Website: https://vceplus.com
VCE to PDF Converter: https://vceplus.com/vce-to-pdf/
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C9020-668

IBM Storage Technical V1

Exam A

QUESTION 1

A customer needs to exchange encrypted data cartridges with another company. A competitor offers a solution that encrypts the data with static keys loaded the tape drives. IBM proposes IBM TS1150 tape drives using the built-in encryption feature.

Which competitive advantage does the IBM TS1150 solution provide?

A. It achieves better throughput by encrypting and compressing data at the same time.
B. It stores keys in the drive that can then be exported to partners in a secure format.
C. It compresses the data before encrypting to achieve a better compression ratio.
D. it writes a unique encrypted data key on the cartridge using public/private key pairs.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
How the encryption key server processes encryption keys
In system-managed and library-managed tape encryption, unencrypted data (clear text) is sent to the tape drive (TS1150 Tape Drive, TS1140 Tape Drive, TS1130 Tape Drive or TS1120 Tape Drive), and converted to ciphertext using a symmetric 256-bit AES Data Key (DK) generated by the encryption key server. The ciphertext is then written to tape. The encryption key server uses a single, unique Data Key for each Enterprise Tape Cartridge. This Data Key is also encrypted, or wrapped, by the encryption key server using the public key from an asymmetric Key Encrypting Key (KEK) pair. This process creates an Externally Encrypted Data Key (EEDK). The EEDK is written to the cartridge memory and to three additional places on the tape media in the cartridge. The tape cartridge now holds both the encrypted data and the means to decrypt it for anyone holding the private part of the KEK pair.
The DK may also be wrapped a second time using the public key of another party to create an additional EEDK. Both EEDKs can be stored on the tape cartridge. In this way, the tape cartridge can be shipped to a business partner holding the corresponding private key. That private key would allow the DK to be unwrapped and the tape decrypted by the business partner.

References: https://www.ibm.com/support/knowledgecenter/en/STFS69_3.3.0/ts7740_encryption_keys.html

QUESTION 2

A customer wants to improve storage efficiency within a data center. The customer requires a low latency storage system that has a highly parallel architecture and comprehensive data reduction with pattern removal.

Which system should the technical specialist propose?

A. IBM DS8886 HPFE
B. IBM FlashSystem A9000RC. IBM FlashSystem V9000
D. IBM XIV with compression

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
IBM FlashSystem A9000 is a highly parallel, all-flash storage solution for cloud-scale businesses:
▪ Harness the performance of highly parallel architecture and IBM FlashCore technology in one innovative system ▪
Optimize storage economics with pattern removal, deduplication, and compression

Incorrect Answers:
B: IBM FlashSystem(R) A9000R is a grid-scale, all-flash storage platform.

References: https://www-01.ibm.com/common/ssi/rep_ca/7/872/ENUSAG16-0087/ENUSAG16-0087.PDF

QUESTION 3
Which solution provides virtualization, consolidation, and automation for a cloud deployment?

A. IBM XIV with IBM Spectrum Protect
B. IBM FlashSystem 900
C. IBM Virtual Storage Center
D. IBM Spectrum Accelerate

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
IBM Virtual Storage Center is a storage virtualization platform and a storage management solution for cloud-based and software-defined storage. Virtual Storage Center enables organizations to monitor, automate and analyze storage.

Incorrect Answers:
B: IBM FlashSystem 900 all-flash storage arrays accelerate applications in mission-critical environments.
D: Use IBM Spectrum Accelerate to build a flexible, cost-effective cloud environment: deploy on any x86 server.

References: http://www-03.ibm.com/software/products/en/ibm-virtual-storage-center

QUESTION 4
A customer looking for an all-flash solution is evaluating IBM products. The primary concern for the customer is rapid growth of its database environment.

Which IBM flash solution should the specialist recommend to control capacity utilization?

A. IBM XIV Gen3 with SSD
B. IBM DS8886 HPFE
C. IBM Flashsystem A9000
D. IBM FlashSystem 900

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
IBM FlashSystem 900 is designed to accelerate the applications that drive business – like those using an Oracle Database.
IBM FlashSystem 900 can scale usable capacity from as low as 2 TB to as much as 57 TB in a single system.

FlashSystem 900 delivers Tier 0 top application performance with up to 1.1 million 100% random read IOPS and 600,000 100% random write IOPS.

References: https://www.ibm.com/us-en/marketplace/flash-storage

QUESTION 5
A customer is looking to take advantage of data reduction capabilities of the IBM SAN Volume Controller.

Which tool should the technical specialist use?

A. Capacity Magic
B. Comprestimator
C. Disk Magic
D. IBM Storage Tier Advisor Tool

Correct Answer: A

Section: (none)
Explanation
Explanation/Reference:
Capacity Magic calculates the effective storage capacity of your current and future IBM Disk Subsystems through an easy-to-use graphical dialog. This tool is available to IBM Business Partners.

Incorrect Answers:
B: The Comprestimator utility uses advanced mathematical and statistical algorithms to perform the sampling and analysis process in a very short and efficient way. The utility also displays its accuracy level by showing the maximum error range of the results achieved based on the formulas it uses. The utility runs on a host that has access to the devices that will be analyzed, and performs only read operations so it has no effect whatsoever on the data stored on the device.

C: Disk Magic provides you with a thorough understanding of your current Disk Subsystem performance and enables you to make better purchase and configuration decisions.

D: The IBM Storage Tier Advisor Tool predicts whether the addition of Solid State Drive (SSD), Enterprise Drive and Nearline Drive capacity in conjunction with the Easy Tier function.

