- C. Non-conforming
- D. High priority
- E. In-profile

**Correct Answer:** AD

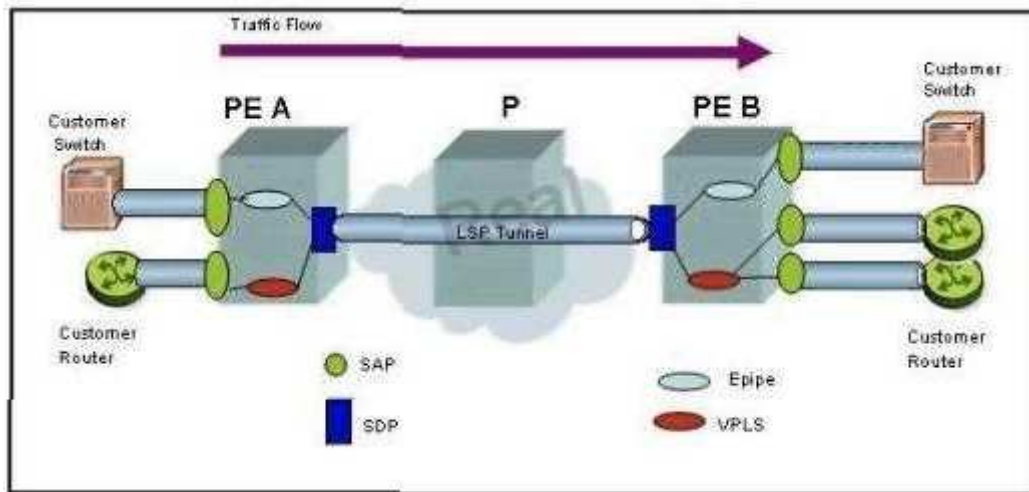
**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 45**

Click the exhibit button below. The service provider has both a VLL (epipe) service and a VPLS, as shown in the diagram below.



At router PE B, traffic arriving from both services will have the same network-queue policy applied.

- A. TRUE
- B. FALSE

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

#### QUESTION 46

Which of the following statements describe the operation of WRED on the Nokia 7750 SR? (Choose three)

- A. WRED monitors the shared buffer space utilization over a period of time.
- B. WRED disables the TCP slow-start congestion control mechanism.
- C. WRED uses two configurable slopes for each buffer pool: a high slope and a low slope.
- D. WRED uses the shared buffer utilization, instead of the individual queue depth, to get a better picture of the average resource utilization of the shared buffer space.
- E. WRED polices the shared buffer pool and marks all packets above a certain rate as "discard eligible."

**Correct Answer:** D

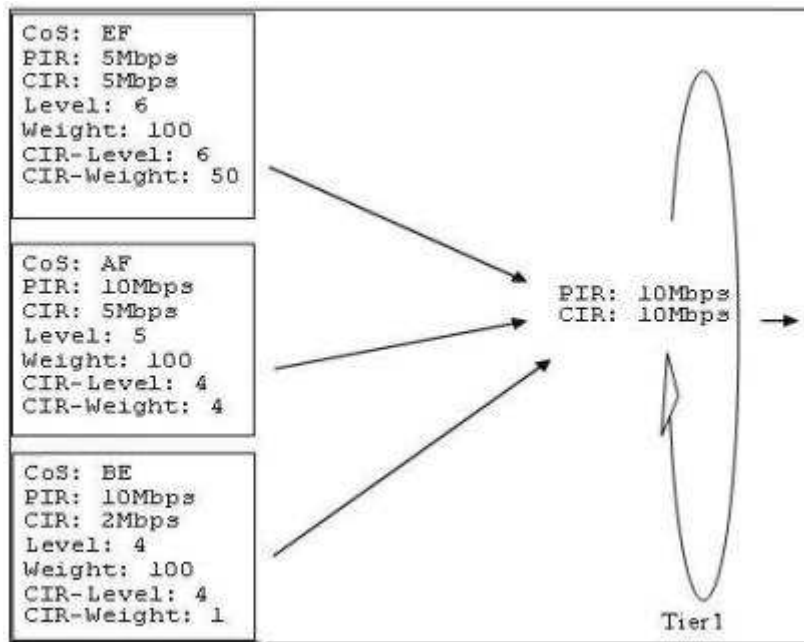
**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 47**

Click the exhibit button below. Given the scheduler-policy (below), which of the following can be done to guarantee that the best-effort traffic receives its configured CIR value?



