1) You are in charge of your company's AWS infrastructure. One of your Administrators can't figure out what might be the problem causing an EC2 instance's inability to access the internet. While troubleshooting, you confirmed that the instance is launched in a public subnet, the VPC has an internet gateway attached, and the public subnet's route table, security groups and NACL are all configured properly.

What else would you suspect being a cause of this issue?

a) The instance may not have an ENI created
b) The instance could be part of a placement group
c) The instance does not have a public or Elastic IP address assigned/attached
d) The Instance might not be going through a NAT gateway

2) What requirements that need to be satisfied before you can take advantage of enhanced networking feature of EC2? (Choose 2)

a) Instances must be launched from a PV AMI
b) Instances must be launched from a HVM AMI
c) Instances must be EBS backed, not Instance-store backed
d) Instances must be launched in a VPC
e) Instances must be of T2 Micro type

3) Enhanced networking is supported on (select the best answer)

a) Instance-store backed EC2 instances
b) EBS backed Instances
c) **EBS-backed and Instance-Store backed**
d) Neither of them

4) You noticed that each time you launch an instance, a long time is taken for the EC2 instance configuration and to update the OS before it can be ready for the intended use. How can you speed up this process and shorten the time it takes for the instance to be ready for use? (Choose two)

a) Use another scripting language to speed up manual stuff after the instance is launched
b) Use the "user data" field when launching an instance(s) to bootstrap the EC2 instance which is faster than manually updating the instance after it is launched
c) Create an AMI from a ready instance, and use this AMI to launch new instances
d) There is no way you can automate or shorten the time it takes to make an EC2 instance ready after launch

5) What EC2 instance attribute would allow you to pass a script to instruct the instance to communicate with a certificate server and pass its instance ID once launched?

a) AMI roles
b) EC2 tags
c) This needs to be done manually or through an application after the instance is launched
d) You can use the user data field to pass on the required script

6) You are requested to design a cluster of EC2 instances that will be used for a High Performance Computing (HPC) job. The Instances should be deployed in close proximity and ensure low latency and high network throughput.

What AWS features would help you achieve this? (Choose 2)

a) Launch I/O Optimized EC2 instances in one private subnet in an AZ
b) AWS provides best effort bandwidth between instances, and can't guarantee performance or latency
c) Enhanced Networking Instances
d) Use Placement groups

7) You are hired as the AWS SME at YCDIT2, Inc. The very first task you get assigned is, to enhance the remote access and management of the company's AWS EC2 instances. Today, each EC2 instance is accessed separately. You are tasked to centralize the remote access to a single EC2 instance in the company's AWS VPC, then using that instance to connect to the other EC2 instances. You are also requested to ensure that company's EC2 Instances' remote access is locked to only the public IP address 10.5.22.11/24 (YCDIT2 Inc. internet IP range) . Your AWS hosted EC2 instances are all created from a Windows AMI. And the security groups allocated to these instances allow RDP access inbound from all the Internet.
What changes can you make to achieve this task quickly and cost-effectively?

a) Launch a VPN site-to-site connection between the premises and AWS and manage the EC2 instances using their private IPv4 addresses
b) Launch a bastion host on-premise and have all access go through it to the VPC environment
c) Launch a bastion host in the private subnet of the VPC, allow port SSH inbound in the EC2 instance's security group, and attach an Elastic IP to the bastion host
d) Launch a bastion host in the public subnet in the VPC, attach an elastic IP and allow SSH port inbound in the security group
e) Launch a bastion host in the public subnet in the VPC, ensure it has a public IPv4 address, and allow RDP inbound limited to the corporate internet IP 10.5.22.11/24 range only

8) What security group configuration rule is required for your bastion host, in a VPC, in order to allow SSH inbound access to a Linux Bastion host from your IP address 192.168.32.5?

a) Allow Port: SSH (UDP 22), Source 192.168.32.4/30, Inbound
b) Allow Port: SSH (TCP 22), Source 192.168.32.5/31, Outbound
c) Allow Port: SSH (TCP 22), Source 192.168.32.5/0, Outbound
d) Allow Port: SSH (TCP 22), Source 192.168.32.5/32, Inbound

9) You can Not connect via SSH to your EC2 instance from your on-premise public Internet IP 192.168.32.5. After checking the AWS VPC relevant route table, and N ACL they all seem to be correct. Also, the Instance has a public IP address; the VPC has an Internet gateway attached. What else would you check in the EC2 Instance's related configuration that could be a reason for this?

a) Port: SSH (TCP 22), Source 192.168.32.5/32, Inbound is allowed in the instance's associated security group
b) Ensure that the Internet Gateway of the VPC is not filtering traffic
c) Change the Instance type to a large instance
d) Public IP for the EC2 instance will not allow this, attach an Elastic IP address instead

10) What is recommended by AWS to ensure automated high availability of bastion hosts?

a) Create one bastion host only and manually create another if this one fails
b) Use auto scaling groups to create one bastion host per AZ, in at least 2 AZs, using an Elastic IP on each
c) Use an ELB in front of a group of Bastion hosts configured, one in each AZ
d) Bastion hosts have no high availability recommended architecture, do it however you like

11) You have been asked for a recommendation, from an architecture perspective, on how a customer can achieve highest packets per second performance, combined with low latency and low jitter, in an EC2 cluster. The cluster will be hosted in an AWS VPC across multiple availability zones for high availability.
What would your recommendation be to achieve this?

a) Use Placement groups, one in each AZ and join them together
b) Use GRE tunnels across the availability zones and configure quality of service
c) Use Enhanced Networking over HVM virtualized instances
d) You can't provide high PPS in AWS across multiple availability zones

12) Which block store volumes can you view using block device mappings?

