SLIP-1

Q.1] Create a security group and private key through AWS. [20 Marks]

Steps:

Login to AWS Console.

Go to EC2 Dashboard.

Create Key Pair:

Go to Key Pairs > Create Key Pair.

Name: IndiraKey

File format: .pem

Click Create Key Pair and download it.

Create Security Group:

Go to Security Groups > Create Security Group

Name: IndiraSG

Add no specific inbound rule (or add SSH for practice).

Click Create.

Q.2] Create an EC2 instance named as Indiraec2_Rollnumber, create a new EBS volume and attach it. [25 Marks]

Steps:

Go to Instances > Launch Instance

Name: Indiraec2_1234

AMI: Amazon Linux 2

Type: t2.micro

Key Pair: IndiraKey

Security Group: IndiraSG

Create EBS Volume:

Go to Elastic Block Store > Volumes

Click Create Volume

Size: 8 GiB

Same Availability Zone as EC2

Click Create

Attach Volume:

Select volume > Actions > Attach Volume

Choose instance Indiraec2_1234

Q.3] VIVA [05 Marks]

Sample Questions:

What is a key pair in AWS?

What is a security group?

What is an EBS volume?

SLIP-2

Q.1] Create a security group with SSH-only inbound rule and key pair. [20 Marks]

Steps:

Go to Key Pairs > Create Key Pair

Name: SSHKey

Format: .pem

Go to Security Groups > Create Security Group

Name: SSHOnlySG

Inbound Rule:

Type: SSH

Port: 22

Source: My IP or Anywhere

Click Create

Q.2] Create EC2 instance Indiraec2_Rollnumber and attach EBS volume. [25 Marks]

Same steps as SLIP-1, using new names:

Instance name: Indiraec2_1234

Key Pair: SSHKey

Security Group: SSHOnlySG

EBS Volume: 8 GiB, attached to EC2 instance

Q.3] VIVA [05 Marks]

Sample Questions:

What is the purpose of SSH?

How to restrict EC2 access?

SLIP-3

Q.1] IAM user permission control (ChangePassword) [20 Marks]

Steps:

Login using root credentials.

Go to IAM > Users > Add user

Name: iccs_123

Console access: yes

Password: iccs@123

No permissions initially

Deny password change:

Add inline policy to deny iam:ChangePassword:

{

```
  “Version”: “2012-10-17”,
  “Statement”: [{
    “Effect”: “Deny”,
    “Action”: “iam:ChangePassword”,
    “Resource”: “*”
  }]
}
```

Verify:

Login with IAM user, attempt password change – should fail

Allow password change:

Modify or remove policy

Delete user:

IAM > Users > Delete

Q.2] Create EC2 instance and run C program to find minimum number. [25 Marks]

Launch EC2 as earlier

SSH into instance

Install GCC:

Sudo yum install gcc -y

C Code – Minimum Number:

```
#include <stdio.h>
Int main() {
   Int a[100], n, i, min;
   Printf(“Enter number of elements: “);
   Scanf(“%d”, &n);
   Printf(“Enter elements:\n”);
   For(i = 0; i < n; i++) scanf(“%d”, &a[i]);
   Min = a[0];
   For(i = 1; i < n; i++) if(a[i] < min) min = a[i];
   Printf(“Minimum number is: %d\n”, min);
```

```
   Return 0;
}
```

Save as min.c, compile with gcc min.c -o min, run ./min

Q.3] VIVA [05 Marks]

Topics:

IAM Permissions

Policy types

C compilation in EC2

SLIP-4

Q.1] Create IAM user with full admin access. [20 Marks]

Steps:

IAM > Users > Add User

Name: admin_user

Console access: yes

Set custom password

Permissions: Attach AdministratorAccess

Create user

Q.2] Create EC2 instance and run binary search C program. [25 Marks]

Launch EC2 and connect via SSH

Install GCC

C Code – Binary Search:

```
#include <stdio.h>
Int main() {
   Int a[100], n, i, search, first, last, middle;
```

```
   Printf(“Enter number of elements: “);
   Scanf(“%d”, &n);
   Printf(“Enter sorted elements:\n”);
   For(i = 0; i < n; i++) scanf(“%d”, &a[i]);
   Printf(“Enter value to search: “);
   Scanf(“%d”, &search);
   First = 0; last = n – 1;
   While(first <= last) {
      Middle = (first + last) / 2;
      If(a[middle] < search)
         First = middle + 1;
      Else if(a[middle] == search) {
         Printf(“%d found at position %d.\n”, search, middle+1);
         Return 0;
      } else
         Last = middle – 1;
   }
   Printf(“%d not found.\n”, search);
   Return 0;
}
```

Save as binary.c, compile and run