- A. Change the CIR-level value for the best-effort queue to 8.
- B. Do not change anything; it is already guaranteed to receive its CIR
- C. Change the CIR-level value for the best-effort queue to 1.
- D. Change the CIR-weight value of the AF queue to 0.

**Correct Answer:** AD

**Section:** (none)

### **Explanation**

### **Explanation/Reference:**

#### **QUESTION 48**

Which of the following rate-limiting approaches are used on the Nokia 7750 SR? (Choose two)

- A. Shapeless policing at SAP-ingress only.
- B. Shapeless policing at SAP-ingress and egress.
- C. Biased round robin queuing at ingress only.
- D. Soft shaping at all network interfaces.
- E. Soft shaping at network ingress only.

**Correct Answer:** DE

**Section:** (none)

### **Explanation**

### **Explanation/Reference:**

#### **QUESTION 49**

If a packet is marked on a SAP-ingress, it will be remarked at the first network egress point (if remarking is enabled in the network egress policy).

- A. TRUE
- B. FALSE

**Correct Answer:** B

**Section:** (none)

### **Explanation**

### **Explanation/Reference:**

#### **QUESTION 50**

Which of the following statements are TRUE regarding the PE device in a QoS enabled network? (Choose two)

- A. A device that provides no differentiation between customer traffic flows.
- B. A device that classifies and marks customer traffic.

- C. A device that uses MPLS EXP bits to differentiate between traffic flows.
- D. A device that creates macroflows towards the core from multiple customer sites.
- E. A device that passes macroflows while optionally changing QoS markings.

**Correct Answer:** BD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 51**

On the Nokia 7750 SR, what is the maximum number of queues that a single SAP-ingress policy can support in a VPLS?

- A. 16
- B. 8
- C. 32
- D. 48
- E. 56

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 52**

Click the exhibit button below. A network operator has configured a network-queue policy to map forwarding classes to queues, as shown in the exhibit below. Based on the default scheduling behavior of the Nokia 7750 SR, in which order will packets be serviced?



```
A:srl1>config>qos>network-queue# info
```

```
-----  
    queue 1 create  
        rate 100 cir 0  
    exit  
    queue 5 create  
        rate 100 cir 50  
    exit  
    queue 6 create  
        rate 50 cir 50  
    exit  
    queue 9 multipoint create  
    exit  
    fc af create  
        queue 5  
    exit  
    fc be create  
        queue 1  
    exit  
    fc ef create  
        queue 6  
    exit  
    fc h2 create  
        queue 5  
    exit  
-----
```

- A. All in-profile packets in round-robin, then all out-of-profile packets in biased round-robin.
- B. In-profile EF packets, then in-profile H2 packets, then in-profile AF packets, then out-of-profile EF packets, then out-of-profile H2 and AF packets, and then out-of-profile BE packets.
- C. In-profile EF, H2 and AF packets, then out-of-profile H2, AF and BE packets in biased round-robin.
- D. In-profile EF packets, then in-profile H2 and AF packets, then out-of-profile H2, AF and BE packets in biased round-robin.
- E. In-profile EF and H2 packets, then in-profile AF packets, then out-of-profile H2, AF and BE packets in biased round-robin.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 53**

Which of the following statements regarding scheduling are TRUE? (Choose two)

- A. Scheduler policies cannot be children of an egress port-scheduler.
- B. HQoS provides a static method of allocating scheduling resources to each queue and/or child.
- C. Scheduler policies can be applied to the MDA to schedule network ingress traffic.
- D. Every time a scheduler-policy is assigned to a SAP, a new hardware scheduler is created to service the SAP.
- E. A scheduler applied to multiple SAPs within the same service will result in a single hardware scheduler operating across all SAPs within the service.

