SAA-Sample Questions

Topic:EC2 -Instance

1. Which of the following EC2 purchase options provides the most cost-effective way to run a steady-state, predictable workload for a 1-year term?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Dedicated Instances

Answer: B) Reserved Instances

Explanation: Reserved Instances provide significant savings (up to 75%) compared to **On-Demand Instances**. These are ideal for predictable, steady-state workloads, such as web applications that need continuous uptime. You commit to using EC2 for a 1- or 3-year term, which allows AWS to offer discounts in return.

---

2. What is the pricing model for an EC2 instance that allows you to bid for unused capacity, offering potentially significant savings but with the risk of instance termination?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Dedicated Instances

Answer: C) Spot Instances

Explanation: Spot Instances allow you to bid for unused EC2 capacity at a potentially lower price than **On-Demand Instances**. While Spot Instances can offer massive cost savings, there is a risk of termination if AWS needs the capacity, which makes them ideal for non-critical, flexible workloads.

---

3. Which EC2 purchase option allows you to use EC2 instances without the upfront costs, providing flexibility to scale based on your needs and pay per hour or second?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Savings Plan
- **D)** Spot Instances

Answer: A) On-Demand Instances

Explanation: On-Demand Instances allow you to pay by the hour or second with no upfront costs. This pricing model is best for workloads that are unpredictable or short-term, providing maximum flexibility and the ability to scale as needed.

---

4. When purchasing Reserved Instances, what is the term length you can select?

- **A)** 1 year or 3 years
- **B)** 6 months or 2 years
- **C)** 1 year or 5 years
- **D)** 3 months or 6 months

Answer: A) 1 year or 3 years

Explanation: Reserved Instances are available for either a 1-year or 3-year term. They are designed for workloads that are expected to run continuously over a long period, and offer significant savings compared to On-Demand pricing.

---

5. What happens if you try to launch an EC2 instance in a region where Spot Instance prices exceed your maximum bid?

- **A)** The instance will be launched, but it will be terminated after 24 hours.
- **B)** The instance will not be launched.
- **C)** The instance will be launched as an On-Demand instance instead.
- **D)** The instance will automatically be placed in a different region.

Answer: B) The instance will not be launched.

Explanation: If the price of **Spot Instances** exceeds your maximum bid, AWS will not launch the instance. Spot Instances are subject to market price fluctuations, and if your bid does not meet the current price, the instance will not be provisioned.

---

6. What EC2 instance pricing model would you use for a workload that requires continuous operation, such as a web application running 24/7?

- **A)** On-Demand Instances

- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Savings Plan

Answer: B) Reserved Instances

Explanation: Reserved Instances are best for workloads requiring continuous operation (e.g., 24/7 web applications). By committing to use instances for 1 or 3 years, you receive substantial cost savings compared to On-Demand Instances.

---

7. Which EC2 instance purchase option would be best for a non-production workload that can be interrupted but requires significant cost savings?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Dedicated Instances

Answer: C) Spot Instances

Explanation: Spot Instances are perfect for non-production workloads that can tolerate interruptions. Since they offer significant cost savings compared to other instance options, they are ideal for flexible, non-critical tasks, such as testing or batch jobs.

---

8. When you launch a Reserved Instance, which of the following factors is NOT required when choosing the reservation?

- **A)** Instance type
- **B)** Availability Zone
- **C)** Operating system
- **D)** Billing frequency

Answer: D) Billing frequency

Explanation: When choosing a **Reserved Instance**, you need to specify the instance type, operating system, and Availability Zone. **Billing frequency** (how you pay for the instance) is part of the payment options, not the configuration choices when selecting the instance.

---

9. Which EC2 purchase option offers a pricing plan where you commit to a certain amount of usage (e.g., 1 year or 3 years) with flexible pricing that can be used across multiple instance types and sizes?

- **A)** Reserved Instances
- **B)** On-Demand Instances

EC2, AMI, and Launch Template Scenario-Based Questions

Question 1: Cost-Effective EC2 Usage

Which EC2 purchase option provides the most cost-effective way to run a steady-state, predictable workload for a 1-year term?
A) On-Demand Instances
B) Reserved Instances
C) Spot Instances
D) Dedicated Instances

✅ Answer: B) Reserved Instances
Explanation: Reserved Instances provide up to 75% savings and are ideal for predictable workloads.

