

(NS0-510) NetApp Certified Implementation Engineer – Backup and Recovery Practice Exam Questions

Note: Answers for the practice questions can be found at the end of this document.

1. Why are WAFL file system snapshots performed quickly?
 - a. only the root inode is copied
 - b. only the changed data blocks are copied
 - c. only the file system metadata is copied
 - d. only the block map file is copied
 - e. only the inodes of modified files are copied

2. What will a SnapVault incremental backup transfer?
 - a. all of the data blocks in the source qtree that have changed since an initial baseline transfer was performed
 - b. all of the data blocks in the source qtree that have changed since the previous successful transfer
 - c. all of the data blocks in the source qtree that have changed since the last SnapVault snapshot was performed
 - d. all of the data blocks in the source qtree that have changed between the time of the last SnapVault snapshot and the previous successful transfer

3. What happens if the connection between a synchronous SnapMirror primary system and secondary system is lost?
 - a. The replication mode is set to asynchronous.
 - b. When communication is restored, a baseline transfer must be performed.
 - c. When communication is restored, the 'snapmirror resync' command must be run.
 - d. The 'snapmirror quiesce' command must be run to avoid additional errorsPath Selection Policy.

4. Which program/process will SnapManager for Microsoft Exchange communicate with to perform a snapshot backup of a LUN?
 - a. SnapDrive for Windows
 - b. Windows Volume Shadow Copy Service
 - c. Data ONTAP VSS Hardware Provider
 - d. NetApp Protection Manager
 - e. NetApp DataFabric Manager server
 - f. Windows NTFS

5. SnapProtect communicates with which program/process to allocate space for a vault copy of a Windows LUN?
 - a. SnapDrive for Windows
 - b. Windows Volume Shadow Copy Service
 - c. Data ONTAP VSS Hardware Provider
 - d. NetApp Protection Manager
 - e. NetApp DataFabric Manager server
 - f. NetApp System Manager

6. To prevent data loss during a failure event, what will each node in a standard HA-pair do?
 - a. Mirror its disks with its partner node's disks using SyncMirror
 - b. Replicate its data volumes with its partner node's volumes using SnapMirror
 - c. Mirror its NVRAM contents to its partner node's NVRAM
 - d. Cache write data on a shared quorum disk
 - e. Cache write data on the root volume

7. In a stretch, MetroCluster data is replicated between cluster nodes using _____?
 - a. Qtree SnapMirror
 - b. Asynchronous SnapMirror
 - c. Synchronous SnapMirror
 - d. SyncMirror
 - e. SnapVault

8. When using Qtree SnapMirror to replicate a qtree, the destination volume must be _____.
 - a. Exactly the same size as the source qtree
 - b. At least the size of the source qtree plus 5 percent
 - c. Exactly the same size as the source volume
 - d. The same size as the source volume plus 5 percent
 - e. The same size as the source volume or larger

9. When using Volume SnapMirror to replicate a volume, the destination volume must be _____.
 - a. Exactly the same size as the source qtree
 - b. At least the size of the source qtree plus 5 percent
 - c. Exactly the same size as the source volume
 - d. The same size as the source volume plus 5 percent
 - e. The same size as the source volume or larger

10. How can System Manager 2.0 be used to display the used and available aggregate space?
- In the Home tab, navigate to Storage > Aggregates then select the storage system.
 - In the Home tab, select the storage system and navigate to Storage > Aggregates.
 - In the Storage window, select the storage system and double-click Aggregates.
 - In the Storage window, select Aggregates then select the storage system.
 - In the Storage window, select Capacities then select the storage system.
11. Which NetApp data protection products create application consistent backups? (Choose three.)
- SnapManager
 - SnapMirror
 - SnapProtect
 - SnapVault
 - SyncMirror
 - NetApp Syncsort Integrated Backup
12. What does the SnapProtect “Primary (Classic) copy” of the sub client represent?
- the original data
 - a snapshot backup of the data
 - a vault backup of the data
 - a mirror backup of the data
 - a tape backup of the data
13. The license for SnapManager for Exchange should be installed on which system?
- the Microsoft Exchange server
 - the system where SnapManager for Exchange is installed
 - the NetApp storage system
 - the system where SnapManager for Exchange is installed and the NetApp storage system
 - the system where SnapManager for Exchange is installed or the NetApp storage system
 - the Microsoft Exchange server and the NetApp storage system

