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HPE2-K42

Designing HPE Nimble Solutions



Exam A

QUESTION 1

Which prerequisites must be fulfilled before starting the array initialization? (Choose three)

- A. HPE Nimble Windows Toolkit installed on a server/laptop.
- B. Ensure your laptop/server IP has a static IP address configured on the same subnet as the array management interface.
- C. Array updated to the latest firmware.
- D. All switch configurations done like flow control and spanning tree.
- E. Array registered in InfoSight based on the serial number.
- F. HPE Service Processor deployed

Correct Answer: ABC Section: (none) Explanation

Explanation/Reference:

QUESTION 2 How is

SmartReplicate licensed?

- A. per array
- B. free of charge
- C. per target
- D. based on capacity (per 1TB)

Correct Answer: B Section: (none) Explanation



Explanation/Reference:

Reference: https://community.hpe.com/t5/Array-Performance-and-Data/Nimble-SmartSnap-SmartReplication-vs-EMC-RecoveryPoint/td-p/6983058#.XBCRDsRR2kw

QUESTION 3 What is the maximum number of banks in an AF-

Series array?

- A. 1
- B. 2
- C. 3 D. 4

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

QUESTION 4 What is a valid QoS performance setting?

- A. latency threshold
- B. IOPS minimum
- C. IOPS limit
- D. MB/s minimum



Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Explanation:

QoS-Limit allows a user to limit either the IOP or MB/s performance of a specific workload. Having the ability to limit both IOPS and MBs is important as quite often any single workload will have different peaks and troughs during the operational day. For instance, an OLTP workload maybe very latency sensitive to small block updates during the working day when rows and tables are frequently being accessed or updated (this will tend to be very IOP/latency sensitive) yet in the evening the same database maybe receiving feeds from other systems (or providing bulk updates/analysis or index rebuilds), the same application will cease to be IOP sensitive and will now be bandwidth (MBs) sensitive. In NimbleOS4 a user can limit a workload by either IOPS or MBs and also specify limits to both IOPS and MBs. If either limit is reached then the volume will be restricted accordingly.

Reference: https://community.hpe.com/t5/HPE-Storage-Tech-Insiders/NimbleOS-4-Quality-of-Service-QoS-Limits/ba-p/6986455#.XBEAvMRR2kw

QUESTION 5 What are primary HPE Nimble SmartReplicate components? (Choose three.)

A. partner

B. snapshot schedule

C. replication group

D. sync partner

E. throttle

Correct Answer: ABE Section: (none) Explanation

Explanation/Reference:

QUESTION 6 How should the All-Flash shelf be connected to the controller shelf?

- A. Cable the All-Flash shelf directly to the last disk shelf.
- B. Cable the All-Flash shelf directly to the controller shelf.
- C. Use high performance SAS expanders.
- D. Cable the All-Flash shelf directly to the first disk shelf.

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

QUESTION 7 What is the correct power on/off order of the All Flash-Series? (Choose two.)

- A. power off the controller shelf first, then the expansion shelves
- B. power on controller shelf first, then the expansion shelves
- C. power on expansion shelves first, then the controller shelf
- D. power off the expansion shelves first, then the controller shelf

Correct Answer: AC Section: (none) Explanation

Explanation/Reference:

Reference: https://www.reddit.com/r/storage/comments/3ii6dt/nimble array remote shutdown during power outage/





QUESTION 8

How can controller failover be performed? (Choose two.)

- A. In CLI, use the command: failover.Perform it online via InfoSight.
- B. In WebUI, on the array level, click MAKE ACTIVE.
- C. In OCP, press the Failover button.
- D. Perform it online via InfoSight.

Correct Answer: AB Section: (none) **Explanation**

Explanation/Reference:

QUESTION 9 Which kind of licensing approach do HPE Nimble arrays use?

