



**INSTITUTE OF SOFTWARE ENGINEERING**

**GRADUATE DIPLOMA IN SOFTWARE ENGINEERING**

**ASSIGNMENT NAME**

Programming fundamentals

**ASSIGNMENT NO**

04

NUMBER OF QUESTIONS: 35

NUMBER OF COMPLETED QUESTIONS: 35

NUMBER OF REMAINING QUESTIONS: 00

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1. Input two numbers and check whether the first number is greater than the second number. If so add the two numbers otherwise display the two numbers.

```
import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        System.out.print("Enter 1st number : ");
        int num1=in.nextInt();
        System.out.print("Enter 2st number : ");
        int num2=in.nextInt();
        if(num1>num2){
            System.out.println(num1+num2);
        }else{
            System.out.println(num1 + " / " +num2);
        }
    }
}
```

2. Write a java program to find the absolute number of a given integer number.

```
import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        System.out.print("Enter integer number : ");
        int n=in.nextInt();
        if(n<0){
            n=-n;
        }
        System.out.println("Absolute value : "+n);
    }
}
```

3. Enter marks Obtained by a student for Chemistry, Physics and Combined maths. Calculate the total and average. If the average is greater than 75 then display “Pass” otherwise “Fail”. Write a java program to perform above task.

```
import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        System.out.print("Enter integer Chemistry : ");
        double c=in.nextDouble();
```

```

        System.out.print("Enter integer Physics : ");
        double p=in.nextDouble();
        System.out.print("Enter integer Combined maths : ");
        double cm=in.nextDouble();
        double total,avg;
        total=c+p+cm;
        avg=total/3;
        if(avg>=75){
            System.out.println("Pass");
        }else{
            System.out.println("Fail");
        }
    }
}

```

4. Enter unit price and amount bought from a product. Calculate the total. If the total is greater than Rs.1500/- display “You are entitled for the super draw. Otherwise display “try again”.

```

import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        System.out.print("Enter unit price : ");
        double uPrice=in.nextDouble();
        System.out.print("Enter amount : ");
        double amount=in.nextDouble();
        double tPrice=uPrice*amount;
        if(tPrice>1500){
            System.out.println("You are entitled for the super draw");
        }else{
            System.out.println("try again");
        }
    }
}

```

5. Enter unit price and amount bought from a product. Calculate the total. If the total is more than Rs.500/- give 5% discount. Calculate the discount and new total and display those. Otherwise display “No discount given”.

```

import java.util.*;
class Example{
    public static void main(String[] args){

```

```

Scanner in = new Scanner(System.in);
System.out.print("Enter unit price : ");
double uPrice=in.nextDouble();
System.out.print("Enter amount : ");
double amount=in.nextDouble();
double tPrice=uPrice*amount;
if(tPrice>=500){
    System.out.println("You have won a RS "+tPrice*0.05+" discount");
    System.out.println("Total price : "+(tPrice*=0.95));
}else{
    System.out.println("No discount given");
}
}
}

```

6. Write a Java program to get a Year from user input and find whether it is a leap year or not.

```

import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        System.out.print("Enter Year : ");
        int year=in.nextInt();
        if (year%4==0){
            if(year%100==0){
                if(year%400==0){
                    System.out.println("leap year");
                }else{
                    System.out.println("not a leap year");
                }
            }else{
                System.out.println("leap year");
            }
        }else{
            System.out.println("not a leap year");
        }
    }
}

```

7. Write a Java program to find & print the area of a circle when user input the radius.

```
import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner in = new Scanner(System.in);
        System.out.print("Input the radius : ");
        double radius=in.nextDouble();
        double pi,area;
        pi=22/7;
        area=pi*radius*radius;
        System.out.println(area);
    }
}
```

8. Customer can withdraw cash from an ATM. Withdrawal is refused if amount entered > current balance  
if amount entered > daily limit  
if current balance < 5000 rupees, then a charge of 2% is made.  
if current balance >= 5000, no charge is made Write a java program which input a request for a sum of money decides if a withdrawal can be made or not and calculate any charges. Appropriate output messages should be included.

```
import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);
        System.out.print("Enter your current balance : " );
        double currentBalance = input.nextDouble();
        System.out.print("Enter the amount required to withdraw : " );
        double amount = input.nextDouble();
        double dailyLimit= 100000;
        if(currentBalance>5000){
            System.out.println("2% charging :"+amount*0.02);
            System.out.println("Amount withdraw :"+"Rs"+(amount*0.98));
        }else{
            System.out.println("Amount withdrawn :"+"Rs."+amount);
        }
        if((currentBalance>amount)|| (dailyLimit>amount)){
            System.out.println("withdrawal can be made");
        }
    }
}
```

```

        }else{
            System.out.println("withdrawal can't be made");
        }
    }
}