References: https://www.codeweavers.com/compatibility/crossover/ibm-capacity-magic

QUESTION 6
A customer needs to import and export volumes between IBM Spectrum Virtualize clusters that are geographically separated.

How can this be accomplished?

A. Create image mode volumes
B. Snapshots with Transparent Cloud Tiering
C. Implement IBM Spectrum Archive
D. Utilize tiering-to-tape media

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Transparent cloud tiering is a licensed function that enables volume data to be copied and transferred to cloud storage. The system supports creating connections to cloud service providers to store copies of volume data in private or public cloud storage.

With transparent cloud tiering, administrators can move older data to cloud storage to free up capacity on the system. Point-in-time snapshots of data can be created on the system and then copied and stored on the cloud storage.

References:

QUESTION 7
A customer has existing SAP HANA production nodes connected to an IBM Elastic Storage Server (ESS). The customer needs to scale out additional ESS nodes to maintain the high I/O throughput requirement.

Which type of nodes should be proposed?

A. Storage nodes with SAS drives
B. Storage nodes with SSD drives
C. Protocol nodes with SAS drives
D. Protocol nodes with SSD drives

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
A scale-out NAS system is comprised of multiple NAS storage nodes with internal or external storage. Each NAS storage node represents the same file systems to user applications. Data is stored across all NAS storage nodes, and adding capacity can be achieved by adding more storage nodes.

References:

QUESTION 8
An IBM DS8886 customer wishes to replicate data from the primary data center to a new secondary data center 310 miles (500km) away while maintaining a low recovery point objective.

Which offering should the technical specialist recommend?

A. SnapMirror
B. Metro Mirror
C. Global Mirror
D. FlashCopy

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Global Mirror is a long-distance remote copy function across two sites using asynchronous technology. Global Mirror processing is designed to provide support for virtually unlimited distance between the local and remote sites, with the distance typically limited only by the capabilities of the network and the channel extension technology.

Incorrect Answers:
B: Metro Mirror provides real-time mirroring of logical volumes between two DS8000 storage units that can be located up to 300 km from each other.

References: https://www.ibm.com/support/knowledgecenter/en/HW213_7.1.0/com.ibm.storage.ssic.help.doc/f2c_copysgintro_1xiohq.html

QUESTION 9
A customer has existing fiber attached storage that has reached the end of life. The customer wants a scalable solution that is easy to manage and integrates with VMware. The customer prefers an IBM A9000R based solution, but is concerned about migrating the virtual machines and ESX boot volumes.

Which explanation addresses the customer's concern?

A. Use VMware Storage vMotion to migrate virtual machines and boot volumes.
B. IBM A9000R has both a vCenter and VAAI plug in.
C. Use IBM Spectrum Control to virtualize and move existing storage to the new IBM A9000R.
D. IBM A9000R has a built in capability to copy the existing data.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
VMware VMotion: Allows the live migration of running VMs from one physical server to another, one data store to another, or both. This migration has zero downtime, continuous service availability, and complete transaction integrity.

References: http://www.redbooks.ibm.com/redpapers/pdfs/redp5425.pdf

Using the IBM Spectrum Accelerate Family in VMware Environments, page 15

QUESTION 10
A customer is purchasing an IBM 3952 Tape Frame for an IBM TS3500 Tape Library.

In which resource can you find the customer's detailed worksheets to complete the installation?

A. IBM 3952 Tape System SAPR Guide
B. IBM TS3500 Tape Library with System z Attachment Guide
C. IBM 3952 Introduction and Planning Guide
D. IBM TS3500 Introduction and Planning Guide

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 11
IBM has proposed Easy Tier as part of a storage solution to address less-active data on flash in a storage environment.

How does Easy Tier Address this problem?

A. It moves data to the appropriate tier.
B. It moves data to cloud storageC. It creates space-efficient flash copies.
D. It archives data to tape.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
The system includes IBM Easy Tier, which is a function that responds to the presence of drives in a storage pool that also contains hard disk drives (HDDs). The system automatically and nondisruptively moves frequently accessed data from HDD MDisks to flash storage MDisks, thus placing such data in a faster tier of storage.

The system supports these tiers: ▪
Tier 0 flash

Tier 0 flash tier exists when the pool contains high-cost, high performance flash drives.

▪ Tier 1 flash

Tier 1 flash tier exists when the pool contains tier 1 flash drives. Tier 1 flash drives are lower-cost flash drives, typically with larger capacities, but slightly lower performance and write endurance characteristics. ▪ Enterprise tier

Enterprise tier exists when the pool contains enterprise-class MDisks, which are disk drives that are optimized for performance. ▪

Nearline tier

Nearline tier exists when the pool contains nearline-class MDisks, which are disk drives that are optimized for capacity.

References: https://www.ibm.com/support/knowledgecenter/STVLF4_7.8.0/spectrum.virtualize.780.doc/svc_easy_tier.html

QUESTION 12

A customer is considering a storage consolidation project. The IBM technical specialist wants to show how the IBM solution will be more cost-effective than the competitors.

Which tool should the technical specialist use?

A. IBM Compresimator
B. IBM TCOnow!
C. IBM Disk Magic
D. IBM Spectrum Scale Discovery Checklist

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
TCOnow! for Disk is designed for storage architects to compare the initial costs and TCO of the most popular arrays from EMC, IBM, HPE, NetApp and Hitachi.

Incorrect Answers:
A: Comprestimator is a command line host-based utility that can be used to estimate an expected compression rate for block devices.

References: http://cioview.com/disk.html

QUESTION 13

A customer needs to bridge two Fibre Channel SANs that are 100 miles (161 km) apart.

Which device is needed at both sites?

