1. Your developers want to run fully provisioned EC2 instances to support their application code deployments but prefer not to have to worry about manually configuring and launching the necessary infrastructure. Which of the following should they use?

A. AWS Lambda

**B. AWS Elastic Beanstalk**

C. Amazon EC2 Auto Scaling

D. Amazon Route 53

2. Which service would you use to most effectively reduce the latency your end users experience when accessing your application resources over the Internet?

**A. Amazon CloudFront**

B. Amazon Route 53

C. Elastic Load Balancing

D. Amazon Glacier

3. Which of the following is the best use-case scenario for Elastic Block Store?

A. You need a cheap and reliable place to store files your application can access.

B. You need a safe place to store backup archives from your local servers.

C. You need a source for on-demand compute cycles to meet fluctuating demand for your application.

**D. You need persistent storage for the file system run by your EC2 instance.**

4. For data workloads requiring more speed and flexibility than a closely defined structure offers, which service should you choose?

A. Relational Database Service (RDS)

B. Amazon Aurora

**C. Amazon DynamoDB**

D. Key Management Service (KMS)

5. Which AWS tool lets you organize your EC2 instances and configure their network connectivity and access control?

A. Load Balancing

**B. Amazon Virtual Private Cloud (VPC)**

C. Amazon CloudFront

D. AWS endpoints

6. Which of the following would you use to administrate your AWS infrastructure via your local command line or shell scripts?

A. AWS Config

**B. AWS CLI**

C. AWS SDK

D. The AWS Console

7. You need to deploy multiple EC2 Linux instances that will provide your company with Virtual private networks (VPNs) using software called OpenVPN. Which of the following will be the most efficient solutions? (Choose two.)

**A. Select a regular Linux AMI and bootstrap it using user data that will install and configure the OpenVPN package on the instance and use it for your VPN instances.**

B. Search the community AMIs for an official AMI provided and supported by the OpenVPN company.

**C. Search the AWS Marketplace to see whether there’s an official AMI provided and supported by the OpenVPN company.**

D. Select a regular Linux AMI and SSH in to manually install and configure the OpenVPN package.

8. You need to create two subnets in a VPC that has a CIDR of 10.0.0.0/16. Which of the following CIDRs can you assign to one of the subnets while leaving room for an additional subnet? (Choose all that apply.)

**A. 10.0.0.0/24**

B. 10.0.0.0/8

C. 10.0.0.0/16

**D. 10.0.0.0/23**

9. What is an Internet gateway?

A. A resource that grants instances in multiple VPCs’ Internet access

B. An implied router

C. A physical router

**D. A VPC resource with no management IP address**

10. Which of the following are services provided by Amazon Route 53? (Choose three.)

**A. Domain registration**

B. Content delivery network

**C. Health checks**

**D. DNS management**

11. Which of the following actions will you need to perform to use Route 53 to manage a domain that’s being hosted on an external registrar?

A. Request an authorization code from the external registrar.

**B. Copy the name server addresses from Route 53 to the external registrar admin page.**

C. Create a hosted zone CNAME record set.

D. Unlock the domain transfer setting on the external registrar admin page.

12. Which of the following are problems that CloudFront is well-positioned to solve? (Choose two.)

**A. A heavily used website providing media downloads for a global audience**

B. An S3 bucket with large media files used by workers on your corporate campus

C. A file server accessed through a corporate VPN

**D. A popular website with constantly changing content**

13. You create an Auto Scaling group with a minimum group size of 3, a maximum group size of 10, and a desired capacity of 5. You then manually terminate two instances in the group. Which of the following will Auto Scaling do?

**A. Create two new instances**

B. Reduce the desired capacity to 3

C. Nothing

D. Increment the minimum group size to 5

14. You’re running an application that receives a spike in traffic on the first day of every month. You want to configure Auto Scaling to add more instances before the spike begins and then add additional instances in proportion to the CPU utilization of each instance. Which of the following should you implement? (Choose all that apply.)

A. Target tracking policies

**B. Scheduled actions**

**C. Step scaling policies**

D. Simple scaling policies

15. Which of the following provide the most protection against data corruption and accidental deletion for existing objects stored in S3? (Choose two.)

