EC2 AND IAM PRACTICAL QUESTIONS

IAM:

1. Create an IAM user with programmatic access and attach an S3 Read-Only policy.
   - Go to the IAM console and create an user and allow them to operate using CLI or SDK
   - You will be given an access key and secret access key for the management and now we have to use aws configure to user
   - Now we have to attach the user with roles such as S3 read only access and access the user permission through CLI command

2. Enforce Multi-Factor Authentication (MFA) for an IAM user before accessing AWS services.?
   - Create an user and allow them to create an password
   - Now add the permission to access and give an MFA role to the user so when you login into the account the user must authenticate using MFA to login into the account

3. Create an IAM Role for an EC2 instance to access an S3 bucket.?
   - Create an IAM role to allow s3 bucket full access to the instance
   - Now add the create role in the networking section of the instance and confirm the role attachment

4. Write a custom IAM policy that allows only read and write access to a specific S3 bucket.?

```
{
   "version" : "2012-10-17",
   "Statement": [
      {
         "Effect":"Allow",
         "Action": [
            "s3:GetObject",
            "s3:PutObject"
         ],
```

```
            "Resource": "arn:aws:s3:::your-bucket-name/*"
        }
    ]
}
```

5. Restrict IAM user permissions to access AWS services only in a specific region.?
    - For creating an aws region specific permission we should just add up an extra line of code that contains:
        - “aws:RequestedRegion”: “<region-name>”

6. Use IAM Policy Simulator to troubleshoot why a user is denied access to a service.
    - The IAM Policy Simulator helps troubleshoot why a user is denied access to an AWS service by evaluating IAM policies, resource policies, and permissions boundaries.
    - They are mostly used for the purpose of troubleshooting

7. Create a role for a Lambda function to access DynamoDB and test it.?
    - Go to roles and create an role for DynamoDB for the lambda function to allow all or give an administrating role

8. A developer cannot list S3 buckets despite having permissions. How will you debug it?
    - We can use policy simulator to debug the problem faced by the developer why they face the problem

9. How can you allow cross-account access to an S3 bucket using IAM roles?
    - Create an iam role in the account A and create the role
    - Select trusted entity and to choose another account
    - Enter the account ID of B
    - Attach the policy to the bucket
    - Name the role and create it

10. An IAM user accidentally deleted a critical IAM policy. How do you recover it?
    - We could use the cloud watch and the cloud trial for creating another IAM policy of the same type to recover it
    - Cloud watch is used to view the details of the policy that have been deleted

- Cloud trails can be used to get back the json file of the deleted policy by requesting it again

EC2:

1. Launch an EC2 instance, configure security groups, and connect via SSH.
   - Create an EC2 instance in the console with the type of the instance to be used for a specific purpose
   - Create the security group for creating an inbound and outbound rule for the server
   - We can create key pairs for an extra level of security

2. Deploy a simple web server (Apache/Nginx) on an EC2 instance.?
   - Create an ec2 instance with the t2.micro along with the key pair for extra security
   - Now log in into the server using the key pair (linux)
   - Now install apache (/var/www/html)
   - Now clone the repo into the server using git
   - And now move the cloned files to the path of apache /var/www/html
   - Now run the static web site
   - We can use the application known as Winscp for the static hosting process

3. Create and attach an EBS volume to an EC2 instance, then mount it.
   - Go to the EBS volume in the ec2 volumes and configure it
   - With the created volumes attach the volumes to the instances
   - Connect the ec2 instance and check whether the volumes is attached

4. Configure an Auto Scaling Group for EC2 instances.?
   - Create an launch template for the auto scaling group
   - Based on the configuration create an auto scaling group with the desired amount of instances to be increased or decreased

5. Assign an IAM Role to an EC2 instance for accessing S3, then test via CLI.?
   - Create an role with the permissions for the ec2 with the desired roles permissions such as the s3 full access

- Now go to the ec2 console and add the role to the instance with the help of the networking section

6. Your website hosted on EC2 is slow. How do you analyze and fix performance issues?
   - Check whether the EC2 server is having high cpu utilisation
   - Check whether there is an high network traffic
   - Check whether the apache server performance using the logs purpose

7. Your EC2 instance terminated unexpectedly. How do you find out why?
   - Check in the cloud watch for the terms for the unexpected deletion
   - Check the cloud trail logs to check for the termination events
   - Check the auto scaling and ELB whether they deleted the unused servers