A. Multiprotocol router
B. 16 Gb Fibre Channel switch

C. PEX extender

D. 10 Gb Ethernet Layer 2 switch

Correct Answer: A
Section: (none)
Explanation
Explanation/Reference:
For example, The IBM System Storage SAN06B-R multiprotocol router entry-level multiprotocol extension router designed to connect two SANs over a

wide distance using the Internet as the interconnection fabric (upgrades to enterprise-level functions are available). References:

https://www.ibm.com/storage/san

QUESTION 14
What should a technical specialist request to provide latency analysis for an Oracle DB system and help predict performance impact of IBM Flash Systems?

A. DB Trace report

B. nmon analyzer report

C. Perfrep report

D. AWR report

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
IBM FlashSystem offers customers the ability to speed up databases to rates that may not be possible even by over provisioning the fastest spinning disk arrays.
You can use native Oracle Database tools to determine the effects that flash storage can have on Oracle Database environments.
Oracle utilities—Statspack and now Automatic Workload Repository (AWR) reports —provide database administrators with detailed information concerning a
snapshot of database execution time. This snapshot provides statistics on wait events, latches, storage input and output volumes, and timings as well as various
views of memory and SQL activities.

References: https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=ORW03038USEN

QUESTION 15
A customer with a block storage from a competitor desires an OpenStack ready platform for storage management.

Which solution should the technical specialist recommend?

A. IBM Spectrum Control

B. IBM Spectrum Scale
C. IBM Spectrum protect Suite
D. IBM PowerVM NovaLink

Correct Answer: B
Section: (none)
Explanation
Explanation/Reference:
Using IBM Spectrum Scale in an OpenStack cloud environment offers many benefits, including the enterprise features of IBM Spectrum Scale and consolidated storage options.
OpenStack include the Cinder component, which Provides virtualized block storage for virtual machines.

Incorrect Answers:
A: IBM Spectrum Control is a comprehensive solution that can significantly improve monitoring, automation and analytics capabilities in multi-vendor storage environments.

References: https://www.ibm.com/support/knowledgecenter/en/STXKQY_4.2.3/com.ibm.spectrum.scale.v4r23.doc/bl1ins_openstackusecase.htm

QUESTION 16
Which IBM FlashSystem A9000 function enables the division of storage system administration tasks into logical domains?

A. Storage-based permissions
B. Access-based permissions
C. Role-based permissions
D. interface-based permissions

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
IBM FlashSystem A9000 enables a secure isolation of logical domains of storage resources among numerous tenants, with the ability to set different QoS levels for each domain. Multi-tenancy enables the division of storage system administration tasks into logical domains by using role-based permissions.

References: IBM FlashSystem A9000 Product Guide, page 2
http://www.redbooks.ibm.com/redpapers/pdfs/redp5325.pdf

QUESTION 17

A customer has a fully licensed single frame IBM TS4500 with four 3592 drives installed, using about 200 storage slots, and a small IBM TS3310 library with two LTO-6 drives and 60 LTO-6 cartridges. The customer wants to consolidate the two libraries and move the LTO cartridges into the IBM TS4500.

Which upgrade to the IBM TS4500 achieves this goal?

A. Upgrade the LTO-6 drive models and move them into the existing frame.
B. Use the existing frame, and add two new LTO-6 drives.
C. Add a new drive frame, with two new LTO-7 drives.
D. Move the two LTO-6 drives into a new IBM TS4500 drive frame.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
TS4500 tape library frame models: Frame Position 1 capacity: Up to 12 tape drives and 550 storage slots

References: https://www.ibm.com/support/knowledgecenter/en/STQRQ9/com.ibm.storage.ts4500.doc/ts4500_library_structure.html

QUESTION 18
Which non-concurrent capacity upgrade is possible for a customer with an IBM FlashSystem 900?

A. Systems purchased with eight 2.9 TB flash modules can be expanded to twelve 2.9 TB flash modules.
B. Systems purchased with eight 5.7 TB flash modules can be expanded to twelve 2.9 TB flash modules.
C. Systems purchased with eight 1.2 TB flash modules can be expanded to twelve 2.9 TB flash modules.
D. Systems purchased with eight 1.2 TB flash modules can be expanded to twelve 5.7 TB flash modules.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
FlashSystem 900 can be populated with up to 12 x 1.2 TB IBM MicroLatency modules in increments of 4, 6, 8, 10, or 12; or up to 12 x 2.9 TB or 5.7 TB IBM MicroLatency modules in increments of 6, 8, 10, or 12.
These modules of either 1.2 TB, 2.9 TB, or 5.7 TB cannot be intermixed. Capacity can be upgraded by purchasing the AF23 (1.2 TB), AF24 (2.9 TB)) or AF25 (5.7 TB) IBM MicroLatency module feature codes as MES upgrades. Here are the upgrade paths: ▪ Using AF23 (1.2 TB)
Start with 2.4 TB and grow to 4.8 TB 7.2 TB 9.6 TB, or 12 TB ▪
Using AF24 (2.9 TB)

Start with 5.8 TB and grow to 11.6 TB, 17.4 TB, 23.2 TB, or 29 TB ▪
Using AF25 (5.7 TB)
Start with 11.4 TB and grow to 22.8 TB, 34.2 TB, 45.6 TB, or 57 TB

References: http://www.redbooks.ibm.com/technotes/tips1261.pdf

QUESTION 19
A customer issued an RFP to replace EMC Disks. Vendors are being asked to provide the best competitive advantage in their proposals.