**A. Versioning**

B. Bucket policies

C. Cross-region replication

**D. Using the Standard storage class**

16.You need eight instances running simultaneously in a single region. Assuming three availability zones are available, what’s the minimum number of instances you must run in each zone to be able to withstand a single zone failure?

A. 3

B. 16

C. 8

**D. 4**

17. Which AWS service is best suited to controlling your spending by sending email alerts?

A. Cost Explorer

**B. Budgets**

C. Organizations

D. TCO Calculator

18. Which of the following settings do you *not* need to provide when configuring a reserved instance?

A. Payment option

B. Standard or Convertible RI

**C. Interruption policy**

D. Tenancy

19. Which of the following best describes a spot instance interruption?

**A. A spot instance interruption occurs when the spot price rises above your maximum.**

B. A spot instance interruption is the termination of a spot Instance when its workload completes.

C. A spot instance interruption occurs when a spot request is manually restarted.

D. A spot instance interruption is the result of a temporary outage in an AWS data center.

20. Which of the following benefits of containers such as Docker can significantly reduce your

AWS compute costs? (Choose two.)

A. Containers can launch quickly.

**B. Containers can deliver increased server density.**

C. Containers make it easy to reliably replicate server environments.

**D. Containers can run using less memory than physical machines.**

21. Which of the following payment options is the most expensive when configuring a reserve instance?

A. All Upfront

B. Partial Upfront

**C. No Upfront**

D. Monthly

22. Your online web store normally requires three EC2 instances to handle traffic but experiences double the load each year for the two summer months. Which of the following approaches makes the most sense?

A. Run three on-demand instances 12 months per year and schedule six reserve instances for the summer months.

B. Run three spot instances for the summer months and three reserve instances 12 months/year.

C. Run nine reserve instances for 12 months/year.

**D. Run three reserve instances 12 months/year and schedule six reserve instances for the summer months.**

23. Which of the following services can alert you to malware on an EC2 instance?

**A. AWS GuardDuty**

B. AWS Inspector

C. AWS Shield

D. AWS Web Application Firewall

24. Your company needs direct access to AWS support for both development and IT team leaders.

Which support plan should you purchase?

**A. Business**

B. Developer

C. Basic

D. Enterprise

25. Which of the following would you use to administrate your AWS infrastructure via your local command line or shell scripts?

A. AWS Config

**B. AWS CLI**

C. AWS SDK

D. The AWS Console

26. A Solutions Architect is designing an application that will encrypt all data in an Amazon Redshift cluster. Which action will encrypt the data at rest?

A. Place the Redshift cluster in a private subnet.

**B. Use the AWS KMS Default Customer master key.**

C. Encrypt the Amazon EBS volumes.

D. Encrypt the data using SSL/TLS.

27. A legacy application needs to interact with local storage using iSCSI. A team needs to design a reliable storage solution to provision all new storage on AWS. Which storage solution meets the legacy application requirements?

A. AWS Snowball storage for the legacy application until the application can be re-architected.

B. AWS Storage Gateway in cached mode for the legacy application storage to write data to Amazon S3.

**C. AWS Storage Gateway in stored mode for the legacy application storage to write data to Amazon S3.**

D. An Amazon S3 volume mounted on the legacy application server locally using the File Gateway service.

28. A Solutions Architect is designing an architecture for a mobile gaming application. The application is expected to be very popular. The Architect needs to prevent the Amazon RDS MySQL database from becoming a bottleneck due to frequently accessed queries. Which service or feature should the Architect add to prevent a bottleneck?

A. Multi-AZ feature on the RDS MySQL Database

B. ELB Classic Load Balancer in front of the web application tier

C. Amazon SQS in front of RDS MySQL Database

**D. Amazon ElastiCache in front of the RDS MySQL Database**

29. A company is launching an application that it expects to be very popular. The company needs a database that can scale with the rest of the application. The schema will change frequently. The application cannot afford any downtime for database changes. Which AWS service allows the company to achieve these objectives?