14. The SnapManager for Oracle product requires which license to be installed on the NetApp storage system?
- FlexClone license
 - SnapDrive license
 - SnapManager license
 - SnapMirror license
 - SnapRestore license
 - SnapVault license
15. After enabling NPIV, what is configured on the NetApp Storage controller to take advantage of the extra WWNs?
- Fabric is enabled
 - ISCSI is enabled
 - WWNs are added to the lgroup list
 - Fibre channel ports are added to the host
16. Which features of OnCommand Standard edition are NOT included in OnCommand Express edition? (Choose two.)
- DataFabric Manager Services
 - Discovery and monitoring of NetApp storage systems
 - Discovery and monitoring of agents, clusters, and SAN hosts
 - Performance Advisor
 - Protection capability
 - Provisioning capability
17. An OnCommand dataset may contain which types of virtual objects?
- only entire Datacenters
 - only entire datastores
 - only individual virtual machines
 - datacenters and datastores only
 - datastores and virtual machines
 - datacenters, datastores and virtual machines

18. According to best practices, onto which system should you install the SnapProtect Virtual Server Agent (VSA)?
- the SnapProtect Server
 - the DataFabric Manager server
 - the vCenter server
 - a virtualized media agent host
 - the NetApp Management Console host
19. Which command do you use to create and retain six daily snapshots, four weekly snapshots and snapshots every two hours during business hours?
- `snap create volume 6 4 2@8-17`
 - `snap create volume 4 6 2@10,12,14,16,18`
 - `snap sched volume 6 4 2@8-17`
 - `snap sched volume 4 6 2@10,12,14,16,18`
 - `snap sched volume 4 6 5@10,12,14,16,18 a target`
20. Which command do you use to perform a SnapVault initial baseline transfer?
- `snapvault baseline`
 - `snapvault copy`
 - `snapvault initialize`
 - `snapvault replicate`
 - `snapvault start`
21. Which is an invalid SnapVault schedule specification?
- 25
 - 26@19
 - 29@8,12,16
 - 28@mon-fri@19-21
 - 30@tue,thu,sat@12-24
 - 27@mon,tue,wed,thu,fri@19,20,21

22. When a Protection Manager protection policy specifies mirror protection, which data mirroring technology is utilized?
- Asynchronous Volume SnapMirror
 - Qtree SnapMirror
 - RAID10
 - Semi-synchronous Volume SnapMirror
 - Synchronous Volume SnapMirror
 - SyncMirror
23. How many protection policies can be assigned to a single Protection Manager dataset?
- 0 – Protection policies are not assigned to datasets.
 - 1 - Datasets have exactly one protection policy associated with them.
 - 2 – You may have one protection policy for remote backups and another for mirror replication.
 - 3 – You may have one protection policy for local snapshots, another for remote backups, and a third for mirror replication.
24. What is the SnapProtect disk library used to do?
- map client directories to physical disk addresses
 - store disk geometry information
 - store information about which disks to backup
 - store metadata backup for SnapProtect operations
 - store the SnapProtect client agent programs
25. Which Provisioning Manager provisioning policies are available to SnapProtect?
- All Provisioning Manager provisioning policies are available.
 - All Provisioning Manager provisioning policies whose names begin with “SnapProtect” are available.
 - No Provisioning Manager provisioning policies are available.
 - Only “remote backup” type policies are available.
 - Only the three provisioning policies that come with SnapProtect are available.

26. A DataFabric Manager resource pool may contain which types of objects?
- Aggregates and entire storage systems
 - Aggregates and FlexVols
 - Only aggregates containing RAID groups using RAID-DP
 - Only aggregates from the same storage system
 - Only aggregates from the same DFM resource group
 - Only FlexVols
27. When creating a DataFabric Manager resource pool using the Add Resource Pool wizard, which information must be supplied? (Choose two.)
- Resource pool name
 - Description
 - Owner
 - Contact e-mail address for alerts
 - Time Zone
 - Physical Resources
 - Resource Pool Label
 - Space Thresholds
28. When creating a Provisioning Manager provisioning policy using the Add Provisioning Policy wizard, which information must be supplied?
- Name of the policy
 - Storage type: NAS, SAN
 - Custom field information
 - Level of storage availability required
 - Resource label
 - Deduplication type and schedule
 - NAS or SAN container settings
 - Nearly Full and Full thresholds
 - Provisioning script
29. What is the Provisioning Manager provisioning policy resource label used to do?
- assign a description to a storage pool
 - assign a specific name to newly provisioned volumes
 - assign a specific name to newly created resource pools
 - select specific resources to provision space from
 - select the DFM resource group the policy will be applied

