1. C. Polymorphism
2. B. False
3. D. None
4. C. Inheritance
5. A. Encapsulation
6. D. int num1 = 0, num2 = 0;
7. A. Set
8. A. 20
9. A. BINGO
10. A. Compilation Error
11. A. abc
12. D. Compilation Error
13. D. Compilation Error
14. A. [2 5]
15. C. false true
16. A. Three reference variables and two objects are created.
17.
```
import java.util.Scanner;

public class EvenOdd {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number: ");
        int number = sc.nextInt();

        if (number % 2 == 0) {
            System.out.println("The number " + number + " is even.");
        } else {
            System.out.println("The number " + number + " is odd.");
        }
    }
}
```

18.
```
import java.util.Scanner;

public class AverageOfTwoNumbers {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the first number: ");
        int number1 = sc.nextInt();

        System.out.println("Enter the second number: ");
        int number2 = sc.nextInt();

        int sum = number1 + number2;
```

```
        float average = sum / 2;

        System.out.println("The average of " + number1 + " and " + number2 + " is " +
    average);
    }
}
```

19.

```
public class SwapNumbers {

    public static void main(String[] args) {
        int firstNumber = 10;
        int secondNumber = 20;

        System.out.println("Before swapping:");
        System.out.println("First number is: " + firstNumber);
        System.out.println("Second number is: " + secondNumber);

        // Swap the numbers using a temporary variable.
        int temp = firstNumber;
        firstNumber = secondNumber;
        secondNumber = temp;

        System.out.println("After swapping:");
        System.out.println("First number is: " + firstNumber);
        System.out.println("Second number is: " + secondNumber);
    }
}
```

20.

```
import java.util.Scanner;

public class PrimeNumber {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number: ");
        int number = sc.nextInt();

        boolean isPrime = true;
        for (int i = 2; i <= number / 2; i++) {
            if (number % i == 0) {
                isPrime = false;
                break;
            }
        }

        if (isPrime) {
```

```
            System.out.println(number + " is a prime number.");
        } else {
            System.out.println(number + " is not a prime number.");
        }
    }
}
```

21.

```
import java.util.Scanner;

public class MultiplicationTable {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a number: ");
        int n = sc.nextInt();

        for (int i = 1; i <= 10; i++) {
            System.out.println(n + " * " + i + " = " + n * i);
        }
    }
}
```

22.

```
import java.util.Scanner;

public class LargestOfThreeNumbers {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the first number: ");
        int number1 = sc.nextInt();

        System.out.println("Enter the second number: ");
        int number2 = sc.nextInt();

        System.out.println("Enter the third number: ");
        int number3 = sc.nextInt();

        int largestNumber = number1;
        if (number2 > largestNumber) {
            largestNumber = number2;
        }
        if (number3 > largestNumber) {
            largestNumber = number3;
        }

        System.out.println("The largest number is: " + largestNumber);
```

```
    }
}
```

23.

```
import java.util.Scanner;

public class SimpleInterest {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the principal amount: ");
        float principal = sc.nextFloat();

        System.out.println("Enter the rate of interest: ");
        float rate = sc.nextFloat();

        System.out.println("Enter the time period: ");
        float time = sc.nextFloat();

        float simpleInterest = (principal * rate * time) / 100;

        System.out.println("The simple interest is: " + simpleInterest);
    }
}
```

24.

```
import java.util.Scanner;

public class AreaAndPerimeterOfRectangle {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the length of the rectangle: ");
        int length = sc.nextInt();

        System.out.println("Enter the breadth of the rectangle: ");
        int breadth = sc.nextInt();

        int area = length * breadth;
        int perimeter = 2 * (length + breadth);

        System.out.println("The area of the rectangle is: " + area);
        System.out.println("The perimeter of the rectangle is: " + perimeter);
    }
}
```

25.

```
import java.util.Scanner;
```

```
public class VowelConsonant {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter a character: ");
        char ch = sc.next().charAt(0);

        boolean isVowel = false;
        String vowels = "aeiouAEIOU";

        for (int i = 0; i < vowels.length(); i++) {
            if (ch == vowels.charAt(i)) {
                isVowel = true;
                break;
            }
        }

        if (isVowel) {
            System.out.println(ch + " is a vowel.");
        } else {
            System.out.println(ch + " is a consonant.");
        }
    }
}
```