**A. Amazon Redshift**

B. Amazon DynamoDB

C. Amazon RDS MySQL

D. Amazon Aurora

30. A Solution Architect is designing a disaster recovery solution for a 5 TB Amazon Redshift cluster. The recovery site must be at least 500 miles (805 kilometers) from the live site. How should the Architect meet these requirements?

A. Use AWS CloudFormation to deploy the cluster in a second region.

B. Take a snapshot of the cluster and copy it to another Availability Zone.

**C. Modify the Redshift cluster to span two regions.**

D. Enable cross-region snapshots to a different region.

31. A Solutions Architect is designing a new social media application. The application must provide a secure method for uploading profile photos. Each user should be able to upload a profile photo into a shared storage location for one week after their profile is created. Which approach will meet all of these requirements?

A. Use Amazon Kinesis with AWS CloudTrail for auditing the specific times when profile photos are uploaded.

B. Use Amazon EBS volumes with IAM policies restricting user access to specific time periods.

**C. Use Amazon S3 with the default private access policy and generate pre-signed URLs each time a new site profile is created.**

D. Use Amazon CloudFront with AWS CloudTrail for auditing the specific times when profile photos are uploaded.

32. A mobile application serves scientific articles from individual files in an Amazon S3 bucket. Articles older than 30 days are rarely read. Articles older than 60 days no longer need to be available through the application, but the application owner would like to keep them for historical purposes. Which cost-effective solution BEST meets these requirements?

A. Create a Lambda function to move files older than 30 days to Amazon EBS and move files older than 60 days to Amazon Glacier.

B. Create a Lambda function to move files older than 30 days to Amazon Glacier and move files older than 60 days to Amazon EBS.

**C. Create lifecycle rules to move files older than 30 days to Amazon S3 Standard Infrequent Access and move files older than 60 days to Amazon Glacier.**

D. Create lifecycle rules to move files older than 30 days to Amazon Glacier and move files older than 60 days to Amazon S3 Standard Infrequent Access.

33. An organization is currently hosting a large amount of frequently accessed data consisting of key-value pairs and semi-structured documents in their data center. They are planning to move this data to AWS. Which of one of the following services MOST effectively meets their needs?

A. Amazon Redshift

B. Amazon RDS

**C. Amazon DynamoDB**

D. Amazon Aurora

34. A Lambda function must execute a query against an Amazon RDS database in a private subnet.

Which steps are required to allow the Lambda function to access the

Amazon RDS database? (Select two.)

A. Create a VPC Endpoint for Amazon RDS.

**B. Create the Lambda function within the Amazon RDS VPC.**

**C. Change the ingress rules of Lambda security group, allowing the Amazon RDS security group.**

D. Change the ingress rules

of the Amazon RDS security group, allowing the Lambda security group.

E. Add an Internet Gateway (IGW) to the VPC, route the private subnet to the IGW.

35. A popular e-commerce application runs on AWS. The application encounters performance issues. The database is unable to handle the amount of queries and load during peak times. The database is running on the RDS Aurora engine on the largest instance size available. What should an administrator do to improve performance?

A. Convert the database to Amazon Redshift.

B. Create a CloudFront distribution.

**C. Convert the database to use EBS Provisioned IOPS.**

D. Create one or more read replicas.

36. A Solutions Architect is designing the architecture for a new three-tier web-based e-commerce site that must be available 24/7. Requests are expected to range from 100 to 10,000 each minute. Usage can vary depending on time of day, holidays, and promotions. The design should be able to handle these volumes, with the ability to handle higher volumes if necessary. How should the Architect design the architecture to ensure the web tier is cost-optimized and can handle the expected traffic? (Select two.)

**A. Launch Amazon EC2 instances in an Auto Scaling group behind an ELB.**

B. Store all static files in a multi-AZ Amazon Aurora database.

**C. Create an CloudFront distribution pointing to static content in Amazon S3.**

D. Use Amazon Route 53 to route traffic to the correct region.

E. Use Amazon S3 multi-part uploads to improve upload times

37. A call center application consists of a three-tier application using Auto Scaling groups to automatically scale resources as needed. Users report that every morning at 9:00 AM the system becomes very slow for about 15 minutes. A Solution Architect determines that a large percentage of the call center staff starts work at 9:00 AM, so Auto Scaling does not have enough time to scale out to meet demand. How can the Architect fix the problem?

