

Day-15

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I completed one more test practice today and after a thorough evaluation I need more practice on my theory understanding and read the questions carefully. I have attached the practice test and some important notes regarding instance optimization:

Sr. No.	Subject	Question	Option A	Option B	Option C	Option D	Answer	Correct Answer
1	AWS EC2	What is the main use case of EC2 Spot Instances?	Running reserved workloads	Running fault-tolerant workloads	For dedicated hosting	For free tier usage	B	B
2	AWS EC2	What is the default tenancy of an EC2 instance?	Dedicated	Shared	Reserved	On-demand	B	B
3	AWS EC2	Which EC2 feature allows launching instances from templates?	AMI	Key Pair	EBS	VPC	A	A
4	AWS EC2	How does EC2 Auto Scaling maintain instance performance?	By restarting instances	By automatically adjusting capacity	By shutting down unused instances	By migrating instances	B	B
5	AWS S3	What is S3 Cross-Region Replication used for?	High availability	Cost optimization	Disaster recovery	Secure data access	C	C
6	AWS S3	Which of these is not a storage class in S3?	Standard	Standard-IA	Glacier	Infrequent Storage Class	D	D
7	AWS S3	How does S3 Transfer Acceleration work?	Uses CloudFront edge locations	Increases object replication speed	Deletes unused objects	Uses reserved bandwidth	A	A
8	AWS S3	What is the maximum object size supported by S3?	5 GB	5 TB	50 TB	100 TB	A	B
9	AWS VPC	What is the purpose of a route table in VPC?	To define access policies	To manage traffic flow	To restrict public access	To isolate private networks	B	B
10	AWS VPC	How can you connect multiple VPCs?	Internet Gateway	NAT Instance	VPC Peering	Transit Gateway	C	C
11	AWS VPC	What is the main role of a NAT Gateway?	To route traffic to private subnets	To enable private instances to access the internet	To manage public subnets	To provide encryption for VPC traffic	B	B
12	AWS VPC	What is a key difference between an Internet Gateway and a NAT Gateway?	NAT Gateway is for private traffic	NAT Gateway supports IPv6 only	Internet Gateway is for private networks	Both provide same functionality	A	A
13	AWS EBS	What is the maximum volume size for an EBS General Purpose SSD?	16 TB	64 TB	1 TB	128 TB	B	A
14	AWS EBS	What is the role of EBS snapshots?	Backup for disaster recovery	Secure temporary storage	Increase IOPS	Used for DNS caching	A	A
15	AWS EBS	What is the difference between Provisioned IOPS SSD and General Purpose SSD?	IOPS SSD has higher cost per GB	General Purpose SSD offers more IOPS	General Purpose SSD is slower than HDD	IOPS SSD does not support encryption	C	A
16	AWS EBS	How is EBS encryption managed?	Through a third-party service	Managed by AWS Key Management Service (KMS)	Through user-defined scripts	By enabling encryption in VPC settings	B	B
17	AWS Instance Types	Which instance type is optimized for batch processing?	Compute Optimized	Storage Optimized	Burstable Performance	GPU Instances	C	A
18	AWS Instance Types	Which instance type is best for machine learning workloads?	General Purpose	GPU Instances	Compute Optimized	Storage Optimized	C	B
19	AWS Instance Types	What is the key advantage of Burstable Performance Instances?	Cost efficiency for unpredictable workloads	Consistent high performance	Optimized for heavy processing workloads	Integrated GPU for visualization tasks	C	A

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Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instance types comprise varying combinations of CPU, memory, storage, and networking capacity and give you the flexibility to choose the appropriate mix of resources for your applications. Each instance type includes one or more instance sizes, allowing you to scale your resources to the requirements of your target workload.

EC2 instance are diffrentiated into the following categories:

- **General purpose** – Provide a balance of compute, memory, and networking resources. These instances are ideal for applications that use these resources in equal proportions, such as web servers and code repositories.
- **Burstable performance** – The T instance family is also referred to as burstable performance instances. These instances provide a baseline CPU performance with the ability to burst above the baseline at any time.
- **Compute optimized** – Designed for compute intensive applications that benefit from high performance processors. These instances are ideal for batch processing workloads, media transcoding, high performance web servers, high performance computing (HPC), scientific modeling, dedicated gaming servers, ad server engines, and machine learning inference.
- **Memory optimized** – Designed to deliver fast performance for workloads that process large data sets in memory.
- **Storage optimized** – Designed for workloads that require high, sequential read and write access to very large data sets on local storage. They are optimized to deliver tens of thousands of low-latency, random I/O operations per second (IOPS) to applications.
- **Accelerated computing** – Use hardware accelerators, or co-processors, to perform functions, such as floating point number calculations, graphics processing, or data pattern matching, more efficiently than is possible in software running on CPUs.
- **High-performance computing** – Purpose built to offer the best price performance for running HPC workloads at scale on AWS. These instances are ideal for applications that benefit from high-performance processors, such as large, complex simulations and deep learning workloads.
- **Previous generation** – AWS offers previous generation instance types for users who have optimized their applications around them and have yet to upgrade. We encourage you to use current generation instance types to get the best performance, but we continue to support previous generation instance types.