What should the IBM proposal on an IBM FlashSystem A9000 include in the bid?

https://vceplus.com/

A. All software features included in base price
B. Flash cache
C. HyperSwap migration
D. Fully-automated software tiering

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 20
IBM has proposed IBM Spectrum Control for a customer who is currently using multiple vendor tools to manage a complex heterogenous storage environment.

How does IBM Spectrum Control do this?

A. Simplifies single-pane of glass management

B. Large-scale single name space

C. Enables cloud-based management

D. Heterogeneous data migration

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
IBM Spectrum Control offers a single pane of glass to monitor the performance of all your IBM Spectrum Scale clusters.

References: https://www.ibm.com/developerworks/community/blogs/869bac74-5fc2-4b94-81a2-6153890e029a/entry/test?lang=en

QUESTION 21
A customer has released a RFP for a cloud solution to monitor and analyze storage usage on IBM Spectrum Virtualize and EMC disk. The proposed solution will replace on-site monitoring software.

Which product should the technical specialist recommend?

A. IBM Spectrum Control Storage Insights

B. IBM Electronic Service Agent

C. IBM Storage Alert Manager

D. IBM Spectrum Scale

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
IBM Spectrum Control Storage Insights optimizes your on-premises storage infrastructure and data placement using predictive analytics in this cloud-based solution.

Incorrect Answers:
B: IBM Electronic Service Agent is a no-charge software tool that resides on your system to automatically and continuously monitor, collect, and submit hardware problem information to the IBM Electronic Support website. IBM Electronic Service Agent can also routinely collect and submit hardware, software, performance, and system configuration information, which might help IBM Support in diagnosing problems.

D: IBM Spectrum Scale, based on IBM General Parallel File System (GPFS™) , is a proven, scalable, high-performance file management system that is being used extensively across multiple industries worldwide. IBM Spectrum Scale provides simplified data management and integrated information lifecycle tools capable of managing petabytes of data and billions of files, in order to address the growing cost of managing ever growing amounts of data.

References: https://www.ibm.com/ms-en/marketplace/analytics-driven-data-management

QUESTION 22

Which tool can be used to model the service time of the storage workload for a customer considering a storage consolidation to a new IBM storage platform?

A. Disk Magic
B. IBM Spectrum Control
C. Arxscan
D. Batch Magic

Correct Answer: A
Section: (none)
Explanation
Explanation/Reference:
Disk Magic is a tool for sizing and modelling disk systems for various servers.

Using Disk Magic will provide you with more knowledge about how performance for your specific workloads will change under various growth and/or hardware configuration scenarios.

Incorrect Answers:
C: Arxscan delivers fast and meaningful reporting and analysis for any size and type of storage environment, providing capacity, utilization, performance and dozens of other important metrics for all types of physical and virtual storage platforms and supports all major vendors in one, light weight, affordable solution.

D: Batch Magic is a powerful application for tape and batch window tuning and capacity planning.

References: http://www-304.ibm.com/partnerworld/gsd/showimage.do?id=25691

QUESTION 23

A security policy for a customer specifies a need for similar methods to manage encryption keys for disk and tape storage. A recent proposal includes the IBM TS4500 and IBM Storwize V5030.

What should the technical specialist highlight?

A. IBM Spectrum Control will manage encryption for both products.
B. IBM Security Key Lifecycle Manager will manage keys for both products.

C. The same USB key can contain the encryption keys for both products.

D. IBM Spectrum Protect will provide encryption keys for both products.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
IBM Security Key Lifecycle Manager for Dell Migration Customers centralizes, simplifies and automates the encryption key management process to help minimize risk and reduce operational costs. It offers robust key storage, serving and lifecycle management for IBM and non-IBM storage devices.

References: http://www-03.ibm.com/software/products/en/key-lifecycle-manager-dell

QUESTION 24
A customer wants to migrate from IBM DS5300 to an IBM FlashSystem V9000 and wants to determine reductions in physical storage requirements.

Which tool should the customer use?

A. IBM Comprestimator Utility

B. Capacity Magic

C. IBM Storage Tier Advisor Tool

D. Storage Consolidation Evaluation Tool hosted by Alinean

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:
Capacity Magic calculates the effective storage capacity of your current and future IBM Disk Subsystems through an easy-to-use graphical dialog. This tool is available to IBM Business Partners.
The IBM tool Capacity Magic can be used to verify capacity and space utilization plans.

Incorrect Answers:
A: The Comprestimator utility uses advanced mathematical and statistical algorithms to perform the sampling and analysis process in a very short and efficient way. The utility also displays its accuracy level by showing the maximum error range of the results achieved based on the formulas it uses. The utility runs on a host that has access to the devices that will be analyzed, and performs only read operations so it has no effect whatsoever on the data stored on the device.

C: The IBM Storage Tier Advisor Tool predicts whether the addition of Solid State Drive (SSD), Enterprise Drive and Nearline Drive capacity in conjunction with the Easy Tier function.

D: The IBM Systems Consolidation Evaluation Tool, from Alinean, Inc., can help you obtain an independent view of potential savings. In a matter of minutes you can see high level, quantifiable results for potential total cost of ownership and critical financial savings.

References: https://www-01.ibm.com/support/docview.wss?uid=tss1wp102305&aid=1

QUESTION 25
Which feature of a base IBM XIV system is a technical advantage over competitive storage arrays?

A. Always-on Compression
B. SSD adaptive read caching
C. Hot encryption
D. IBM Spectrum Control Software

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Uniquely among IBM products, the XIV Storage System offers hot encryption. When encryption is enabled on the XIV system, all data that resides on it is encrypted within minutes, with no performance impact.

