

1) What will be the output for the following program segment?

```
int x = 1, y = 2, z = 3;
do{
    System.out.print(x);
    do {
        System.out.print(y);
        while (x > y)
            System.out.print(z);
    } while (y > z);
} while (x > z);
```

- a) **12** b) 21 c) 3 (infinitely) d) 123 (infinitely) e) Compilation error

2) What will be the output for the following program segment?

```
String s1="ABC",s2="abc";
if(s1==s2)                      System.out.print("Y");
else                              System.out.print("N");
if(s1.equals(s2))              System.out.print("Y");
else                              System.out.print("N");
```

- a) YY b) YN c) NY d) **NN** e) Compilation error

3) What will be the output for the following program?

<pre>public class Box{ public int width; public int len; }</pre>	<pre>public class MainClass{ public static void main(String args[]){ Box b1 = new Box(); b1.width = 10; b1.len = 5; Box b2 = b1; int y = ++b1.width+ b2.width+ ++b1.len+ b2.len; System.out.print(y); } }</pre>
--	---

- a) 15 b) 17 c) 32 d) **34** e) Compilation error

4) What will be the output for the following program segment?

```
for(int row = 1; row <= 3; row ++){
    for(int count = 1; count <= (4 - row); count ++){
        System.out.print("*");
        System.out.println();
    }
}
```

- a) * b) ******* c) *** d) * e) Compilation error
- ** * *** *
- *** * *** *

5) What will be the output for the following program?

<pre>public class ClassA { private int x; public void changeVal(int v){ x = x + v; } }</pre>	<pre>public class ClassB{ public static void main(String[] args){ int val = 7; ClassA ca1 = new ClassA(); ClassA ca2 = new ClassA(); ca1.x = val; ca2.x = val - 1; ca1.changeVal(2); System.out.print(ca1.x + ca2.x); } }</pre>
--	---

- a) 6 b) 9 c) 15 d) 8 e) **Compilation error**

6) What will be the output for the following program segment?

```
for(int i=1, j=0; j<5; j=j+2)
    i = (i*i) + j;
    switch (i) {
        case 3 : System.out.print("A");
                break;
        case 13 : System.out.print("B");
        case 175: System.out.print("C");
        default : System.out.print("D");
    }
```

- a) A b) BCD c) ABCD d) AAAAA e) **Compilation error**

7) What will be the output for the following program segment when the user enters 5?

```
Scanner KB = new Scanner(System.in);
int n;
int F0=1, F1=1;
int Fn=0;
System.out.println("Enter the number");
n=KB.nextInt();
for (int i=1; i<n; i++){
    Fn = F0 + F1;
    F0 = F1;
    F1 = Fn;
}
System.out.println(Fn);
```

- a) 3 b) 5 c) **8** d) 13 e) Compilation error

8) A mutator method is a method used to control changes to a variable. It is also widely known as:

- a) terminator b) accessor c) **setter** d) facilitator e) getter

9) How many times will the following segment program print "Hello"?

```
int x = 3, y = 10;
do {
    System.out.println("Hello");
    x = x + 1;
    y = y - 1;
} while (x < y);
```

- a) 3 b) **4** c) 5 d) (Infinitely) e) Compilation error

10) What will be the output for the following program?

<pre>public class Calc{ private double num=0; public void setN(double n){ num=n; } public double getN(){ return num; } public double pow(){ return num*num; } }</pre>	<pre>public class CalcDemo{ public static void main(String[] args){ Calc o=new Calc(); o.setN(10); o.setN(o.pow()); System.out.print(o.getN()); } }</pre>
---	--

- a) 1.0 b) 10.0 c) 0.0 d) **100.0** e) Compilation error

Question 2: (5 marks)

2.1) What will be the output for the following program? (1 mark)

```
public class D2B{
    public String process(int n) {
        String bin = "";
        for(int i = n; i > 0; i /= 2){
            int rem = i % 2;
            bin = rem + bin;
        }
        return bin;
    }
}
```

```
public class Test{
    public static void main(String[] args){
        D2B obj = new D2B();
        System.out.println(obj.process(13));
    }
}
```

Answer:

1101

2.2) The following while loop (left side) is converted into the for loop (right side). What is wrong in the for loop? Correct it. (1 mark)

```
int sum = 0;
int i = 3;
while (i < 10) {
    i++;
    if(i % 3 == 0)
        sum += i;
}
```

```
int sum = 0;
int i ;
for ( i = 3 ; i < 10; i++)
    if (i % 3 == 0)
        sum += i;
```

Answer:

The i has to be incremented before the if condition

```
int sum = 0;
int i ;
for ( i = 3 ; i < 10; ){
    i++;
    if (i % 3 == 0)
        sum += i;
}
```

2.3) Fill-in the blanks below with suitable Java code as instructed? (3 marks)

```
public class Bus {
    private int numSeats=40;
    private int numPassenger=0;

    // Increases the number of passengers of the bus by passed parameter
    // Only accommodate the number of passengers that matches the
    // number of empty seats. Remaining passengers must wait for
    // the next bus.
    public void getOn(int numPassengers) {

        this.numPassengers += numPassengers;

        if (this.numPassengers > numSeats)

            this.numPassengers = numSeats;

    }

    // Returns true if the bus is full, and false otherwise
    public boolean isFull() {

        return (numSeats == numPassengers);
    }

    // Returns true if the bus is empty, and false otherwise
    public boolean isEmpty() {

        return (numPassengers == 0);
    }

    // Returns the number of empty seats on the bus
    public int getFreeSeats() {

        return (numSeats-numPassengers);
    }
}
```