- A. capacity-based licensing
- B. controller-based licensing
- C. all-inclusive licensing
- D. frame-based licensing

Correct Answer: C Section: (none) **Explanation**

Explanation/Reference:

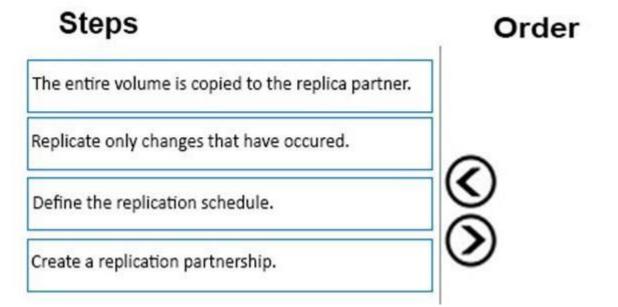
QUESTION 10

DRAG DROP

List basic replication steps in the correct order.

Select and Place:

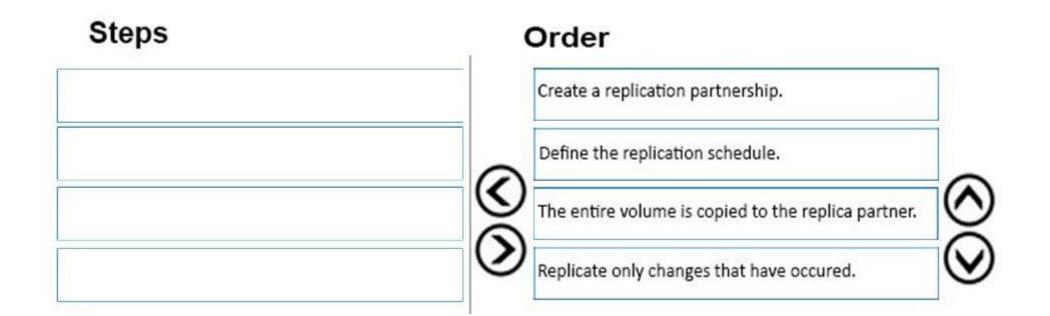






Correct Answer:





Section: (none) Explanation

Explanation/Reference:

QUESTION 11 Volume pinning is a technology that applies to which series of HPE Nimble arrays?

- A. AF-Series
- B. CF-Series
- C. All series
- D. HF-Series

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

QUESTION 12 Which statement is correct about Zero copy clones? (Choose two.)

- A. It is mandatory for customers requiring RPO=0.
- B. It is required for replication to a Secondary Flash Array's for optimal data protection.
- C. It is a full copy of all data blocks for full performance.
- D. it allows a volume to be created for online use, based on a snapshot.
- E. It occupies no additional space until new data is written or changed.

Correct Answer: DE Section: (none) Explanation

Explanation/Reference:

Reference: https://cdm-cdn.nimblestorage.com/2016/12/21081103/tr-nimblestorage-oracle-test-dev-guide.pdf



QUESTION 13

How can you check which controller is in Standby mode? (Choose two.)

- A. In WebU, select Controllers.
- B. Use the command: showsys.
- C. In WebUI, select Manage Arrays
- D. Use the command: ctrl --list

Correct Answer: CD Section: (none) Explanation

Explanation/Reference:

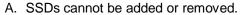
QUESTION 14 What are the recommended tests you should run after the initial setup? (Choose two.)

- A. zoning validation
- B. email alert setup test
- C. data access verification
- D. controller failover test

Correct Answer: CD Section: (none) Explanation

Explanation/Reference:

QUESTION 15 Which statement is true about SSD addition/removal in the HF-Series system? (Choose two.)



- B. SSDs can be added to the existing cache pool.
- C. SSDs can be removed from the existing cache pool.
- D. SSDs can only be removed if no volumes exist

Correct Answer: BD Section: (none) Explanation

Explanation/Reference:

QUESTION 16 Following HPE best practices, when connecting a head unit to an expansion shelf, what port on the expansion shelf should you connect into?