References: https://www.ibm.com/support/knowledgecenter/en/STJTAG/com.ibm.help.xiv.doc/xiv_elearning_reinventingstoragewithxivscript.htmlIBM XIV Security with Data-at-Rest Encryption, page 2

QUESTION 26
Which statement correctly applies to PRO and Copy Data Services?

A. RPO is the minimum time interval that a mirrored volume or consistency group lag behind the source volume
B. Volumes backed up from clones do not affect RPO.
C. RPO is a pre-defined parameter based on the type of replication selected.
D. Multiple consistency groups can be supported with asynchronous mirroring for different RPOs.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

Consistency groups creates a consistent point-in-time copy of multiple volumes, with negligible host impact. You can enable FlashCopy consistency groups from the DS CLI.

Note: Recovery Point Objective (RPO) describes the interval of time that might pass during a disruption before the quantity of data lost during that period exceeds the Business Continuity Plan's maximum allowable threshold or "tolerance."

References: https://www.druva.com/blog/understanding-rpo-and-rto/

QUESTION 27
A customer is interested in purchasing an IBM TS7650G ProtecTIER Gateway for its production site and one for replication at its DR site. The DR site is a target only site.

How is the cost of the solution affected by the replication?

A. ProtecTIER replication is included with base license.
B. ProtecTIER replication is included with hardware and no license is required.
C. ProtecTIER replication licensing is required at both sites.
D. ProtecTIER replication licensing is required at the primary site only.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
You must have a license for the replication feature for each ProtecTIER server in the replication grid.

References: https://www.ibm.com/support/knowledgecenter/en/STVRB7_3.2.0/ts7650ipg_replication.html

QUESTION 28
A mainframe customer us considering moving from a native tape environment to a virtualized environment across two sites. A study has shown that it needs more than one IBM TS7700 at each site for performance and capacity reasons.

What is the benefit of using IBM TS7700 hybrid grid?

A. It allows the customer to write data to the optimal storage hardware for each workload type.
B. It allows clusters to connect using both FC and IP networks.
C. It provides double the number of logical volumes.
D. It permits a combination of IBM TS1130 and IBM TS1140 drives in one cluster.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
All TS7700 models can coexist in a grid. If only a disk and a tape-attached model are combined, that configuration is called a hybrid grid.

QUESTION 29
A cloud service provider is looking to provide a scalable solution that provides quality of service capabilities, ease of management, deduplication, and integration with OpenStack and VMware while providing sub-millisecond response time.

Which solution should the technical specialist recommend?

A. IBM Storwize V5010
B. IBM FlashSystem 900
C. IBM FlashSystem A9000R
D. IBM Spectrum Scale

Correct Answer: C
Section: (none)
Explanation
Explanation/Reference:
IBM FlashSystem A9000 can use the well-established IBM code base for OpenStack and REST API support.
IBM Spectrum Control Base V3.0 allows a simplified deployment and efficient integration of IBM FlashSystem A9000 with the VMware vCloud suite.
The FlashSystem A9000R data reduction node implements data deduplication and compression functions.
A9000 provides consistent and predictable microsecond response times and simplicity that you need.

References: http://www.redbooks.ibm.com/redpapers/pdfs/redp5325.pdf
IBM FlashSystem A9000 Product Guide

QUESTION 30
A customer's compliance department requires that data is kept for ten years. The data must be available as needed, and the customer must ensure that the data cannot be modified.

Which technology should the specialist recommend?

A. NVMe flash
B. SED drives
C. NL-SAS drives

D. WORM tape cartridges

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Write-once, read-many (WORM) tape cartridge characteristic. WORM format pervades the entirety of every WORM cartridge. The WORM tape media is formatted to give every block on a WORM cartridge write-once, read-many protection. Additionally, the cartridge memory (CM) has a WORM indicator byte in the cartridge type field.

Incorrect Answers:
A: NVM Express (NVMe) or Non-Volatile Memory Host Controller Interface Specification (NVMHCI) is a logical device interface specification for accessing nonvolatile storage media attached via a PCI Express (PCIe) bus. The acronym NVM stands for non-volatile memory, which is commonly flash memory that comes in the form of solid-state drives (SSDs).

B: An SED is a self-encrypting hard drive with a circuit built into the disk drive controller chip that encrypts all data to the magnetic media and decrypts all the data from the media automatically. All SEDs encrypt all the time from the factory onwards, performing like any other hard drive, with the encryption being completely transparent or invisible to the user.

References: https://www.ibm.com/support/knowledgecenter/en/STPRH6/com.ibm.storage.drives.doc/con_3592ipg_worm_characteristics.html

QUESTION 31
A customer has an existing IBM XIV Gen3 solution with 3 TB drives and nine modules. While performance is acceptable, the customer wants to increase the performance of small-block reads. The current nine modules are running at 60% of capacity.

Which solution should the technical specialist recommend?

A. Add the SSD caching option on five modules.
B. Add the SSD caching option on all nine modules.
C. Add IBM Spectrum Control Software with an IBM FlashSystem 900.
D. Add three mode data modules to improve performance.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

SSD Caching improves small-block random read performance. SSD Caching in the XIV system can improve performance of any workload that is suffering from high latency due to a high amount of small-block random read misses.

Consider a situation where you do not have an XIV system yet, but you want to know whether you might benefit from by extending the XIV with SSD Caching. On most storage systems, you can inspect I/O statistics and determine whether a workload can benefit from SSD Caching. If the storage system has granular reporting, you can take the following steps:
▪ Sort your workload by read and write percentages.
The read portion of the workload can potentially benefit from the SSD Caching. A typical candidate workload for SSD Caching consists of 80% reads and 20% writes.

Etc.