**A. Change the Auto Scaling group-s scale out event to scale based on network utilization.**

B. Create an Auto Scaling scheduled action to scale out the necessary resources at 8:30 AM every morning.

C. Use Reserved Instances to ensure the system has reserved the right amount of capacity for the scale-up events.

D. Permanently keep a steady state of instances that is needed at 9:00 AM to guarantee available resources, but leverage Spot Instances.

38. An e-commerce application is hosted in AWS. The last time a new product was launched, the application experienced a performance issue due to an enormous spike in traffic. Management decided that capacity must be doubled the week after the product is launched. Which is the MOST efficient way for management to ensure that capacity requirements are met?

**A. Add a Step Scaling policy.**

B. Add a Dynamic Scaling policy.

C. Add a Scheduled Scaling action.

D. Add Amazon EC2 Spot Instances.

39. A customer owns a simple API for their website that receives about 1,000 requests each day and has an average response time of 50 ms. It is currently hosted on one c4 large instance. Which changes to the architecture will provide high availability at the LOWEST cost?

**A. Create an Auto Scaling group with a minimum of one instance and a maximum of two instances, then use an Application Load Balancer to balance the traffic.**

B. Recreate the API using Amazon API Gateway and use AWS Lambda as the service backend.

C. Create an Auto Scaling group with a maximum of two instances, then use an Application Load Balancer to balance the traffic.

D. Recreate the API using Amazon API Gateway and integrate

the new API with the existing backend service.

40. A Solutions Architect is designing a solution that includes a managed VPN connection. To monitor whether the VPN connection is up or down, the Architect should use:

A. an external service to ping the VPN endpoint from outside the VPC.

B. AWS CloudTrail to monitor the endpoint.

**C. the CloudWatch TunnelState Metric.**

D. an AWS Lambda function that parses the VPN connection logs.

41. A social networking portal experiences latency and throughput issues due to an increased number of users. Application servers use very large datasets from an Amazon RDS database, which creates a performance bottleneck on the database. Which AWS service should be used to improve performance?

A. Auto Scaling

B. Amazon SQS

**C. Amazon ElastiCache**

D. ELB Application Load Balancer

42. Developers are creating a new online transaction processing (OLTP) application for a small database that is very read-write intensive. A single table in the database is updated continuously throughout the day, and the developers want to ensure that the database performance is consistent. Which Amazon EBS storage option will achieve the MOST consistent performance to help maintain application performance?

**A. Provisioned IOPS SSD**

B. General Purpose SSD

C. Cold HDD

D. Throughput Optimized HDD

43. A Solutions Architect needs to design a solution that will enable a security team to detect, review, and perform root cause analysis of security incidents that occur in a cloud environment. The Architect must provide a centralized view of all API events for current and future AWS regions. How should the Architect accomplish this task?

A. Enable AWS CloudTrail logging in each individual region. Repeat this for all future regions.

B. Enable Amazon CloudWatch logs for all AWS services across all regions and aggregate them in a single Amazon S3 bucket.

C. Enable AWS Trusted Advisor security checks and report all security incidents for all regions.

**D. Enable AWS CloudTrail by creating a new trail and apply the trail to all regions.**

44. A customer has a production application that frequently overwrites and deletes data, the application requires the most up-to-date version of the data every time it is requested. Which storage should a Solutions Architect recommend to bet accommodate this use case?

**A. Amazon S3**

B. Amazon RDS

C. Amazon RedShift

D. AWS Storage Gateway

45. A Solutions Architect is designing a photo application on AWS. Every time a user uploads a photo to Amazon S3, the Architect must insert a new item to a DynamoDB table. Which AWS-managed service is the BEST fit to insert the item?

A. Lambda@Edge

**B. AWS Lambda**

C. Amazon API Gateway

D. Amazon EC2 instances

46. A Solutions Architect is designing an application on AWS that uses persistent block storage. Data must be encrypted at rest.