- A. P4
- B. P1
- C. P3
- D. P2

Correct Answer: D Section: (none) Explanation

Explanation/Reference:





QUESTION 17

DRAG DROP

Match the general DR operations to their descriptions.

Select and Place:

Operation	Description	
Demote	Graceful transition between two sites (no data loss)	
Handover	Making the DR site primary with the data it has (possible data loss)	
Promote	Clearing ownership status from a former source	

Correct Answer:



Section: (none) Explanation

Explanation/Reference:

QUESTION 18 What are valid HPE Nimble Windows Toolkit (NWT) prerequisites? (Choose three.)

- A. MPIO enabled
- B. running iSCSI service
- C. Microsoft PowerShell 3.0
- D. .NET Framework 4.5.2 or above
- E. Java JRE 1.6.0 or above

Correct Answer: ACD Section: (none) Explanation

Explanation/Reference:

QUESTION 19

How do AF-Series arrays perform sequential stripe write operations?

A. hole filling



В.	write	full	stri	pes

C. write into zone

D. write in place

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

QUESTION 20 Which system roles can be assigned to a user on an HPE Nimble array? (Choose three.)

A. Backup

B. Guest

C. Read Only

D. Service

E. Operator

F. Poweruser

Correct Answer: BEF Section: (none) Explanation

Explanation/Reference:

QUESTION 21

What unique RAID technology did HPE Nimble create?



- B. Network-RAID 10
- C. Triple+ Parity RAID
- D. RAID 6+

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

QUESTION 22 How does HPE InfoSight predict and prevent problems? (Choose three.)

- A. Performs global correlations and learn from all systems worldwide.
- B. Use Triple+ parity RAID for ultimate data protection.
- C. Collect rich telemetry data from across the entire infrastructure stack.
- $\hbox{D. Use intelligent housekeeping processes for deduplication and compression.}\\$
- E. Use proactive fault detection with remote call home diagnostics through HPE Service Processor.
- F. Process the information through a combination of predictive analytics.

Correct Answer: ACF Section: (none) Explanation

Explanation/Reference:





QUESTION 23 When performing a controller upgrade, which component needs to be moved to the new controller?

- A. DIMM RAM modules
- B. on-board SD card
- C. cache batteries
- D. on-board USB stick

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

QUESTION 24 Which compute cloud services are compatible with HPE Cloud Volumes? (Choose two.)

- A. Amazon Web Services
- B. IBM Cloud
- C. Google Cloud Platform
- D. HPE Hybrid Cloud
- E. Microsoft Azure

Correct Answer: AE Section: (none) Explanation

Explanation/Reference:

Reference: https://www.hpe.com/emea_europe/en/storage/cloud-volumes.html

QUESTION 25 Which snapshot technology do HPE

Nimble arrays use?

- A. ROW
- B. ROW with sweeping
- C. COW
- D. COW with sweeping
- E. ROW with defragmentation

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

QUESTION 26 What are the correct AF series read operations?

- A. Check DRAM. Check NVDIMM. Retrieve from SSD. Validate checksum, decompress, dedupe, and return data.
- B. Check NVDIMM. Retrieve from SSD. Validate checksum, decompress, dedupe, and return data.
- C. Check NVDIMM. Check DRAM. Retrieve from SSD. Validate checksum, decompress, dedupe, and return data.
- D. Check SSD. Check NVDIMM. Check DRAM. Validate checksum, decompress, dedupe, and return data.

Correct Answer: C Section: (none) Explanation



Explanation/Reference:

QUESTION 27 Which tools can you use on a Windows host to connect to iSCSI volumes on an HPE Nimble array? (Choose two.)