30. To configure a storage system as a member of a mirrored HA pair, which licenses must be installed?
- ha and mirror
 - cluster and mirror
 - cf and syncmirror_local
 - cluster and cluster_remote
 - high_avail and syncmirror_remote
31. Which command do you use to specify the disk pool a disk drive will belong?
- aggr pool -d
 - disk assign
 - mirror add
 - pool add
 - syncmirror pool -d
32. What are the iSCSI naming conventions? (Choose two.)
- ver
 - iqn
 - iscsi
 - eui
33. Which guideline do you follow when cabling an HA pair?
- each disk loop requires a single Fibre Channel port on each node
 - Fibre Channel HBAs should be installed into expansion slots in a specific order
 - Fibre Channel HBAs should reside in different slots on each node
 - Fibre Channel ports on expansion adapters should be used before using onboard ports
34. Which command will set the controller failover mode correctly?
- options fcp.cfmode
 - fcp cfmode set
 - fcadmin set cfmode
 - fcp set cfmode

35. Which command do you use to view the state and schedule of a SnapVault target?
- snapvault sched
 - snapvault show
 - snapvault snap sched
 - snapvault state
 - snapvault status
36. Through which two windows can you monitor the progress of a SnapProtect backup? (Choose two.)
- Event Monitor
 - Event Viewer
 - Job Controller
 - Job History
 - Status Monitor
37. SnapManager for Exchange can delete backups automatically, based on which two factors? (Choose two.)
- how little disk space is unused
 - how many backups are stored
 - how much disk space the backups consume
 - how old the backups are
 - the success or failure of the previous backup attempt
38. Using Protection Manager, for volumes that are NOT currently being backed up, how can you protect them?
- by adding them to a DFM resource group
 - by adding them to a protected dataset
 - by adding them to a resource pool
 - by assigning a backup schedule to them
 - by assigning a protection policy to them mpio.sys, mpath.sys, msdsm.sys

39. To perform a failback operation from the Protection Manager disaster recovery node back to the original SnapMirror source?
- Use the dfm failback command.
 - Use the dfdrm mirror command.
 - Use the snapmirror failback commandcli-iscsi.
 - In the Disaster Recovery tab of the Datasets window, select the dataset and click on the Failback button.
 - In the Disaster Recovery tab of the Datasets window, select the dataset and click on the Reverse button.
40. You can perform the failback of Exchange volumes from a Business Continuity site to the original production site by using the SnapManager for Exchange _____.
- Business Continuity Console
 - Disaster Recovery tool
 - Recovery Management page
 - Replication Management Console
 - Windows MMC plug-in
41. Prior to initializing a Volume SnapMirror relationship, the destination volume needs to be in which state?
- Multiplexed
 - Offline
 - Online and Read-Only
 - Online and Read-Write
 - Restricted
42. Prior to initializing a Qtree SnapMirror relationship the destination volume needs to be in which state?
- Multiplexed
 - Offline
 - Online and Read-Only
 - Online and Read-Write
 - Restricted

43. After initializing a Qtree SnapMirror relationship the destination qtree will be _____ and the destination volume will be _____.
- Read-Only / Online and Read-Only
 - Read-Only / Online and Read-Write
 - Read-Only / Restricted
 - Read –Write / Online and Read-Write
 - Read –Write / Restricted
44. SnapRestore can be used to revert which three entities?
- Aggregates, Volumes, and Qtrees
 - Aggregates, Volumes, and Single Files
 - Volumes, Qtrees, and Directories
 - Volumes, Qtrees, and Single Files
 - Qtrees, Directories, and Single Files
45. A mirrored aggregate will be constructed of disks from _____ and _____.
- Controller 1 and Controller 2
 - Plex A and Plex B
 - Pool 0 and Pool 1
 - Raid Group 1 and Raid Group 2
 - Shelf 1 and Shelf 2
46. What are the two steps to discover a newly created and mapped LUN in Windows diskpart utility?
- rescan, detail disk
 - rescan, disk list
 - rescan, show disk
 - rescan, list disk
47. Before using SnapRestore to revert a volume to a previous SnapShot, the volume must be in which state?
- Mirrored – consistent
 - Online
 - Offline
 - Restricted
 - Synchronized

48. Can SnapRestore be used to restore a file to a location other than the original location of the file?
- a. no
 - b. yes, but only if the file is a LUN
 - c. yes, but only within the same volume
 - d. yes, to anywhere within the same aggregate
 - e. yes, to any location within the same storage system
49. IP compression can only be enabled on which type of SnapMirror relationship?
- a. Asynchronous Volume SnapMirror
 - b. MetroCluster
 - c. Qtree SnapMirror
 - d. Semi-Synchronous Volume SnapMirror
 - e. Synchronous Volume SnapMirror
50. What does Volume SnapMirror replicate to the destination volume?
- a. all the contents of the source volume except for data in Qtrees
 - b. all the contents of the source volume except for non-Qtree data
 - c. only the active file system of the source volume
 - d. the active file system and all of the Snapshots in the source volume
 - e. the contents of a specified Snapshot only
51. What does Qtree SnapMirror replicate to the destination qtree?
- a. all data in all Qtrees in a single volume
 - b. all snapshots containing the specified qtree
 - c. only the active file system of the source qtree
 - d. the contents of a specified Snapshot only
 - e. the active file system and all of the Snapshots of the source qtree
52. What is the basic unit of replication for SnapVault?
- a. Aggregate
 - b. Block
 - c. Directory
 - d. Qtree
 - e. Volume