Which solution meets the requirement?

A. Enable SSL on Amazon EC2 instances.

**B. Encrypt Amazon EBS volumes on Amazon EC2 instances.**

C. Enable server-side encryption on Amazon S3.

D. Encrypt Amazon EC2 Instance Storage.

47. A company is launching a static website using the zone apex (mycompany.com). The company wants to use Amazon Route 53 for DNS. Which steps should the company perform to implement a scalable and cost-effective solution? (Choose two.)

A. Host the website on an Amazon EC2 instance with ELB and Auto Scaling, and map a Route 53 alias record to the ELB endpoint.

B. Host the website using AWS Elastic Beanstalk, and map a Route 53 alias record to the Beanstalk stack.

**C. Host the website on an Amazon EC2 instance, and map a Route 53 alias record to the public IP address of the Amazon EC2 instance.**

**D. Serve the website from an Amazon S3 bucket, and map a Route 53 alias record to the website endpoint.**

E. Create a Route 53 hosted zone, and set the NS records of the domain to use Route 53 name servers.

48. A manufacturing company captures data from machines running at customer sites. Currently, thousands of machines send data every 5 minutes, and this is expected to grow to hundreds of thousands of machines in the near future. The data is logged with the intent to be analyzed in the future as needed. What is the SIMPLEST method to store this streaming data at scale?

A. Create an Amazon Kinesis Firehouse delivery stream to store the data in Amazon S3.

**B. Create an Auto Scaling group of Amazon EC2 servers behind ELBs to write the data into Amazon RDS.**

C. Create an Amazon SQS queue, and have the machines write to the queue.

D. Create an Amazon EC2 server farm behind an ELB to store the data in Amazon EBS Cold HDD volumes.

49. A Solutions Architect is designing a new application that needs to access data in a different AWS account located within the same region. The data must not be accessed over the Internet. Which solution will meet these requirements with the LOWEST cost?

A. Add rules to the security groups in each account.

**B. Establish a VPC Peering connection between accounts.**

C. Configure Direct Connect in each account.

D. Add a NAT Gateway to the data account.

50. A company requires that the source, destination, and protocol of all IP packets be recorded when traversing a private subnet. What is the MOST secure and reliable method of accomplishing this goal.

**A. Create VPC flow logs on the subnet.**

B. Enable source destination check on private Amazon EC2 instances.

C. Enable AWS CloudTrail logging and specify an Amazon S3 bucket for storing log files.

D. Create an Amazon CloudWatch log to capture packet information.

51. A company is launching a marketing campaign on their website tomorrow and expects a significant increase in traffic. The website is designed as a multi-tiered web architecture, and the increase in traffic could potentially overwhelm the current design. What should a Solutions Architect do to minimize the effects from a potential failure in one or more of the tiers?

A. Migrate the database to Amazon RDS.

B. Set up DNS failover to a statistic website.

**C. Use Auto Scaling to keep up with the demand.**

D. Use both a SQL and a NoSQL database in the design.

52. A web application experiences high compute costs due to serving a high amount of static web content. How should the web server architecture be designed to be the MOST cost-efficient?

A. Create an Auto Scaling group to scale out based on average CPU usage.

**B. Create an Amazon CloudFront distribution to pull static content from an Amazon S3 bucket.**

C. Leverage Reserved Instances to add additional capacity at a significantly lower price.

D. Create a multi-region deployment using an Amazon Route 53 geolocation routing policy.

53. A Solutions Architect is designing a web application. The web and application tiers need to access the Internet, but they cannot be accessed from the Internet. Which of the following steps is required?

A. Attach an Elastic IP address to each Amazon EC2 instance and add a route from the private subnet to the public subnet.

**B. Launch a NAT gateway in the public subnet and add a route to it from the private subnet.**

C. Launch Amazon EC2 instances in the public subnet and change the security group to allow outbound traffic on port 80.

D. Launch a NAT gateway in the private subnet and deploy a NAT instance in the private subnet.

54. A Solutions Architect is designing a solution for a media company that will stream large amounts of data from an Amazon EC2 instance. The data streams are typically large and sequential, and must be able to support up to 500 MB/s. Which storage type will meet the performance requirements of this application?