**Correct Answer:** CD

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 54**

Which of the following statements regarding the default scheduler in the Nokia 7750 SR are TRUE? (Choose two)

- A. There are a maximum of 8 levels of priority serviced using a round-robin algorithm.
- B. The default scheduler will spend an equal amount of time in each queue, as long as there is traffic present
- C. The H1 internal forwarding class will receive its CIR before AF traffic.
- D. Orphaned queues will be scheduled out of the BE queue.
- E. A queue servicing EF and AF traffic will require explicit configuration to set the queue to expedited.

**Correct Answer:** CE

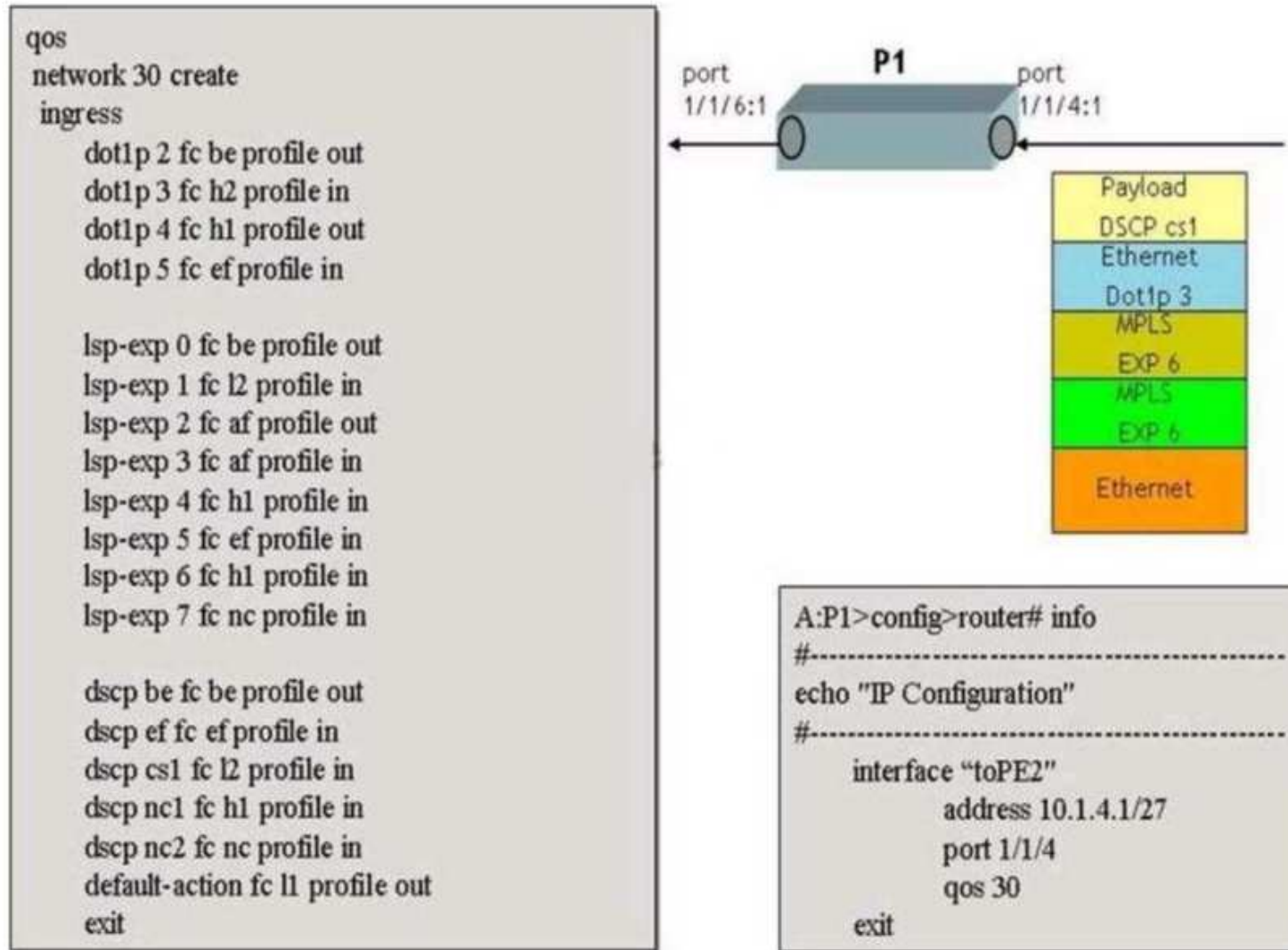
**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 55