53. Can the `vol copy` command be used to copy a volume from a 32-bit to a 64-bit aggregate?
- yes, at any time
 - no, not at any time
 - only on a system running Data ONTAP 8.x in 7-Mode
 - only on a system running ONTAP 8.x in Cluster Mode
54. The 'vol copy' process requires which communications protocol to be enabled on the controllers?
- RSH
 - SSH
 - SSL
 - Telnet
 - TFTP
55. Which Data ONTAP configuration option can be used to allow a limit on the SnapVault and SnapMirror data transfer rate?
- `replication.limit.enable`
 - `replication.throttle.enable`
 - `transfer.limit.enable`
 - `transfer.limit.allow`
 - `transfer.throttle.enable`
56. Which Data ONTAP configuration option can be used to limit the data transfer rate on all SnapVault and SnapMirror transfers?
- `replication.limit.outgoing.max_kbs`
 - `replication.throttle.outgoing.max_kbs`
 - `transfer.limit.max_rate`
 - `transfer.limit.outgoing.max_kbs`
 - `transfer.throttle.outgoing.max_kbs`

57. Which snapmirror.conf option should be used to limit the data transfer rate on a specific SnapMirror relationship?
- kbs
 - limit
 - max
 - restrict
 - throttle
58. For a FAS3170 system running Data ONTAP 8.0 without the NearStore license, what is the maximum number of concurrent SnapVault replication operations?
- 16
 - 32
 - 64
 - 128
 - 256
59. For a FAS3170 system running Data ONTAP 8.0 with the NearStore license, what is the maximum number of concurrent SnapVault replication operations?
- 64
 - 128
 - 256
 - 384
 - 512
60. Which tool can be used to determine the product best suited to address a customer's data protection needs?
- Data ONTAP Feature Matrix
 - Logical Replication Tool
 - NetApp Replication Advisor
 - Simulated I/O Tool
 - Synergy

61. If a customer wants to replicate user directory data from site A to site B with a recovery point objective of 20 minutes, which product should you recommend?
- Snapshot copies
 - SnapVault
 - Qtree SnapMirror
 - Synchronous Volume SnapMirror
 - Asynchronous Volume SnapMirror
 - Semi-synchronous Volume SnapMirror
62. If a customer wants to replicate medical data from site A to site B with a recovery point objective of 15 seconds, which product or feature should you recommend?
- Snapshot copies
 - SnapVault
 - Qtree SnapMirror
 - Synchronous Volume SnapMirror
 - Asynchronous Volume SnapMirror
 - Semi-synchronous Volume SnapMirror
63. When using the Interoperability Matrix Tool, which search criteria is mandatory?
- Components
 - Configuration name
 - Last modified date
 - Status
 - Storage Solution
64. The SnapProtect solution requires which version of Data ONTAP® to be running on the NetApp storage system?
- 7.3.3 or later versions of 7G
 - 7.3.5 or later versions of 7G
 - 8.0.1 or later versions of 8.0 7-mode
 - 7.3.3 or later versions of 7G, or 8.0.1 or later versions of 8.0 7-mode
 - 7.3.5 or later versions of 7G, or 8.0.1 or later versions of 8.0 7-mode

65. The SnapProtect solution requires which version of the DataFabric Manager server?
- a. 3.8 or later
 - b. 4.0 or later
 - c. 4.0.1 or later
 - d. 4.0.2 or later
 - e. 5.0 or later

Answer Key for Practice Questions:

1. A
2. D
3. A
4. B
5. E
6. C
7. D
8. B
9. E
10. B
11. A,C,F
12. E
13. E
14. E
15. C
16. C,D
17. F
18. D
19. E
20. E
21. E
22. A
23. B
24. D
25. B
26. A
27. A,F
28. A,B,G
29. D
30. C
31. B
32. B,D
33. B
34. D
35. E
36. B,C
37. B,D
38. B
39. B
40. D

- 41. E
- 42. D
- 43. B
- 44. B
- 45. C
- 46. D
- 47. B
- 48. C
- 49. A
- 50. D
- 51. C
- 52. D
- 53. B
- 54. A
- 55. B
- 56. B
- 57. A
- 58. C
- 59. D
- 60. C
- 61. C
- 62. F
- 63. E
- 64. B
- 65. D