A. HPE Nimble Connection Wizard

B. Microsoft iSCSI Initiator

C. HPE Nimble Connection Manager

D. HPE Nimble Windows Toolkit

Correct Answer: CD Section: (none) Explanation

Explanation/Reference:

Reference: https://community.hpe.com/t5/HPE-Storage-Tech-Insiders/Nimble-OS-2-0-Part-2-Nimble-Connection-Manager-for-Windows/ba-p/6986545

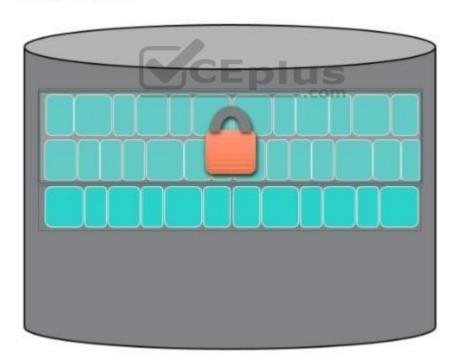
QUESTION 28

HOTSPOT

Select the snapped data snapshot area.

Hot Area:

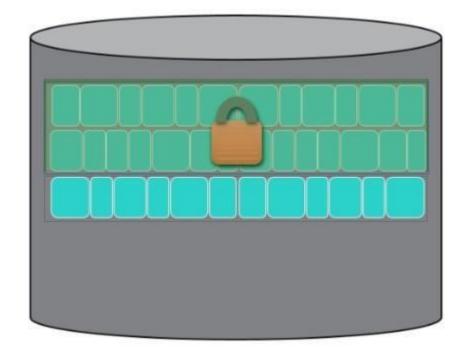
Image number 230105



Correct Answer:



Image number 230105



Section: (none) Explanation

Explanation/Reference:

QUESTION 29 Which compression algorithm do all HPE Nimble arrays use?

- A. PPM
- B. bzip2
- C. LZ4
- D. LZ77

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

QUESTION 30 Which parameters are configured during the initial array configuration? (Choose three.)

- A. Subnets
- B. SNMP settings
- C. Firewall Port settings
- D. Replication partners
- E. NTP servers
- F. DNS servers

Correct Answer: AEF Section: (none) Explanation





Explanation/Reference:

QUESTION 31 Which setting of the volume reserve parameter disables thin provisioning?

A. The ratio in % of SSD cache versus HDD storage (in HF-series only)

B. 0%

C. all above 80%

D. 100%

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

Reference: https://community.hpe.com/t5/HPE-Storage-Tech-Insiders/Nimble-Storage-InfoSight-Reveals-Extensive-Usage-of-Thin/ba-p/6986703#.XBHyBsRR2kw

QUESTION 32 What is the HPE Nimble grouping of volumes that share snapshot/replication schedules?

A. volume group

B. consistency group

C. volume set

D. volume collection

Correct Answer: D Section: (none) Explanation



Explanation/Reference:

QUESTION 33 DRAG DROP

List in the correct order the steps of a full disaster recovery scenario.

Select and Place:

Add/adjust ACLs on the volumes. Mount volumes to application servers (Windows/ESX). Promote downstream volume collections at the DR site. Start the production environment at the DR site.

Correct Answer:



<u>STEPS</u>	<u>ORDER</u>
	Promote downstream volume collections at the DR site.
	Add/adjust ACLs on the volumes.
	Mount volumes to application servers (Windows/ESX).
	Start the production environment at the DR site.

Section: (none) Explanation

Explanation/Reference:

QUESTION 34

Do HPE Nimble arrays support SYSLOG?

- A. Yes, but only when InfoSight is configured and active.
- B. Yes, but only with Monitoring Extension license.
- C. Yes.
- D. No.

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

QUESTION 35 Which is included in HPE Nimble Windows Toolkit? (Choose two.)

- A. HPE Nimble VSS Writer
- B. HPE Nimble Connection Service (NCS)
- C. HPE Nimble VSS Requestor
- D. HPE NimbleInfo

Correct Answer: BC Section: (none) Explanation

Explanation/Reference:

QUESTION 36 Which type of snapshots do we create when not using App Synchronization?