Click the exhibit button below.



Based on the configuration of the network policy (below), what will be the forwarding class associated with a MPLS encapsulated customer packet that arrives on a

dot1Q encapsulated network port 1/1/4:1 on P1 with the following characteristics:

EXP value = 6  
DSCP value = cs1  
Dot1pvalue = 3

- A. EF
- B. H1
- C. L1
- D. H2
- E. L2

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 56**

Which of the following statements about CIR of a queue is TRUE?

- A. It may exceed PIR of the queue.
- B. It may be exceeded by the average servicing rate of the queue.
- C. It varies depending on the traffic characteristics.
- D. It is the rate at which packets are forwarded out of the queue.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 57**

Which of the following is NOT a characteristic of policing?

- A. It smooths out traffic bursts.
- B. It drops the packets when average peak rate is exceeded.

- C. It may additionally color the packets as they arrive.
- D. It buffers the packets at its output before sending them out.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### QUESTION 58

The network QoS policy shown below is applied properly to a Nokia 7750 SR acting as a transit Label Switch Router (LSR) for a given MPLS tunnel. A packet is received inside the MPLS tunnel with EXP=4, dot1p=4, and DSCP=AF. Which forwarding class is assigned to this packet?

```
R2>config>qos>network# info
-----
    ingress
      default action fc l2 profile out
      ler-use-dscp
      dscp af fc h1 profile in
      lsp-exp 4 fc af profile out
      dot1p 4 fc be profile in
    exit
  egress
  exit
-----
```

- A. L2
- B. H1
- C. AF
- D. BE

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 59**

Which parameter can be configured in a network ingress QoS policy?

- A. The priority (low/high) to be assigned to the packets.
- B. The profile (in/out) to be assigned to the packets.
- C. The queues to be assigned to the forwarding classes.
- D. The markings to be marked on the packets.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 60**

Which of the following egress points does NOT support egress reclassification?

- A. Spoke-SDPs bound to an IES
- B. Spoke-SDPs bound to a VPRN interface
- C. SAPs
- D. Network interfaces

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**



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**QUESTION 61**

Which of the following modules has 768 MB of buffer memory that dynamically allocates between its two MDAs?

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- A. IOM3
- B. FP3 based IMM
- C. IOM1
- D. IOM2

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 62**

Which ports on the same MDA share a buffer pool in a Nokia 7750 SR?

- A. Access ingress ports
- B. Access egress ports
- C. Network ingress ports
- D. Network egress ports

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 63**

Which of the following statements about buffer admission control techniques is FALSE?

- A. A packet is accepted into a queue based on its priority and forwarding class.
- B. Buffer admission control limits the number of out-of-profile packets that enter the queue.
- C. Both high priority-only buffer space and WRED can be used in a queue.
- D. Priority is used when a packet enters a SAP-ingress queue.