Question 2: Custom EC2 Image

You've configured an EC2 instance with software and settings. You want to reuse this setup for future instances.
What should you do?
A) Create a new EC2
B) Create a Launch Template
C) Create an AMI
D) Use CloudFormation

✅ Answer: C) Create an AMI
Explanation: AMIs capture the OS, app server, and applications of an EC2 instance.

Question 3: EC2 Launch Configuration Reuse

You want to repeatedly launch EC2 instances with the same configuration.
What should you use?
A) AMI
B) EC2 Instance Connect
C) Launch Template
D) CloudWatch Alarm

✅ Answer: C) Launch Template
Explanation: Launch Templates save instance configurations for repeated, consistent launches.

Question 4: EC2 Metadata Access

You want an EC2 instance to securely access instance metadata and IAM credentials.
What should you use?
A) EC2 User Data
B) Instance Metadata Service v2 (IMDSv2)
C) EC2 Console
D) Launch Configuration

✅ Answer: B) Instance Metadata Service v2 (IMDSv2)
Explanation: IMDSv2 provides a more secure way for EC2 to access metadata and IAM roles.

Question 5: Fast Recovery Using AMI

You want to quickly recover an EC2 instance with the same configuration after failure.
What should you do?
A) Launch from the same AMI
B) Create a new VPC
C) Use EC2 Auto Recovery
D) Use EC2 Hibernate

✅ Answer: A) Launch from the same AMI
Explanation: Launching from an AMI recreates an identical instance quickly.

Question 6: Instance Types for Memory-Intensive Apps

You're running an in-memory cache and need high memory performance.
Which instance type is best?
A) T3.micro
B) C6g.large
C) R6i.large
D) M5.large

✅ Answer: C) R6i.large
Explanation: R6i instances are optimized for memory-intensive workloads.

Question 7: Prevent Public Access to EC2

A security audit requires that no EC2 instance has a public IP address.
How can you ensure this during launch?
A) Use a Security Group without port 80
B) Use a private subnet with no internet gateway
C) Disable User Data
D) Select a public subnet but disable EBS optimization

✅ Answer: B) Use a private subnet with no internet gateway
Explanation: Instances in private subnets won't receive public IPs.

Question 8: Stop and Start EC2 Instances

Your application runs only during business hours. You want to save cost by stopping EC2 instances after hours.
Which instance type supports stopping and starting?
A) On-Demand Instances
B) Spot Instances
C) Dedicated Hosts
D) Reserved Instances

✅ Answer: A) On-Demand Instances
Explanation: On-Demand instances can be stopped and started, unlike Spot instances.

Question 9: EC2 Bootstrapping

You want to install packages during the EC2 launch without creating a new AMI.
What should you use?
A) Custom AMI
B) User Data script
C) Lambda function
D) S3 bucket trigger

✅ Answer: B) User Data script
Explanation: User Data runs on first boot and can install software automatically.

Question 10: Reproducible EC2 Deployments

You want to launch test, dev, and prod environments with the same EC2 config.
Which feature should you use?
A) EC2 Placement Group
B) Launch Configuration
C) Launch Template
D) EC2 Fleet

✅ Answer: C) Launch Template
Explanation: Launch Templates provide versioning and consistent instance deployment.

Question 11: Recreate Instance on Failure

Your application must retain the same IP and instance metadata if it fails.
What should you enable?
A) Elastic IP
B) EC2 Auto Scaling
C) EC2 Instance Recovery
D) EC2 Reboot

✅ Answer: C) EC2 Instance Recovery
Explanation: EC2 Recovery restarts the instance in-place without changing its identity.

Question 12: Golden Image Strategy

Your operations team wants to reduce provisioning time for EC2 instances.
Which strategy should you use?
A) Launch from AMI + User Data
B) Use EC2 Launch Configuration
C) Use AWS Cloud9
D) Use a preconfigured AMI (Golden Image)

✅ Answer: D) Use a preconfigured AMI (Golden Image)
Explanation: Golden AMIs contain preinstalled configurations for fast startup.

Question 13: Immutable EC2 Deployment

You want to deploy a new version of your app without modifying existing instances.
Which strategy should you use?
A) In-place update
B) Immutable deployment with Launch Template versioning
C) Rolling update
D) Blue-Green Deployment using Route 53

✅ Answer: B) Immutable deployment with Launch Template versioning
Explanation: Immutable deployment ensures new instances are created for updates.

