# INSTITUTE OF SOFTWARE ENGINEERING

## GRADUATE DIPLOMA IN SOFTWARE ENGINEERING

**ASSIGNMENT NAME**

Programming fundamentals

**ASSIGNMENT NO**

05

NUMBER OF QUESTIONS: 63

NUMBER OF COMPLETED QUESTIONS: 62

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STUDENT NAME:  PASINDU SAMPATH BANDARA

NIC: 200228203235

BATCH NO: 63

1. Write a Java program to print “Hello World” 10 times using a for-loop.

```
import java.util.*;
class my_class{
		public static void main(String args[]){
		for(int i=0 ; i<10 ; i++){
			System.out.println("Hello World");
			}
	}
}
```

2. Write a Java program to print integer numbers from 1 to 100 using a for-loop.

```
import java.util.*;
class my_class{
		public static void main(String args[]){
		for(int i=1 ; i<=100 ; i++){
			System.out.println(i);
			}
	}
}
```

3. Write a Java program to print integer numbers from 100 to 1 using a for-loop.

```
import java.util.*;
class my_class{
		public static void main(String args[]){
		for(int i=100 ; i>0 ; i--){
			System.out.println(i);
			}
```

```
	}
}
```

4. Write a Java program to print even numbers between 1 and 100.

```
import java.util.*;
class my_class{
		public static void main(String args[]){
		for(int i=0 ; i<=100 ; i++){
			if(i%2==0){
				System.out.println(i);
			}
		}
	}
}
```

5. Write a Java program to print 10 random numbers between 0 to 100.

```
import java.util.*;
class my_class{
		public static void main(String args[]){
			Random input=new  Random();
		for(int i=0 ; i<=10 ; i++){
			int x=input.nextInt(101);
			System.out.println(x);

		}
	}
}
```

6. Write a Java program to generate random numbers between 0 to 100 and print only the odd numbers.

```
import java.util.*;
class my_class{
		public static void main(String args[]){
			Random input=new  Random();
		for(int i=0 ; i<=100 ; i++){
			int x=input.nextInt(101);
			if(x%2!=0){
				System.out.println(x);
			}

		}
	}
}
```

7. Write a Java program to print all characters A to Z using a single “System.out.println()” line by line.

```
import java.util.*;
class my_class{
	public static void main(String args[]){
	for(int i=65 ; i<91 ; i++){
		char ch=(char)i;
		System.out.println(ch);
		}
	}
}
```

8. Write a Java program to print prime numbers between 1 and 100 by using for-loop.

```
class my_class{
	public static void main(String args[]){
		for( int x = 2 ;x<=100;x++){
			int count=0;
			for(int i=1 ; i<=x ; i++){
				if(x%i==0){
					count=count+1;

				}
				}if(count==2){
					System.out.println(x);

				}
		}
	}
}
```

9. Write a Java program to find the factorial of a given integer number. (Factorial of 4 ! =4x3x2x1)

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input an integer : ");
		int x=input.nextInt();
		int total=1;
		System.out.print("(Factorial of " +x +"!)  [");
		for (int i=x ; i>0 ; i--){
		System.out.print( i +" X ");
		total=total*i;
		}
```

```
                System.out.print("\b\b  = "+total+" ]");



        }
}
```

10. Enhanced the above program (Question 9) to print the factorial of numbers 0 to 10 using a for-loop.

```
import java.util.Scanner;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                for(int x=1; x<=10 ; x++){
                        int t=1;
                        for (int i = 1; i<=x ; i++){
                                t=t*i;
                                System.out.print(i + " * ");
                        }System.out.print("\b\b = "+t+" \n");
                }
        }
}
```

11. Write a Java program to input 50 integer numbers from keyboard, find and print how many numbers which are greater than 100.