```

9. Write a java program to find the maximum number of three integer numbers input by the keyboard and print results as follows; “Maximum number is : 45”

```

import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        System.out.print("Enter number 1 : " );
        int a = input.nextInt();

        System.out.print("Enter number 2 : " );
        int b = input.nextInt();

        System.out.print("Enter number 3 : " );
        int c = input.nextInt();

        int max;
        max = a;
        if(b>max){
            max=b;
        }
        if(c>max){
            max=c;
        }

        System.out.print("Maximum number is :"+max);
    }
}

```

10. Write a Java program to input an integer number from the keyboard and print whether the number is odd or even.

```

import java.util.*;
class Example{
    public static void main(String[] args){
        Scanner input = new Scanner(System.in);

        System.out.print("Enter number : " );
        int a = input.nextInt();
    }
}

```

```

        if(a%2==0){
            System.out.print("this is even number");
        }else{
            System.out.print("this is odd number");
        }
    }
}

```

11. Which of the following lines can be legally inserted at the line 10?

```

class Example{
    public static void main(String[] args) {
        int x = 10;
        //Insert code here//Line 10
    }
}

```

- |                       |                           |
|-----------------------|---------------------------|
| A. if(x){ }           | B. if(x=10){ }            |
| C. if(x==10){ }       | D. if(x=100!=10){ }       |
| E. if((x=100)!=10){ } | F. if((x=100)>0==true){ } |

- C , E , F

12. Which of the following lines can be legally inserted at the line 10?

```

class Example{
    public static void main(String[] args) {
        int x = 10;
        boolean b=true;
        //Insert code here//Line 10
    }
}

```

- |                            |                           |
|----------------------------|---------------------------|
| A. if(b){ }                | B. if(b=false){ }         |
| C. if(b==false){ }         | D. if(b=false==false){ }  |
| E. if((b=false)==false){ } | F. if(b=(false==true)){ } |

- All

13. Write the outputs for the following code lines.

```

int x = 10;
A. System.out.println(x=9);
B. System.out.println(x==9);
C. System.out.println(x=9!=10);

```

- D. `System.out.println((x=9)==10);`
- E. `System.out.println((x=9)<=10);`

- A. 9
- B. true
- C. Compile error
- D. false
- E. true

14. Write the outputs for the following code lines. `boolean b=true;`

- A. `System.out.println(b);`
- B. `System.out.println(b=true);`
- C. `System.out.println(b==true);`
- D. `System.out.println(b!=true);`
- E. `System.out.println(b=true==true);`
- F. `System.out.println((b=true)==false);`
- G. `System.out.println(b=(true!=false));`

- A. true
- B. true
- C. true
- D. false
- E. true
- F. false
- G. true

15. Write the outputs for the following code lines. `int x=99;`

```
if(x++==x){
    System.out.println("x++==x : "+x);
}
x=99;
if(++x==x){
    System.out.println("++x==x : "+x);
}
x=99;
if(x==x++){
    System.out.println("x==x++ : "+x);
}
x=99;
if(x==++x){
    System.out.println("x==++x : "+x);
}
```



```

}
x=99;
if(++x==++x){
    System.out.println(++x==++x : "+x");
}
x=99;
if(x++==x++){
    System.out.println("x++==x++ : "+x);
}
x=99;
if(++x==x++){
    System.out.println(++x==x++ : "+x");
}
x=99;
if(x++==++x){
    System.out.println("x++==++x : "+x);
}

```

- ++x==x : 100
- x==x++ : 100
- ++x==x++ : 101

16. Write the outputs for the following code lines. int x=99;

```

if(x++==x){
    System.out.println("x++==x : "+x);
}
if(++x==x ){
    System.out.println(++x==x : "+x");
}
if(x==x++){
    System.out.println("x==x++ : "+x);
}
if(x==++x){
    System.out.println("x==++x : "+x);
}
if(++x==++x){
    System.out.println(++x==++x : "+x");
}
if(x++==x++){
    System.out.println("x++==x++ : "+x);
}