References: http://www.redbooks.ibm.com/redpapers/pdfs/redp4842.pdf
Solid-State Drive Caching in the IBM XIV Storage System (May 2012), page 20

QUESTION 32
When implementing disk encryption on an existing IBM TS7700, which action does a client need to take for the existing virtual volumes to be encrypted after the encryption feature is enabled?

A. No additional customer action is required once encryption is enabled.
B. The copy refresh command must be issued for each of the existing volumes.
C. Any existing volumes will have to expire and be reused before being encrypted.
D. The customer must assign existing virtual volumes with a new encryption policy.

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
An encryption policy configuration is the set of rules, or policies, that specify which volumes are to be encrypted.

References: https://www-01.ibm.com/support/docview.wss?uid=ssg1S7005315&aid=1
IBM TS7700 Version 4 Release 1, Introduction and Planning Guide, page 123

QUESTION 33
How does an IBM XIV System provide a guarantee of consistent performance even under the most dynamically changing elastic cloud workload environments?

A. Built in performance monitoring of key resources
B. Support for multiple versions of OpenStack software

C. Use of a distributed grid architecture

D. Capacity on Demand addition of useable storage

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
IBM XIV Cloud Storage for Service Providers, or client hosted cloud solutions require elastic, rapid response, and dynamic demand that is captured within XIV's 485 TB linear scalability, and the immediate and automatic redistribution, without interruption, of added capacity. The grid design stripes data across all modules and disks, incorporating data redundancy for consistent and predictable I/O performance that is always load balanced.

Incorrect Answers:
D: With Capacity on Demand (CoD) you effectively buy a certain amount of capacity up front but also get up to 3 more modules shipped with the machine. You can start using this extra capacity when your business requirements demand it, at which point you will be asked by IBM to purchase it. The advantage here is that you physically get a bigger machine up front with all the performance benefits that bestows, plus you don't have to contact IBM to start using that extra capacity.
References: http://www.redbooks.ibm.com/abstracts/tips1238.html?Open

QUESTION 34
A customer has a two-frame IBM TS4500 Tape Library with 24 IBM TS1150 drives. The L frame is the left-most frame and the customer wants to add slots for 1100 cartridges. The available physical space in the data center is limited, so high density (HD) frames are needed. The customer has some existing IBM TS3500 storage frames that could be repurposed.

What does the customer need to understand about the upgrade?

A. The IBM TS3500 storage frames must be installed to the right of the L frame. B.
A redeployed IBM TS3500 storage frame must be the last (right-most) frame.
C. An IBM TS3500 storage frame must be upgraded to HD2 before it can be redeployed.

D. One IBM TS3500 storage frame may be installed and must be frame position one.

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Leverage flexibility that enables the library to grow from both the right and the left side of the first L frame since models can be placed in any active position.

References: https://www.ibm.com/us-en/marketplace/ts4500

QUESTION 35
A customer wants to replace its legacy block storage environment with a new IBM FlashSystem A9000R solution and is concerned about properly estimating consolidated storage capacity after deduplication and compression savings.

Which tool should be used?

A. IBM Comprestimator
B. IBM Storage Tier Advisor Tool
C. IBM Data Reduction Estimator Tool
D. Capacity Magic

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Data Reduction Estimator tool is a command-line host-based utility for estimating the data reduction saving on block devices.
In order to help with the profiling and analysis of existing user workloads that need to be migrated to a new system, IBM provides a highly accurate data reduction estimation tool which supports both deduplication and compression. The tool operates by scanning target workloads on any legacy storage array (IBM or 3rd party) and then merging all scan results to provide an integrated system level data reduction estimate.

References: https://delivery04.dhe.ibm.com/sar/CMA/SSA/06hb9/3/Data_Reduction_Estimation_Tool-1.02.htm

QUESTION 36
A customer has a requirement for 250,000 IOPS and 200 TB of capacity. The customer requires IBM SSR code upgrades at no additional charge.

Which solution should the technical specialist recommend to the customer?

A. IBM DS8884 with 1.2 TB drives and HPFE
B. IBM XIV System with 3 TB drives and SSD cache
C. IBM Storwize V7000 with 1.2 TB drives and 800 GB SSDs
D. IBM FlashSystem V9000 with IBM Storwize V5010 with 1.2 TB drives

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Reference: https://www.ibm.com/developerworks/community/blogs/storageneers/entry/true_flash_architecture_in_ibm_ds8870_250_000_iops_9_tb_1u?lang=en_us

QUESTION 37
What is the minimum role level needed to download support log files to troubleshoot the IBM Spectrum Virtualize software?

A. Administrator
B. Monitor
C. Security Administrator
D. Service

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 38
A customer has a single frame IBM TS4500 Tape Library with six 3592-E07 drives. A new open systems server was recently purchased and, because of budget constraints, the customer has decided to use less expensive LTO-7 tape media and drives while protecting investment in existing tape cartridges. What is the most economical way to achieve this goal?

A. Replace 3592 drives with LTO-7 drives in existing frame
B. Add six LTO-7 drives in a new frame
C. Add six LTO-7 drives in the existing frame
D. Replace the frame and add LTO-7 drives

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 39
A customer is looking to deploy a private cloud with replication across four data centers.
Which solution should the technical specialist recommend?

A. IBM FlashSystem A9000
B. IBM Storwize V7000
C. IBM XIV
D. IBM DS8884

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 40
A customer wants a new tape library. The customer currently uses LTO-5 tapes but has some older archive tapes on LTO-4.
What is the highest level tape drive the customer can install and still read the older archive tapes and write to the LTO-5 tapes?