**Correct Answer:** C

**Section:** (none)

### **Explanation**

### **Explanation/Reference:**

### **QUESTION 64**

What can be learned from the output of the command “show pools 1/2/2 network-egress” on the GigE port?



```

=====
A:SR# show pools 1/2/2 network-egress
=====
Pool Information
=====
Port          : 1/2/2
Application    : Net-Egr
Resv CBS      : Sum
Pool Name     : default

Utilization    State    Start-Avg    Max-Avg    Max-Prob
High-Slope     Down    70%          90%         80%
Low-Slope      Up      10%          50%         80%

Time Avg Factor : 7
Pool Total      : 20480 KB
Pool Shared     : 12288 KB
Pool Resv       : 8192 KB

Pool Total In Use : 704 KB
Pool Shared In Use : 192 KB
Pool Resv In Use  : 512 KB
WA Shared In Use  : 1 KB

Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob : 0

FC-Maps    MBS    Depth    A. CIR    A. PIR
           CBS                O. CIR    O. PIR
-----
be 12      192    190      0         1000000
           0                0         Max
af         10240    456    250000    1000000
           1792                250000    Max
l1         5120     0    250000    1000000
           0                250000    Max
h2         10240     0    1000000    1000000
           1792                Max        Max
ef         10240     0    1000000    1000000
           1792                Max        Max
h1         512     0    100000    10000
           512                100000    10000
nc         5120     0    100000    1000000
           512                100000    Max
=====

```

- A. All incoming packets belonging to forwarding class "l2" are stored in the reserved buffer space.
- B. All incoming packets belonging to forwarding class "af" are stored in the reserved buffer space.
- C. All incoming packets belonging to forwarding class "l1" are stored in the reserved buffer space.

D. In-profile packets in the shared buffer space are being dropped.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 65**

According to the SAP-ingress QoS policy shown, which packets have a higher priority to enter queue 2?

```
R2>config>qos>sap-ingress# info
-----
--- Output omitted ---
queue 2 profile-mode create
    mbs 10
    cbs 5
    high-prio-only 30
exit
queue 3 priority-mode create
    mbs 20
    cbs 5
    high-prio-only 50
exit
fc af create
    queue 2
exit
fc "af.out" create
    profile out
exit
dscp af33 fc "af.out" priority high
dot1p 4 fc af
default-fc 11
exit
-----
```

- A. Packets marked with dscp = af33
- B. Packets marked with dot1p = 4
- C. All packets mapped to queue 2 have the same priority to enter this queue.
- D. There are no packets mapped to queue 2.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 66**

On the Nokia 7750 SR, what is the maximum number of ingress queues that a single network queue policy can support in a VPLS?

- A. 8
- B. 16
- C. 32
- D. 48

**Correct Answer: C**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 67**

For which of the following queues does a Nokia 7750 SR allocate a separate hardware queue per each destination fast forward path complex (FFPC)?

- A. An egress unicast queue defined in a network queue policy
- B. An ingress unicast queue defined in a SAP-ingress policy
- C. An ingress multipoint queue defined in a SAP-ingress policy
- D. An ingress multipoint queue defined in a network queue policy

**Correct Answer: B**

**Section: (none)**

**Explanation**

**Explanation/Reference:**

**QUESTION 68**

Which of the following statements about the token buckets of a policer is FALSE?

- A. The CIR has no influence on the forwarding rate of the policer traffic.
- B. The CIR influences whether a packet is considered high-profile or low-profile.
- C. The policer discards all incoming packets when PIR bucket reaches the MBS level.