```

```

if(++x==x++){
    System.out.println(++x==x++ : "+x");
}

```

- ++x==x : 101
- x==x++ : 102
- ++x==x++ : 109

17. Write the outputs for the following code lines. int x=99;

```

int y=99;
if(x++==y){
    System.out.println("x++==y : "+x+" : "+y);
}
if(++x==y){
    System.out.println(++x==y : "+x+" : "+y);
}
if(x==y++){
    System.out.println("x==y++ : "+x+" : "+y);
}
if(x==++y){
    System.out.println("x==++y : "+x+" : "+y);
}
if(++x==++y){
    System.out.println(++x==++y : "+x+" : "+y);
}
if(x++==y++){
    System.out.println("x++==y++ : "+x+" : "+y);
}
if(++x==y++){
    System.out.println(++x==y++ : "+x+" : "+y);
}
if(x++==++y){
    System.out.println("x++==++y : "+x+" : "+y);
}

```

- x++==y : 100 : 99
- x==++y : 101 : 101
- ++x==++y : 102 : 102
- x++==y++ : 103 : 103

18. Given code fragment:

```
int x=9;
/*Insert code here */ { //12
    System.out.println("Success");
}
```

Which of the followings can be inserted at the line 12 to get the output "Success"

- |                 |                 |
|-----------------|-----------------|
| A. if(x>=10)    | B. if(x++>=10)  |
| C. if(++x>=10)  | D. if(++x>=x++) |
| E. if(++x>x++)  | F. if(x++>=x++) |
| G. if(++x<=x++) | H. if(x<=x++)   |

- C , D , G , H

19. Given code fragment:

```
int x=100,y=99;
/* Insert Code here*/ { //Line 12
    System.out.println("Success");
}else{
    System.out.println("Failed");
}
```

Which of the following lines can be inserted at the line 12 to get the output as "Success"

- |                 |                 |
|-----------------|-----------------|
| A. if(x==y)     | B. if(x++==++y) |
| C. if(x++==y++) | D. if(++x==y++) |

- B

20. What are the outputs of following commands?

```
byte b = 10;
short s = 100;
int x = 125;
long l = 15000;
float f = 1.5f;
double d = 21.231;
char c = 'c';
boolean bool = 10>9;
System.out.println(b+s+x+""+f+d+c+bool);           //Line      1
System.out.println(""+b+s+x+f+d+c+bool);           //Line      2
System.out.println(b+s+x+f+d+c+""+bool);           //Line      3
```

```
System.out.println(b+s+x+f+d+c+bool+""); //Line 4
System.out.println(bool+b+f+d+c+""+x+1); //Line 5
```

- Line 1 // 2351.521.231ctrue
- Line 2 // 101001251.521.231ctrue
- Line 3 // 356.731true
- Line 4 Line 5 compile error

21. Assume that  $i = 1$ ,  $j = 2$ ,  $k = 3$  and  $m = 2$ . What does each of the following statements print?

```
System.out.println( i ==1); //Line 1
System.out.println( j ==3); //Line 2
System.out.println( ( i >=1) && ( j <4) ); //Line 3
System.out.println( ( m <=99) & ( k < m ) ); //Line 4
System.out.println( ( j >= i ) || ( k == m ) ); //Line 5
System.out.println( ( k + m < j )|(3- j>= k)); //Line 6
System.out.println( !( k > m ) ); //Line 7
```

- true
- false
- true
- false
- true
- false
- false

22. What are the outputs of following commands?

```
int x=20,y=60;
boolean bool;
System.out.println(x=10); //Line 1
System.out.println(bool=true); //Line 2
System.out.println(x=10>0); //Line 3
System.out.println((x=10)>0); //Line 4
System.out.println(bool=(x=10)>0); //Line 5
System.out.println(bool=x+y>100); //Line 6
```

- 10
- true
- Compile error
- true
- true
- false

23. Given:

```
class Example{
    public static void main(String args[]){
        //line 5
        switch(x){
            default : System.out.print("4 ");
            case 1 : System.out.print("1 ");
            case 2 : System.out.print("2 ");
            case 3 : System.out.print("3 ");
        }
    }
}
```

What will be the outputs when you insert the following codes at the line 5?