A. LTO-7
B. LTO-5
C. LTO-4
D. LTO-6
Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Reference: https://larryjordan.com/articles/product-review-the-challenges-of-archiving/

QUESTION 41
Which feature of the IBM XIV provides a benefit for analytic workloads?

A. Multiple RAID layers
B. Flash Tier
C. Bluemix integration
D. Data distribution

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 42
What is the default configuration of a RAID protection level in an IBM DS8884 HPFE that affects the usable capacity?

A. RAID-10
B. RAID-1
C. RAID-5
D. RAID-6

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 43
An IBM TS4500 has experienced I/O errors that have prevented moving the library into production. IBM has verified that the configuration is valid and performed the replacement of multiple parts.
What is the next step the technical specialist should perform?

A. Facilitate a meeting with IBM and customer executives to discuss available options to resolve the situation.
B. Escalate the issue through the complaint process (CeritsSit) and explain this process and next steps to the customer.
C. Perform an in-depth problem analysis and follow up with appropriate actions to resolve the issue.

D. Conduct a workshop with customer system administrators and IBM technical field support representatives to jointly resolve the problem.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 44
A customer has multiple tiers of storage, is experiencing high growth, and has issues with managing a complex environment. Simplification, ease of management, and storage efficiencies are key requirements. Which product meets the customer's requirements?

A. IBM Storwize V7000
B. IBM FlashSystem 900
C. IBM DS8884
D. IBM Storwize V5020

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 45
A customer is running synchronous replication on IBM Storwize V7000.
What are the requirements for link bandwidth between data centers?

A. Equal to the average write peak Mbps
B. Greater than the average write peak Mbps
C. Equal to the overall write peak Mbps
D. Greater than the overall write peak Mbps

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 46
A customer has a 2-frame disk-only IBM TS7760 and is running out of capacity. There is a requirement to store an additional 2.4 PB of compliance data in the near future.
What is the lowest cost option to accommodate this new data?

A. Add tape attach feature, a minimally configured IBM TS4500 library, and media.
B. Add a second IBM TS7760 subsystem to accommodate 2.4 PB of data.
C. Add IBM Spectrum Archive to work with the IBM TS7760.
D. Implement Copy Export to migrate compliance data from IBM TS7760 to tape.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 47
A scientific customer is evaluating the IBM TS4500 against the Spectra Logic or Quantum Scalar i6000 and suggests that there is no difference since these vendors use IBM manufactured drives in their libraries. What is a key advantage of the IBM TS4500?

A. Vendor agnostic media reporting
B. Faster move time for tape mounts
C. Standard 19'' rack form factor
D. Modular frames for expansion

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 48
Which term describes the maximum amount of data that could acceptably be lost following a disaster?

A. Recovery Restoration Objective
B. Recovery Time Objective
C. Recovery Point Objective
D. Recovery Manager Objective

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:
Reference https://searchsecurity.techtarget.com/answer/A-recovery-point-objective-RPO-vs-a-recovery-time-objective-RTO

QUESTION 49
Which IBM storage solution provides the least latency?

A. IBM FlashSystem V9000
B. IBM FlashSystem 900
C. IBM DS8880 with HPFE
D. IBM V7000 with SSD

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 50
A customer has deployed multiple IBM FlashSystem A9000R systems in its environment and has asked for a graphical report to periodically show capacity growth, utilization, and trends for the systems, pools, and domains.
Which tool generates this report?

A. IBM Storage Automation Plug-in for PowerShell
B. IBM Spectrum Control Base Edition
C. IBM Hyper-Scale Manager
D. Capacity Magic

Correct Answer: C

Section: (none)
Explanation

Explanation/Reference:
Reference https://www.ibm.com/support/knowledgecenter/STJTAG/com.ibm.help.xivgen3.doc/docs/IBM_Hyper-Scale_Manager_5.2_UG.pdf

QUESTION 51
An existing IBM San Volume Controller DH8 cluster consists of two I/O groups with DH8 nodes running IBM Spectrum Virtualize 7.6. Performance analysis shows the cluster requires significant additional memory for the I/O workload. What is the first step the technical specialist should recommend?

A. Upgrade the cluster to the recommended level of code
B. Replace the existing cluster DH8 nodes with SV1 nodes
C. Expand the cluster to 4 I/O groups using DH8 nodes
D. Add additional memory to the existing DH8 nodes

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 52
A customer has asked about the difference between standard RAID and declustered RAID architecture of IBM Spectrum Scale.
Which advantage of declustered RAID should the technical specialist highlight to the customer?

A. Dedicated spare drives
B. Uses a subset of drives in the declustered RAID to rebuild data

C. More predictable performance

D. Load on drives is increased during array rebuild

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 53
A customer needs to control the rapid growth of its database environment while providing the highest performance and lowest latency.
Which solution satisfies the customer's requirements while providing the best total cost of ownership?

A. IBM Spectrum Scale

B. IBM DS8886

C. IBM XIV with SSD

D. IBM FlashSystem V9000

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

QUESTION 54
A customer has acquired a variety of multi-vendor storage systems. The customer would like to implement a comprehensive solution that can significantly improve monitoring, automation and analytics capabilities for this environment. Which IBM solution provides these capabilities?

A. IBM Spectrum Control Advanced Edition

B. IBM Spectrum Control Base Edition

C. IBM Spectrum Copy Data Management

D. IBM Spectrum Accelerate

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
Reference https://www.ibm.com/analytics/products/spectrum-control-advanced/

QUESTION 55
A customer has an IBM SAN Volume Controller cluster with two CF8 nodes that contain one four-port Fibre Channel card. The customer desires to replace these two nodes with two new SV1 nodes running compression. The customer requires that this upgrade occurs without downtime. Which step is needed first to ensure success of this upgrade?