Question 14: EC2 Spot Interruption

You use EC2 Spot instances for batch jobs. You want to gracefully handle instance termination.
What should you use?
A) EC2 Reboot Notification
B) EC2 Instance Recovery
C) EC2 Spot Instance Termination Notice
D) Lifecycle Hook

✅ Answer: C) EC2 Spot Instance Termination Notice
Explanation: AWS gives a 2-minute warning before interrupting Spot instances.

Question 15: Secure EC2 Access

You want to SSH into an EC2 instance securely using AWS best practices.
What should you use?
A) Store private key in User Data
B) Use EC2 Instance Connect or Systems Manager Session Manager
C) Use hardcoded credentials
D) Use HTTP over port 80

✅ Answer: B) Use EC2 Instance Connect or Systems Manager Session Manager
Explanation: These options allow secure, auditable, and keyless instance access.

- **C)** Savings Plan
- **D)** Spot Instances

Answer: C) Savings Plan

Explanation: Savings Plans offer flexible pricing that applies to multiple instance types and sizes. You commit to a certain amount of usage (e.g., 1 or 3 years), and in return, you receive up to a 72% discount compared to **On-Demand** pricing. This flexibility makes it suitable for diverse workloads.

---

10. Which EC2 purchase option would you use if you need instances to run on dedicated physical server for compliance or licensing reasons?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Dedicated Instances
- **D)** Spot Instances

Answer: C) Dedicated Instances

Explanation: Dedicated Instances run on physically isolated hardware from other customers. This is useful for compliance, licensing, or security reasons, but they do not offer as much control over the physical server as **Dedicated Hosts** do.

---

11. Which EC2 instance purchase option requires the user to pay upfront, and allows for capacity reservations for specific instance types across one or more Availability Zones?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Savings Plan

Answer: B) Reserved Instances

Explanation: Reserved Instances require an upfront payment and allow you to reserve capacity for specific instance types in one or more Availability Zones. This option guarantees you have the necessary resources when needed and provides cost savings over **On-Demand** instances.

---

12. Which EC2 purchase option would you use for a workload that requires instances to run on dedicated physical hardware but doesn't

need persistent storage?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Dedicated Hosts

Answer: D) Dedicated Hosts

Explanation: Dedicated Hosts provide dedicated physical servers for your instances, allowing full control over instance placement. This is useful for compliance, licensing, or specific requirements without needing persistent storage.

---

13. You have an application with unpredictable workloads, and you need EC2 instances to scale based on demand. You also want to optimize costs. Which EC2 purchase option should you consider?

- **A)** Spot Instances
- **B)** Reserved Instances
- **C)** On-Demand Instances
- **D)** Auto Scaling

Answer: A) Spot Instances

Explanation: Spot Instances are best for unpredictable workloads, as they allow you to bid for unused capacity and scale based on demand. You can use **Auto Scaling** with **Spot Instances** to adjust the number of instances dynamically while keeping costs low.

---

14. What is the key difference between Standard and Convertible Reserved Instances?

- **A)** Standard Reserved Instances offer lower pricing but cannot be modified.
- **B)** Convertible Reserved Instances offer a fixed pricing rate and can be modified to different instance types or families.
- **C)** Standard Reserved Instances provide more flexible payment options.
- **D)** Convertible Reserved Instances offer a higher discount than Standard Reserved Instances.

Answer: B) Convertible Reserved Instances offer a fixed pricing rate and can be modified to different instance types or families.

Explanation: Convertible Reserved Instances allow you to change the instance type, family, or operating system during the term, providing flexibility. **Standard Reserved Instances**, however, are fixed for the term, offering lower pricing but no flexibility.

---

15. Which EC2 purchase option is best suited for a workload that requires instances to run on dedicated physical hardware but doesn't need persistent storage?

- **A)** On-Demand Instances
- **B)** Reserved Instances
- **C)** Spot Instances
- **D)** Dedicated Hosts

Answer: D) Dedicated Hosts

Explanation: Dedicated Hosts provide dedicated physical servers for your instances. They are ideal for workloads that need dedicated hardware for compliance, licensing, or specific requirements but don’t require persistent storage.