A. int x=1; B. int x=2; C. int x=3;  
D. int x=4; E. int x=0; F. int x=5;

A	1 2 3
B	2 3
C	3
D	4 1 2 3
E	4 1 2 3
F	4 1 2 3

24. Which of the following lines are legal?

```
import java.util.*;
class Example{
    public static void main(String args[]){
        int x=100;
        System.out.println(x); //Line 1 {
        int y=200;
        {
            int z=300;
            System.out.println(x); //Line 2
            System.out.println(y); //Line 3
            System.out.println(z); //Line 4
        }
        System.out.println(x); //Line 5
```

```

        System.out.println(y); //Line 6
        System.out.println(z); //Line 7
    }
    System.out.println(x); //Line 8 System.out.println(y); //Line 9

    System.out.println(z); //Line 10

}
}

```

A. Line 1  
 C. Line 3  
 E. Line 5  
 G. Line 7  
 I. Line 9

B. Line 2  
 D. Line 4  
 F. Line 6  
 H. Line 8  
 K. Line 10

A Line 1  
 B Line 2  
 C Line 3  
 D Line 4  
 E Line 5  
 F Line 6  
 H Line 8

25. Given:

```

class Example{
    public static void main(String args[]){
        //Line 5
        switch(x){
            default : System.out.print("4 ");break;
            case 2 : System.out.print("2 ");
            case 3 : System.out.print("3 ");
            case 1 : System.out.print("1 ");break;

        }
    }
}

```

What will be the outputs when you insert the following codes at the line 5?

A. int x=1;              B. int x=2;              C. int x=3;

D. int x=4;

E. int x=0;

F. int x=5;

- A. 1
- B. 2 3 1
- C. 3 1
- D. 4
- E. 4
- F. 4

26. Which of the following code fragments can be inserted at line 10 to legal line 12

```
final int x=100;
final int y;
y=100;
int z=100;
int a;
//Insert code here //Line 10
System.out.println(a); //Line 12
```

- A. if(x>0){a=0;}
- B. a=0;
- C. if(y>0){a=0;}
- D. if(z>0){a=0;}
- E. if(true){a=0;}
- G. if(y>0){a=0;}else {a=-1;}
- H. a=z>0?0:-1;

- A , B , E , G , E

27. Given:

```
class Example {
    public static void main(String[] args) {
        int a = 2;
        char b,c,d;
        b = (a < 2) ? 'f' : 'g'; // 1
        if (a < 2) c = 'h'; else c = 'i'; // 2
        if (a < 2) d = 'j'; // 3
        if (a > 2) d = 'k'; // 4
        if (a == 2) d = 'l'; // 5
        System.out.print(b + "," + c + "," + d); // 6 }
    }
}
```

What is the result of attempting to compile and run the program?

- A. Prints: g, i, l

- B. Compiler Error: variable b might not have been initialized.
- C. Compiler Error: variable c might not have been initialized.
- D. Compiler Error: variable d might not have been initialized.
- E. Runtime Exception
- F. None of the above.

- D

28. Given Code:

```
class Example{
    public static void main(String args[]){
        int a=-5;
        int b=-2;
        a%=b;
        a/=b;
        b=a>0?0:a;
        System.out.println(a+" "+b);
    }
}
```

Select one option?

- A. Prints 1 0
- B. Prints -1 -1
- C. Prints -2 -2
- D. Prints 0 0

- D

29. Given:

```
class Example{
    public static void main(String args[]){
        int a=1;
        final int b=2;
        final int c;
        c=3;
        final char d='A';
        final char e='B';
        int x=1;
        switch(x){
            case 65: System.out.print("65");
                //Insert code//line 10
        }
    }
}
```



}

Which of the following codes can be inserted legally at line 10

- |              |                   |
|--------------|-------------------|
| A. case a:// | B. case b: //     |
| C. case c:   | D. case e:        |
| E. case f:   | F. case 'A':      |
| G. case 1.0: | H. case (char)66: |

- B , D , H

30. Given:

```
//Insert code here //line 4
switch(x){
    case 'A' : System.out.println("65 ");break;
    case 'B' : System.out.println("66 ");break;
    case 'C' : System.out.println("67 ");break;
    default : System.out.println("wrong ");
}
```

Which of the following codes can be inserted legally at line 4

- |                  |                     |
|------------------|---------------------|
| A. char x='A';   | B. int x=65;        |
| C. int x=65536;  | D. byte x=65;       |
| E. short x=66 ;  | F. boolean x =true; |
| G. String x="A"; | H. double x=65.0;   |

- A , B , C , D , E

31. Given Code fragment:

```
Scanner input=new Scanner(System.in);
System.out.print("Input student average : ");
double avg=input.nextDouble();
if(avg>=50){
    System.out.println("Pass");
}else{
    System.out.println("Fail");
}
System.out.println("Thanking you..");
```

What are outputs for the following inputs?