a) Instance Store volumes attached to an EC2 instance
b) Elastic Block Store volumes attached to an EC2 instance
c) S3 buckets
d) You can't view block device mappings

13) To avoid accidental termination of your EC2 instances, you have enabled the EC2 instances' termination protection.
How would you be able to terminate your instances while termination protection is enabled?

a) You need to use CLI to terminate the instances
b) You still can terminate them using Cloud Watch
c) You can not terminate instances with termination protection enabled
d) Set the instance initiated shutdown behavior to terminate

14) Your application is primarily dependent on Reserved and On-demand instances to handle the normal traffic. The application is designed such that a job queue is available, and a failed job is returned to the queue to be handled by another instance. You have a temporary higher number of jobs that you would like to cost effectively process by adding additional instances. The additional instances will only be required for a short period of time until this jobs are processed.
Which EC2 instances option would you use to achieve this?

a) Use Reserved Instances, they guarantee capacity
b) Use on-demand instances because this is just a short period of time
c) Use Spot instances
d) Do not add new instances, the existing can handle the load over time

15) You have purchased 8 Compute Optimized Reserved EC2 Instances. After you completed the purchase, your manager asked you to cancel and refund 4 of them.
Which of the below statements are true in this case? (Choose 2)

a) You can cancel these 4 instances through CLI only
b) You need to contact AWS to ask for a refund
c) You can't refund them since the purchase is complete
d) You can offer them for sale in the AWS RIs marketplace

16) You are trying to help a junior AWS architect in your team understand the characteristics of reserved instances.
Which of the below can help her understand it better? (Choose 4)

a) **By default RI scope is a region but can be modified to AZ scope**
b) **RIs are instance family specific, but can be any instance types within a family**
c) RIs are instance type specific
d) RIs can be migrated from one region to another
e) **RIs Can be used for standalone instances or those launched by auto scaling**
f) **RIs are a better option when you have consistent, long term, workload**

17) During monitoring your running EC2 instances, you found that the EC2 Status check on one EBS-backed instance is impaired. How can you ensure that the instance status is back to healthy status and it is back to normal operations state?

a) Terminate the instance and launch a new one
b) Reboot the instance
c) Stop and Restart the instance
d) You can't change this, this is due to a host problem, wait for AWS to take action

18) AWS best practices recommend not to store keys or passwords on your instances, how can you achieve this while ensuring that your EC2 instances, and applications installed on them, can access various AWS services such as S3? (Choose 2)

a) Create different passwords for the different S3 services and store them in a safe place
b) Use AWS account credentials to access these services
c) Create IAM roles and attach the required IAM policies to them
d) Add IAM role to the instance at launch time

19) Which of the below can help you limit access to an EC2 instance in an AWS VPC? (Choose 3)

a) Passwords
b) IAM Roles
c) S3 bucket policies
d) SSH & RDP
e) Security Groups

20) You have an application running in us-west-2 requiring 6 EC2 Instances running at all times. With 3 Availability Zones in the region viz. us-west-2a, us-west-2b, and us-west-2c, which of the following deployments provides fault tolerance if an Availability Zone in us-west-2 becomes unavailable?

Choose 2 answers from the options given below.

a) 2 EC2 Instances in us-west-2a, 2 EC2 Instances in us-west-2b, and 2 EC2 Instances in us-west-2c
b) 3 EC2 Instances in us-west-2a, 3 EC2 Instances in us-west-2b, and no EC2 Instances in us-west-2c
c) 4 EC2 Instances in us-west-2a, 2 EC2 Instances in us-west-2b, and 2 EC2 Instances in us-west-2c
d) 6 EC2 Instances in us-west-2a, 6 EC2 Instances in us-west-2b, and no EC2 Instances in us-west-2c
e) 3 EC2 Instances in us-west-2a, 3 EC2 Instances in us-west-2b, and 3 EC2 Instances in us-west-2c

21) You are deploying an application on Amazon EC2, which must call AWS APIs. What method should you use to securely pass credentials to the application?

a) Pass API credentials to the instance using Instance userdata.
b) Store API credentials as an object in Amazon S3.
c) Embed the API credentials into your application.
d) Assign IAM roles to the EC2 Instances.

22) You plan on hosting a web application on AWS. You create an EC2 Instance in a public subnet which needs to connect to an EC2 Instance that will host an Oracle database. Which of the following steps should be taken to ensure that a secure setup is in place? Choose 2 answers from the choices below.

a) Place the EC2 Instance with the Oracle database in the same public subnet as the Web server for faster communication.
b) Place the EC2 Instance with the Oracle database in a separate private subnet.
c) Create a database security group and ensure that the web security group allows incoming access.
d) Ensure that the database security group allows incoming traffic from 0.0.0.0/0

23) An EC2 Instance hosts a Java based application that accesses a DynamoDB table. This EC2 Instance is currently serving production users. Which of the following is a secure way for the EC2 Instance to access the DynamoDB table?

a) **Use IAM Roles with permissions to interact with DynamoDB and assign it to the EC2 Instance.**
b) Use KMS Keys with the right permissions to interact with DynamoDB and assign it to the EC2 Instance.
c) Use IAM Access Keys with the right permissions to interact with DynamoDB and assign it to the EC2 Instance.
d) Use IAM Access Groups with the right permissions to interact with DynamoDB and assign it to the EC2 Instance.

24) An application running on EC2 Instances processes sensitive information stored on Amazon S3. This information is accessed over the Internet. The security team is concerned that the Internet connectivity to Amazon S3 could be a security risk. Which solution will resolve the security concern?

a) Access the data through an Internet Gateway.
b) Access the data through a VPN connection.
c) Access the data through a NAT Gateway.
d) **Access the data through a VPC endpoint for Amazon S3.**