A. EBS Provisioned IOPS SSD

B. EBS General Purpose SSD

C. EBS Cold HDD

**D. EBS Throughput Optimized HDD**

55. A news organization plans to migrate their 20 TB video archive to AWS. The files are rarely accessed, but when they are, a request is made in advance and a 3 to 5-hour retrieval time frame is acceptable. However, when there is a breaking news story, the editors require access to archived footage within minutes. Which storage solution meets the needs of this organization while providing the LOWEST cost of storage?

A. Store the archive in Amazon S3 Reduced Redundancy Storage.

**B. Store the archive in Amazon Glacier and use standard retrieval for all content.**

C. Store the archive in Amazon Glacier and pay the additional charge for expedited retrieval when needed.

D. Store the archive in Amazon S3 with a lifecycle policy to move this to S3 Infrequent Access after 30 days.

56. A Solutions Architect is building a multi-tier website. The web servers will be in a public subnet, and the database servers will be in a private subnet. Only the web servers can be accessed from the Internet. The database servers must have Internet access for software updates. Which solution meets the requirements?

A. Assign Elastic IP addresses to the database instances.

B. Allow Internet traffic on the private subnet through the network ACL.

**C. Use a NAT Gateway.**

D. Use an egress-only Internet Gateway.

57. A Solutions Architect is about to deploy an API on multiple EC2 instances in an Auto Scaling group behind an ELB. The support team has the following operational requirements:

1 They get an alert when the requests per second go over 50,000

2 They get an alert when latency goes over 5 seconds

3 They can validate how many times a day users call the API requesting highly-sensitive data

Which combination of steps does the Architect need to take to satisfy these operational requirements? (Select two.)

A. Ensure that CloudTrail is enabled.

**B. Create a custom CloudWatch metric to monitor the API for data access.**

C. Configure CloudWatch alarms for any metrics the support team requires.

**D. Ensure that detailed monitoring for the EC2 instances is enabled.**

E. Create an application to export and save CloudWatch metrics for longer term trending analysis.

58. A company hosts a popular web application. The web application connects to a database running in a private VPC subnet. The web servers must be accessible only to customers on an SSL connection. The RDS MySQL database server must be accessible only from the web servers. How should the Architect design a solution to meet the requirements without impacting running applications?

A. Create a network ACL on the web server-s subnet, and allow HTTPS inbound and MySQL outbound. Place both database and web servers on the same subnet.

B. Open an HTTPS port on the security group for web servers and set the source to 0.0.0.0/0. Open the MySQL port on the database security group and attach it to the MySQL instance. Set the source to Web Server Security Group.

C. Create a network ACL on the web server-s subnet, and allow HTTPS inbound, and specify the source as 0.0.0.0/0. Create a network ACL on a database subnet, allow MySQL port inbound for web servers, and deny all outbound traffic.

**D. Open the MySQL port on the security group for web servers and set the source to 0.0.0.0/0. Open the HTTPS port on the database security group and attach it to the MySQL instance. Set the source to Web Server Security Group.**

59. While performing the volume status checks, if the status is insufficient-data, what does it mean?

**A. the checks may still be in progress on the volume**

B. the check has passed

C. the check has failed

60. You require the ability to analyze a customer’s clickstream data on a website so they can do behavioral analysis. Your customer needs to know what sequence of pages and ads their customer clicked on. This data will be used in real time to modify the page layouts as customers click through the site to increase stickiness and advertising click-through. Which option meets the requirements for captioning and analyzing this data?

A. Log clicks in weblogs by URL store to Amazon S3, and then analyze with Elastic MapReduce

**B. Push web clicks by session to Amazon Kinesis and analyze behavior using Kinesis workers**

C. Write click events directly to Amazon Redshift and then analyze with SQL

D. Publish web clicks by session to an Amazon SQS queue men periodically drain these events to Amazon RDS   
and analyze