D. PIR bucket forwards packets that arrive with rates above PIR as out-of-profile.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 69**

According to the SAP-ingress QoS policy shown, which of the following statements about processing of the packets by policers 3 and 4 is TRUE?

```

R1>config>qos>sap-ingress# info
-----
---- Output omitted ----
policer 3 create
    rate 10000 cir 4000
    mbs 40
    cbs 20
    high-prio-only 30
exit
policer 4 create
    rate 10000 cir 2000
    mbs 20
    cbs 5
    high-prio-only 70
exit
fc af create
    policer 3
exit
fc l2 create
    policer 4
exit
dscp "ef" fc "af"
dot1p 2 fc "af"
dot1p 4 fc "l2" priority low
default-fc 11
default-priority low
exit

```

- A. Policer 3 forwards packets as out-of-profile when its PIR bucket has 4000 tokens.
- B. Policer 3 starts discarding low-priority packets when its PIR bucket has at least 3000 tokens.
- C. Policer 4 forwards all its packets as out-of-profile.
- D. Policer 4 starts discarding low-priority packets when its PIR bucket has at least 3000 tokens.

**Correct Answer:** A

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 70**

Which of the following statements is a characteristic of a CFHP arbiter?

- A. An arbiter can adjust the CIR of its child policers.
- B. An arbiter rate-limits the collective output of several policers towards each egress FFPC.
- C. An arbiter can adjust the bandwidth assigned to its child arbiters and child policers.
- D. An arbiter does not need to honor the configurations of its child policers.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 71**

An IOM3 card of a Nokia7750 SR is enabled with the default scheduler and the policy shown in the image is applied to an access port on this card. In which order will packets be scheduled out of the queues?

```
R1>config>qos>sap-ingress# info
```

```
-----  
---- Output omitted ----
```

```
queue 3 create
```

```
    rate 10000 cir 4000
```

```
exit
```

```
queue 4 create
```

```
    rate 4000 cir 1000
```

```
exit
```

```
fc ef create
```

```
    queue 3
```

```
exit
```

```
fc h1 create
```

```
    queue 4
```

```
exit
```

```
fc l1 create
```

```
    queue 3
```

```
exit
```

- A. Queue 3 within-CIR packets, then queue 4 within-CIR packets, then queue 3 and queue 4 above-CIR packets in round-robin.
- B. Queue 4 within-CIR packets, then queue 3 within-CIR packets, then queue 3 and queue 4 above-CIR packets in round-robin.
- C. Queue 3 within-CIR packets, then queue 4 within-CIR packets, then queue 3 above-CIR packets, and finally queue 4 above-CIR packets.
- D. Queue 4 within-CIR packets, then queue 3 within-CIR packets, then queue 4 above-CIR packets, and finally queue 3 above-CIR packets.