A. Ensure the new SV1 nodes have one expansion enclosure with SSD drives.
B. Make sure there are at least two Fibre Channel cards in the SV1 Nodes.
C. Ensure the CF8 nodes are running at least software version v7.7.1.
D. Determine if the new SV1 nodes have a compression accelerator.

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 56
Which resource informs a storage specialist if a Technical and Delivery Assessment (TDA) has to be done?

A. Systems Assurance Product Review Guide
B. IBM Pre-sale TDA Checklist
C. Trigger Criteria and Designated Product List
D. Digital Techline Center

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:
QUESTION 57
Which simple, non-intrusive process should a technical specialist recommend to obtain an overview of the storage environment?

A. Visual Storage Intelligence study
B. IBM Spectrum Control Base

C. Disk Magic study

D. IBM Spectrum Control Advanced

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 58
An IBM Spectrum Protect customer is considering purchase of IBM Spectrum Protect for Virtual Environments for its large VMware implementation. The customer also needs to archive data to tape. The customer desires to consolidate its diverse software portfolio of multi-vendor solutions to handle storage monitoring and provisioning.
Which solution should the technician discuss with the customer?

A. IBM Spectrum Protect Suite

B. IBM Virtual Storage Center

C. IBM Cloud Object Storage

D. IBM Spectrum Storage Suite

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 59
A customer has a VMware environment with host resource utilization concerns. The customer wants to overcome this issue when purchasing the next storage device.
Which IBM XIV storage hardware integration capability does this customer require?

A. vStorage APIs for Array Integration (VAAI)

B. vStorage APIs for Multipathing (VAMP)

C. vStorage APIs for Site Recovery Manager (VASRM)

D. vStorage APIs for Data Protection (VADP)

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 60
Which IBM product should the technical specialist propose to a customer with multiple PBs of unstructured data that require a single namespace?

A. IBM Spectrum Accelerate
B. IBM Spectrum Archive
C. IBM Spectrum Virtualize
D. IBM Spectrum Scale

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:
Reference https://www.linkedin.com/pulse/spectrum-scale-use-cases-financial-industry-matt-bloom/

QUESTION 61
A potential customer wants to implement a 65 TB repository solution for its open systems backup environment. The customer's existing storage has 90 TB available. Scalability with future clustering and replication is a very important requirement. Which model meets the customer's requirements?

A. IBM TS7650G ProtecTIER Gateway
B. IBM TS7620 ProtecTIER Appliance Express
C. IBM TS7740 VTL
D. IBM TS7760 VTL

Correct Answer: B
Section: (none)
Explanation
Explanation/Reference:

QUESTION 62

Which solution allows the greatest density per unit of rack space?

A. IBM DS8886
B. IBM Elastic Storage Server
C. IBM FlashSystem 900
D. IBM Storwize V7000F

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 63
A client has a large Intel server farm and is using IBM Spectrum Virtualize to present volumes to the servers. The existing backend storage is Dell EMC VNX5800. The client is adding a new VNX5800 storage system and wants to enable volume mirroring. What can the client do to improve availability utilizing the new storage?

A. Enable VMware Virtual Volumes (VVOL) support
B. Implement IBM HyperSwap
C. Mirror volumes with Dell EMC SRDF
D. Place the new storage in a hybrid disk group

Correct Answer: B
Section: (none)
Explanation

Explanation/Reference:

QUESTION 64
A customer has an existing mainframe environment with an IBM DS8884 attached. This frame is only partially populated. The customer is attaching existing IBM POWER servers that require a three-tier storage solution including SSDs. Electrical power is not readily available. Price is also a key criterion. Which addition to the existing system should the technical specialist propose?
A. Add IBM Spectrum Scale in front of the IBM DS 8884 along with additional disks in the IBM DS8884.
B. Add an IBM Storwize V5030 in a new rack.
C. Add an IBM SAN Volume Controller along with an IBM Storwize V7000.

D. Add drive sets to the IBM DS8884.

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 65
A customer has large capacity growth requirements and is concerned about the ability to redistribute the data. The customer experiences long delays in deployment with its current storage vendor.
Which storage system meets the customer's requirements?

A. IBM DS8888
B. IBM FlashSystem V9000
C. IBM ProtecTIER TS7650G
D. IBM FlashSystem A9000R

Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 66
A customer with NAS and block storage is looking at IBM Software-Defined Storage as a means to improve storage efficiency within a data center.
Which product from the IBM Software-Defined Storage Control Plane will help the customer?

A. IBM Spectrum Protect
B. IBM Spectrum Archive
C. IBM Spectrum Accelerate
D. IBM Spectrum Virtualize
Correct Answer: A
Section: (none)
Explanation

Explanation/Reference:

QUESTION 67
A cost sensitive customer has a poor performing EMC storage system and has made significant investment in copy services. IBM has been asked to provide a solution that will complement the EMC storage solution and provide improved response times. Which IBM Storage solution should the technical specialist recommend?

A. IBM FlashSystem A9000
B. IBM SVC with flash drives
C. IBM Elastic Storage Server
D. IBM FlashSystem 900

Correct Answer: C
Section: (none)
Explanation

Explanation/Reference:

QUESTION 68
A customer has an ownCloud file sync and sharing platform attached to an existing IBM Elastic Storage Server (ESS). Due to rapid data growth of this platform, the customer needs to add 300 TB usable storage capacity. Which type of nodes should the technical specialist propose?

A. Flash Nodes
B. Protocol lNodes
C. Management Nodes
D. Storage Nodes

Correct Answer: D
Section: (none)
Explanation

Explanation/Reference:

https://vceplus.com/