- A. application consistent
- B. crash consistent
- C. cluster consistent
- D. VM consistent

Correct Answer: A Section: (none)



Explanation

Explanation/Reference:

QUESTION 37 Which technology is utilized by AF-Series deduplication?

A. XORing

B. block-by-block compare

C. MD5 hashing

D. SHA2-256 encryption

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

QUESTION 38 How do HF-Series arrays handle caching since NimbleOS 2.2+?

A. access-based eviction

- B. first in, first out (FIFO)
- C. Adaptive Flash Cache (AFC)
- D. Most Recently Used (MRU)

Correct Answer: C Section: (none) Explanation



Explanation/Reference:

QUESTION 39 How is SmartSecure licensed?

A. free of charge

B. based on capacity (per 1TB)

C. per array

D. per model

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

QUESTION 40

DRAG DROP

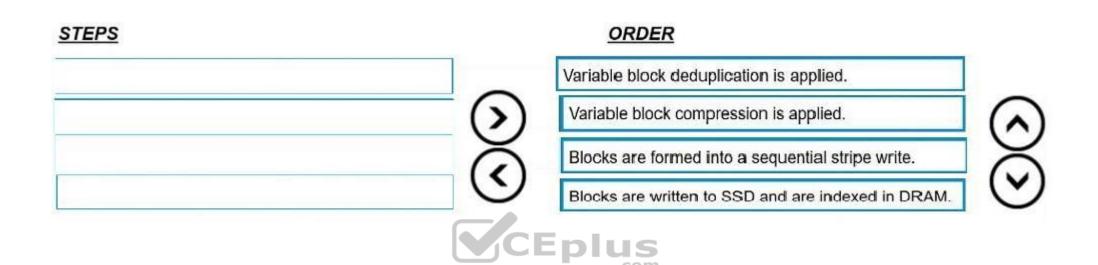
List the steps of how the AF-Series handles blocks during write operation when they reach DRAM in the correct order.

Select and Place:



<u>STEPS</u>	ORDER	
Blocks are formed into a sequential stripe write.		
Variable block compression is applied.		\bigcirc
Blocks are written to SSD and are indexed in DRAM.		\simeq
Variable block deduplication is applied.		igotimes

Correct Answer:



Section: (none) Explanation

Explanation/Reference:

Reference: https://www.academia.edu/34785774/NTS-2001-I Nimble Introduction and Administration Course Revision 5

QUESTION 41 Why does HPE recommend configuring an NTP server during array initialization?

- A. This will help ensure logs and events are easy to follow based on a known timeline.
- B. It guarantees data consistency when using Triple+ RAID combined with snapshotting.
- C. It is mandatory for InfoSight integration.
- D. It is required for replication across arrays.

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

QUESTION 42 A tebibyte (TiB) is compressed of how many gigabytes (GB)?

- A. 900
- B. 1000
- C. 1024



D. 976, 565

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Reference: https://www.quora.com/How-many-GB-are-in-1-TB

QUESTION 43 How should you create a fully

provisioned volume?

- A. Disable compression
- B. Set reserve to 100%
- C. Set quota to 100%
- D. Use the Fully Provisioned option

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

QUESTION 44 Which performance graph is only available

for HF-Series?

- A. Cache Hit Rate
- B. Latency
- C. MB/s
- D. IOPS

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

QUESTION 45 What does each AF-Series data chunk contain?

(Select three.)

- A. metadata
- B. triple parity
- C. hash data
- D. parity
- E. ECCF. data

Correct Answer: ADF Section: (none) Explanation

Explanation/Reference:

Explanation:

Every chunk in a stripe consists of Data, Metadata (checksums, sequence number, etc...), and Parity (XOR of Data).

QUESTION 46 DRAG DROP







Match the event log severity levels to their descriptions.

