

Slip No. 30 (Total Marks: 30)

1. Program to find the cube of a given number using a function interface – 10 Marks

```
java
Copy code
import java.util.function.Function;

public class CubeCalculator {
    public static void main(String[] args) {
        Function<Integer, Integer> cubeFunction = (n) -> n * n * n;

        int number = 5; // Example number
        int cube = cubeFunction.apply(number);
        System.out.println("The cube of " + number + " is: " + cube);
    }
}
```

2. Define class `EmailId` with username and password, including validation and custom exceptions – 20 Marks

```
java
Copy code
class InvalidUsernameException extends Exception {
    public InvalidUsernameException(String message) {
        super(message);
    }
}

class InvalidPasswordException extends Exception {
    public InvalidPasswordException(String message) {
        super(message);
    }
}

class EmailId {
    private String username;
    private String password;

    public EmailId() {
        this.username = "";
        this.password = "";
    }

    public EmailId(String username, String password) throws
InvalidUsernameException, InvalidPasswordException {
        setUsername(username);
        setPassword(password);
    }

    public void setUsername(String username) throws InvalidUsernameException
{
        if (username == null || username.length() < 3) {
```

```

        throw new InvalidUsernameException("Invalid Username: must be at
least 3 characters long.");
    }
    this.username = username;
}

    public void setPassword(String password) throws InvalidPasswordException
{
    if (password == null || password.length() < 6) {
        throw new InvalidPasswordException("Invalid Password: must be at
least 6 characters long.");
    }
    this.password = password;
}

    public static void main(String[] args) {
        if (args.length < 2) {
            System.out.println("Please provide username and password as
command line arguments.");
            return;
        }

        String username = args[0];
        String password = args[1];

        try {
            EmailId emailId = new EmailId(username, password);
            System.out.println("Username: " + emailId.username);
            System.out.println("Password: " + emailId.password);
        } catch (InvalidUsernameException | InvalidPasswordException e) {
            System.out.println(e.getMessage());
        }
    }
}

```