**Correct Answer:** B

**Section:** (none)

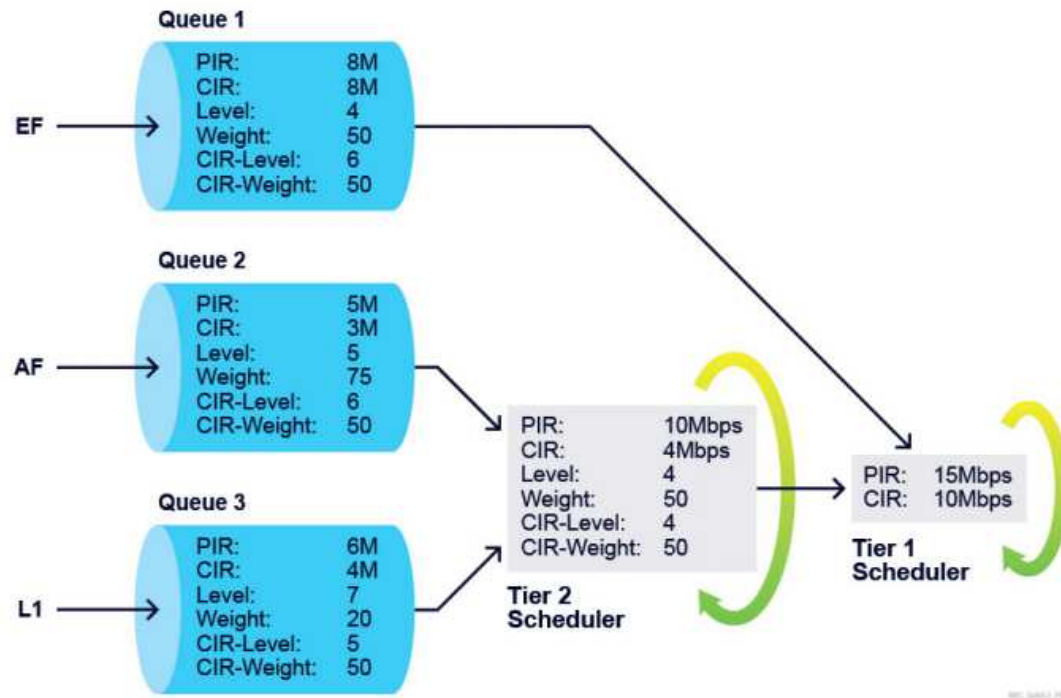
**Explanation**

**Explanation/Reference:**

#### QUESTION 72

A hierarchical scheduler policy with the shown parameters is configured at a service ingress. If the offered rate of each queue is 10Mbps, what is the operational PIR and CIR for queue 3?





- A. PIR = 5 Mbps, CIR = 0 Mbps
- B. PIR= 4 Mbps, CIR = 1 Mbps
- C. PIR= 6 Mbps, CIR = 4 Mbps
- D. PIR= 6 Mbps, CIR = 1 Mbps

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

### QUESTION 73

Which of the following statements describes a queue's weight parameter that is used in the hierarchical scheduling?

- A. The weight specifies the priority of the queue during scheduling up to its CIR.

- B. The weight specifies the priority of the queue during scheduling above-CIR, up to its PIR.
- C. The weight is used to determine how this queue and other queues or schedulers at the same CIR-level share available CIR bandwidth at that level.
- D. The weight is used to determine how this queue and other queues or schedulers at the same level share available above CIR bandwidth at that level.

**Correct Answer:** D

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 74**

Which of the following statements about configuring a hierarchical scheduler policy on a SAP is FALSE?

- A. Several Tier 1, Tier 2, and Tier 3 schedulers can be defined within a policy.
- B. A queue's parent scheduler must be a Tier-3 scheduler.
- C. The parent must have a higher level in the hierarchy.
- D. If no parent is configured, the queue/scheduler is considered orphaned.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

#### **QUESTION 75**

Which of the following components are NOT configured in a hierarchical scheduler policy?

- A. Queue parameters with which the queue will compete for bandwidth.
- B. The level of hierarchy with which a group of schedulers is associated.
- C. Bandwidth controls that limit each child scheduler or child queues associated with the scheduler.
- D. The maximum bandwidth that the parent scheduler can offer its child queues or schedulers.

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 76**

Which of the following statements about the bandwidth allocation criteria used by an egress port scheduler is TRUE?

- A. The available bandwidth of the port is divided in a strict priority over its children.
- B. Expedited queues must be serviced before best-effort queues.
- C. Orphaned queues are serviced on the 8th scheduling priority.
- D. The configured CIR dictates the maximum port bandwidth that can be allocated during the within-CIR pass for that level.

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 77**

An egress port scheduler applied to an Ethernet port has a configured bandwidth of 100 Mbps. All frames transmitted on the port are 80 bytes. What is the aggregate transmit bandwidth of all queues using the port scheduler?

- A.  $100\text{Mbps} * 20/(80 + 20) = 20\text{ Mbps}$
- B.  $100\text{Mbps} * 80/(80 + 20) = 80\text{ Mbps}$
- C. 100Mbps
- D.  $100 + 100 * 20/(80 + 20) = 120\text{ Mbps}$

**Correct Answer:** C

**Section:** (none)

**Explanation**

**Explanation/Reference:**

**QUESTION 78**

At which point are internal QoS markings added to the packets?

- A. SAP-ingress
- B. FFPC
- C. SAP-egress

D. network-egress

**Correct Answer:** B

**Section:** (none)

**Explanation**

**Explanation/Reference:**



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