SEVERITY

Select and Place:

SEVERITY	DESCRIPTION
All	An event has occurred that does not require action to be taken and does not affect system performance. This level of event is useful for troubleshooting or for determining system trends.
Critical	An event has occurred that might impact system performance. Action will likely be necessary, but no damage will occur if the action is not taken immediately.
Info	An event has occurred that requires immediate attention. Data loss or hardware damage may occur if action is not taken quickly. It also triggers email notification, defined on the ADMINISTRATION tab.
Warning	Events are shown regardless of severity. Manual intervention may or may not be needed.

Correct Answer:

	DESCRIPTION
Info	An event has occurred that does not require action to be taken and does not affect system performance. This level of event is useful for troubleshooting or for _ determining system trends.
Warning	An event has occurred that might impact system performance. Action will likely be necessary, but no damage will occur if the action is not taken immediately.
Critical	An event has occurred that requires immediate attention. Data loss or hardware damage may occur if action is not taken quickly. It also triggers email notification, defined on the ADMINISTRATION tab.
All	Events are shown regardless of severity. Manual intervention may or may not be needed.

Section: (none) Explanation

Explanation/Reference:

QUESTION 47 Which replication scenarios does SmartReplicate support? (Select three.)

- A. reciprocal (bi-directional)
- B. primary to DR
- C. synchronous long distance
- D. one to manyE. many to one

Correct Answer: ABE Section: (none)
Explanation

Explanation/Reference:

QUESTION 48 Which tool do you need to use to manage multiple HPE Nimble arrays from one single console for true scale-out management?

- A. InfoSight
- B. Nimble WebUI
- C. Global Dashboard
- D. OneView



Correct Answer:	В
Section: (none)	
Explanation	

Explanation/Reference:

QUESTION 49 What is the maximum number of expansion shelves that HF-Series models can support?

A. 2

B. 3

C. 6

D. 12

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Reference: https://h20195.www2.hpe.com/v2/GetPDF.aspx/a00008274enw.pdf

QUESTION 50 Which deduplication approach does the

AF-Series use?

A. object-level differencing

B. post-process deduplication

C. host-based deduplication

D. inline deduplication

Correct Answer: D Section: (none) Explanation



Explanation/Reference:

QUESTION 51 DRAG DROP

List in the correct order what the system will do when you promote a downstream replication partner.

Select and Place:



Begins taking snapshots per defined schedules.
Brings the most recently replicated snapshots online as volumes (the contents of the newly available volumes now consistent with the last replicated snapshots).
Clears "Replicate From".
Creates a second (local) instance of the volume collection and assumes ownership.
Gives ownership of volumes to the downstream array.
Suspends the replication relationship associated with the volume collection.





Correct Answer:

TEPS	ORDER
	Suspends the replication relationship associated with the volume collection.
	Gives ownership of volumes to the downstream array.
	Creates a second (local) instance of the volume collection and assumes ownership.
	Clears "Replicate From".
	Brings the most recently replicated snapshots online as volumes (the contents of the newly available volumes now consistent with the last replicated snapshots).
	Begins taking snapshots per defined schedules.

Section: (none) Explanation

Explanation/Reference:

QUESTION 52 DRAG DROP

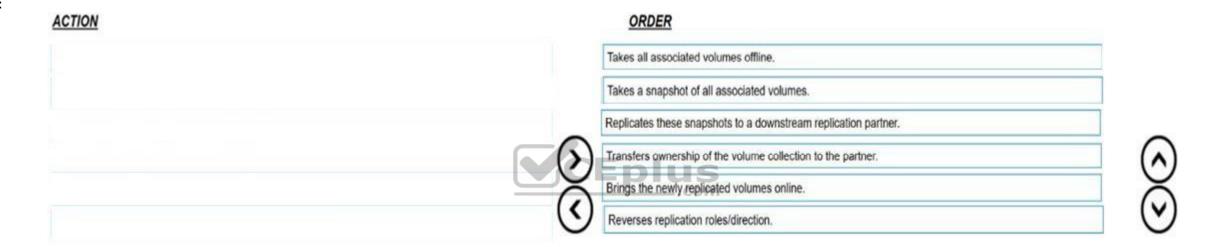
List in the correct order what the system will do when you perform a handover action.