- |          |          |
|----------|----------|
| A. 99    | B. 75    |
| C. 49.99 | D. 50.01 |
| E. 50.0  | F. 49.0  |

G. 25

- |   |                        |
|---|------------------------|
| A | Pass<br>Thanking you.. |
| B | Pass<br>Thanking you.. |
| C | Fail<br>Thanking you.. |
| D | Pass<br>Thanking you.. |
| E | Pass<br>Thanking you.. |
| F | Fail<br>Thanking you.. |
| G | Fail<br>Thanking you.. |

32. What are the outputs of following commands?

```
System.out.println(12+8/5%4*(5-4/5)+4*5); //Line 1
System.out.println(4%5*3-4/7+4%2-5/(5*4%5)); //Line 2
System.out.println(5-8%4*5(5/8*(3%4)*4)+8/4+1); //Line 3
System.out.println(1.5%2.1-5.4*1.1/(5.4%5)); //Line 4
System.out.println((5+4)%4+(5/8.0)+4); //Line 5
System.out.println(5-4*6(5%4-3)*5+6/(1.0/2.0)-5*4); //Line 6
System.out.println(7+3-4*4%6+4*2.5-3%2); //Line 7
System.out.println(5-7*(9%4)+5+8/7+2); //Line 8
System.out.println((2-5%5)-10.8%5.1*5*4); //Line 9
System.out.println(5+5-4/(3%1+5+(7-8)*4+5)); //Line 10
System.out.println(9%4*5+6%10-5*4); //Line 12
System.out.println(9%1+5-(5+5%2)-5/8+5); //Line 13
System.out.print(((7 * 2) % 5)+" "); //Line 14
System.out.print(" " + (7 % 5)); //Line 15
```

- Line 1 - 37
- Line 2 - Exception in thread "main" java.lang.ArithmeticException: / by zero at Example.main(Example.java:5)
- Line 3 - Compile error

- Line 4 - (-13.349999999999999)
- Line 5 - 5.625
- Line 6 - Compile error
- Line 7 - 15.0
- Line 8 - 6
- Line 9 - (-10.00000000000000028)
- Line 10 - 10
- Line 12 - (-9)
- Line 13 - 4
- Line 14 - 4
- Line 15 - 2

33. What are the outputs of following commands?

```
int a=1,b=2,c=3,d=4;
int x;
x=a++ + b++ + c++ + d++;
System.out.println(a+ " "+b+ " "+c+ " "+d+ " "+x); //Line 1
x+=a+=b+=c+=d; //Line 2
System.out.println(a+ " "+b+ " "+c+ " "+d+ " "+x); //Line 3
x=a=b=c=d; //Line 4
System.out.println(a+ " "+b+ " "+c+ " "+d+ " "+x); //Line 5
```

- 2 3 4 5 10
- 14 12 9 5 24
- 5 5 5 5 5

34. What are the outputs of following commands?

```
boolean b = false;
System.out.println(10>4 && true !=b==(10+3/2==8)==true); //Line 1
System.out.println(b=false==true||true!=(b=false)); //Line 2
System.out.println((b=false)=true?4:5==5&true==3*2<=29); //Line 3
System.out.print (('a' == 'a')+" "); //Line 4
System.out.print(('a' == 'b')+" "); //Line 5
System.out.print((5 != 6)+" "); //Line 6
System.out.print((5.0 == 5L)+" "); //Line 7
System.out.println((true == false)); //Line 8
```

- Line 1        false
- Line 2        true
- Line 3        compile error
- Line 4        true
- Line 5        false
- Line 6        true

- Line 7            true
- Line 8            false

35. What are the outputs of following commands?

```
boolean b1, b2, b3;
b1 = true != false; //Line 1
b2 = 5%3 == 2 ^ true == !false ; //Line 2
System.out.println((b3 =true) & b2 || b1 == false); //Line 3
System.out.println(b3 = b2 == b1); //Line 4
b3= true; //Line 5
System.out.println(b3^b2&b1|false != (b3 = false)); //Line 6
System.out.println(!b3==b2 && b2 != b1 ||!b1 != b2); //Line 7
```

- false
- false
- true
- false