Select and Place:



<u>ACTION</u>	ORDER
Brings the newly replicated volumes online.	
Replicates these snapshots to a downstream replication partner.	
Reverses replication roles/direction.	
Takes a snapshot of all associated volumes.	(\mathfrak{d})
Takes all associated volumes offline,	$\tilde{\alpha}$
Transfers ownership of the volume collection to the partner.	O .

Correct Answer:



Section: (none) Explanation

Explanation/Reference:

QUESTION 53 What is the size of a sequential stripe write for the AF-Series?

- A. 8MB
- B. 10MB
- C. 256MB
- D. 1GB

Correct Answer: B Section: (none) Explanation

Explanation/Reference:

Reference: Nimble introduction and admin.pdf



QUESTION 54 Which technology is being used to protect the contents of the NVDIMM in the event of an unexpected power loss to the AF-Series array?

- A. TwinCap
- B. Ni-Cd battery
- C. UltraCAp
- D. Ni-MH battery

Correct Answer: D Section: (none) Explanation

Explanation/Reference:

QUESTION 55 Which properties of volumes must be the same in order for deduplication to take place between them? (Select two.)

- A. They must both be unable to be replicated
- B. They must both have compression disabled
- C. They must have the same block size
- D. They must have the same app category

Correct Answer: BD Section: (none) Explanation

Explanation/Reference:



QUESTION 56 Which statement is true about removing an expansion shelf after it is activated?

- A. It can be removed from the solution after you migrate data to another volume.
- B. It can be removed from the solution after you migrate to another RAID group.
- C. It cannot be removed from the solution.
- D. It can be removed from the solution after you use the ungroup CLI command or perform the ungroup action from WebGUI.

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

Reference: NTS-2001-I_Nimble_Introduction_and_Admin.pdf

QUESTION 57 What are HPE Nimble data reduction technologies? (Select three.)

- A. Variable block deduplication.
- B. Data packing
- C. Express layout
- D. Variable block compression
- E. Adaptive Data Reduction
- F. Zero pattern elimination

Correct Answer: ADE Section: (none)

Explanation

Explanation/Reference:

QUESTION 58 It is possible to configure multiple SMTP servers for HPE

Nimble arrays?

A. Yes, after initial configuration

B. No, never

C. Yes, but only via Web GUI

D. Yes, but only via CLI

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

Reference: Nimble_Introduction_and_Admin.pdf

QUESTION 59 What are possible 'Replication Status' states when replicating volumes across arrays? (Select three.)

A. In-progress

B. Copying

C. Pending

D. Failed

E. N/A

F. Scheduled

Correct Answer: ACE Section: (none) Explanation

Explanation/Reference:

Reference: Nimble_Introduction_and_Admin.pdf

QUESTION 60 Which statement is correct about

HPE InfoSight?

- A. InfoSight is included with all HPE Nimble arrays for no additional cost.
- B. InfoSight is enabled for all arrays with active ProActive Care contracts.
- C. InfoSight is available as plug-in for VMWare vCenter and Microsoft SystemCenter.
- D. InfoSight is accessible through the HPE Service Processor.

Correct Answer: A Section: (none) Explanation

Explanation/Reference:

QUESTION 61 What action must be taken before the expansion shelf can join the storage pool?

- A. Capacity licenses need to be added.
- B. Controller cache needs to be upgraded.
- C. It must be activated.





D. it must be pre-formatted.

Correct Answer: C Section: (none) Explanation

Explanation/Reference:

QUESTION 62 What are primary components of AF controller head shelf? (Choose three.)

A. removable NVDIMM

B. hard disk drivesC. solid state disks

D. dual power supplies

E. dual controllers

F. management controller

Correct Answer: CDE Section: (none) Explanation

Explanation/Reference:

Reference: NTS-2001-I_Nimble_Introduction_and_Admin.pdf