```
import java.util.Scanner;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                int count=0;
                for( int x = 0 ;x<50;x++){
```

```
                System.out.print("Input an integr : ");
                int t=input.nextInt();
                if(t>100){
                        System.out.print(t+" , ");
                        count++;
                }
        }
        System.out.println(" numbers greater than 100");
    }
}
```

12. Write a Java program to input 10 marks (type int) for subjects from the keyboard, find the total and average of the marks. Your output should be as follows:

```
        Total : 756
        Max : 98
        Min : 67
        Average : 75.6
```

```
import java.util.*;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                int total=0;
                int max=0;
                int min=100;
                double avg=0;
                for (int i=1 ; i<=10 ; i++){
                System.out.print("Input "+i+" Subject marks : ");
                int x=input.nextInt();
```

```
                if(max<x){
                        max=x;
                        }
                if(min>x){
                        min=x;
                        }
                total+=x;

        }
        System.out.println("Total  : "+total);
        avg=(double)total/10;
        System.out.println("Avarage : "+avg);
        System.out.println("Maximum Mark : " + max);
        System.out.println("Minimum Mark : " + min);
    }
}
```

13. A school is doing a check on the height and the weight of all its students. The school has 100 students. Write a program which

a. Input height and weight of all students

b. Output the average height and weight

c. Include any necessary error traps for the input of height and weight.

```
import java.util.Scanner;
class my_class{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        double h=0;
        double t_h=0;
        double w=0;
        double t_w=0;
        double a_h=0;
```

```
                double a_w=0;
                int s_c = 100;
                for(int i=1 ; i<=s_c ;){
                        System.out.print("Input height "+i +" : ");
                        h=input.nextDouble();
                        if(h<250){
                                System.out.print("Input Weight "+i+" : ");
                                w=input.nextDouble();
                                if(w<80){
                                        t_h=t_h+h;
                                        t_w=t_w+w;
                                         i++;
                                        }else{
                                                System.out.println("Wrong weight input please try again ");
                                                }
                        }else{
                                System.out.println("Wrong height input please try again ");
                                }

                        }
                        a_h=t_h/s_c;
                        a_w=t_w/s_c;
                        System.out.println("Total height is : "+t_h);
                        System.out.println("Total Weight is : "+t_w);
                        System.out.println("Avarage height is : "+a_h);
                        System.out.println("Avarage height is : "+a_w);
        }
}
```

14. An accountant needs to pay the salary of the working employees. Therefore he sends a receipt to the bank requesting the least amount of notes to pay each salary. When the salary is input, the output should be with the least number of notes and coins.

Input Format

==========

Input number of Employees: 12

Input salary 1 : 34888

Input salary 2 : 25000

…

Input salary 12 : 56700

Output Format ==========

R5000 notes : 45

R1000 notes : 9

R500 notes : 8

R100 notes : 6

R50 notes : 11

R20 notes : 4

R10 coins : 7

R5 coins : 9

R2 coins : 12

R1 Coins : 8

```
import java.util.Scanner;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Enter the employees count : ");
		int s=0;
		int c_5000 = 0;
		int c_1000=0;
		int c_500=0;
		int c_100=0;
		int c_50=0;
		int c_20=0;
		int c_10=0;
```

```
int c_5=0;
int c_2=0;
int c_1=0;
int e_c=input.nextInt();
for(int i=1 ; i<=e_c ; i++){
System.out.print("Input sallery "+i+" : ");
s=input.nextInt();
        if(s>=5000){
                c_5000=c_5000+(s/5000);
                s=s%5000;
        }
        if(s>=5000){
                c_5000=c_5000+(s/5000);
                s=s%5000;
        }
        if(s>=1000){
                c_1000=c_1000+(s/1000);
                s=s%1000;
        }
        if(s>=500){
                c_500=c_500+(s/500);
                s=s%500;
        }
        if(s>=100){
                c_100=c_100+(s/100);
                s=s%5000;
        }
        if(s>=50){
                c_50=c_50+(s/50);
                s=s%50;
        }
        if(s>=20){
```

```
                    c_20=c_20+(s/20);
                    s=s%20;
                }
                if(s>=10){
                    c_10=c_10+(s/10);
                    s=s%10;
                }
                if(s>=5){
                    c_5=c_5+(s/5);
                    s=s%5;
                }
                if(s>=2){
                    c_5=c_5+(s/2);
                    s=s%2;
                }
                if(s>=1){
                    c_1=c_1+(s/1);
                    s=s%1;
                }
            }
            System.out.println( "R 5000 Notes \t : "+c_5000);
            System.out.println( "R 1000 Notes \t : "+c_1000);
            System.out.println( "R 500 Notes \t : "+c_500);
            System.out.println( "R 100 Notes \t : "+c_100);
            System.out.println( "R 50 Notes\t : "+c_50);
            System.out.println( "R 20 Notes\t : "+c_20);
            System.out.println( "R 10 Notes\t : "+c_10);
            System.out.println( "R 5 Coins\t : "+c_5);
            System.out.println( "R 2 Coins\t : "+c_2);
            System.out.println( "R 1 Coins\t : "+c_1);
        }
}
```

15. Given code:

```
class Test{
public static void main(String args[]){
        int x = 0;
        int y = 0;
        for(int i = 0; i<5; i++){
                if((++x > 2) || (++y > 2)){
                x++;
                }
        }
        System.out.println(x+" "+y);
        }
}
```

What is the result?

A Prints: 5 3

B Prints: 8 3

C Prints: 8 2

D Prints: 10 3

E None of the above

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

0

1

2

3

4

5

6

7

8

9
0
2
4
6
8
1
3
5
7
9
0
1
2
3
4
5
6
7
8
9
0
1
2
3
4
5
6
7
8
9
1

2

3

4

5

6

7

8

9

10

1

2

3

4

5

6

7

8

9

10

1

2

3

4

5

6

7

8

9

0

1

2

3

4

5

6

7

8

9

1

2

3

4

5

6

7

8

9

10

0

1

2

3

4

5

6

7

8

9

10

0

1

2

3

4

5

6

7

8

9

17. Which of the following code fragments are legal?

A. int i=0;
for(int i=0;i<10;i++){}

B. for(int i=0;i<10;i++){}
for(int i=0;i<10;i++){}

C. for(int i=0;i<10;i++){
int i=3;
}

D. {int i=0;}
for(int i=0;i<10;i++){}

18. What will be the output when you compile and run the following code fragments?

A. Error at line 5
B. Error at line 6.
C. Error at line 7
D. Error at line 8
E. Error at line 9
F. Error at line 10.
G. No Errors
H. None of the above

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

A. Prints 5 6 6 5
B. Prints 6 5 5 6
C. Prints 5 4 4 5
D. Prints 6 7 7 6
E. Compile Error

20. Which of the following code fragment can be used to

print integer number 100 to 109.

A. for(int i=100;i<110;i++){

System.out.println(i);

}

B. for(int i=100;i<110;i++){

System.out.println(i++);

}

C. for(int i=0;i<10;i++){

int k=100;

System.out.println(i+k);

}

D. for(int i=0;i<10;i++){

int k=100;

System.out.println(k);

k++;

}

E. int k=100;

for(int i=0;i<10;i++){

System.out.println(k);

k++;

}

21. 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.

22. 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

23. What are the outputs of the following code fragments?

a. for(int i=0;;i++){

System.out.println("i : "+i);

}

Unlimited count.(From 0 to max of Int and again min to 0 )

b. int i=0;

for(;i<10;){

System.out.println("i : "+i++);

}

0 to 9 count with i

c. for(int i=0;i<10;i++){

System.out.println("i : "+i++);

}

0 to 10 even numbers without 10.

d. for(char ch='A';ch<91;ch++){

System.out.println("ch : "+ch);

}

A-Z characters;

e. for(int i=0,j=10;i<=j;i++,j--){

System.out.println(i+" "+j);

}

0 10

1 9

2 8

3 7

4 6

5 5

f. for(int i=0;i<128;i++){

System.out.println((char)i+" "+i);

}

0

☺ 1

☻ 2

♥ 3

♦ 4

♣ 5

♠ 6

7

8

9

10

♂ 11

♀ 12

13

♫ 14

☼ 15

► 16

◄ 17

↕ 18

‼ 19

¶ 20

§ 21

▬ 22

↨ 23

↑ 24

↓ 25

→ 26

← 27

∟ 28

↔ 29

▲ 30

▼ 31

 32

! 33

" 34

# 35

$ 36

% 37

& 38

' 39

( 40

) 41

* 42

+ 43

, 44

- 45

. 46

/ 47

0 48

1 49

2 50

3 51

4 52

5 53

6 54

7 55

8 56

9 57

: 58

; 59

< 60

= 61

> 62

? 63

@ 64

A 65

B 66

C 67

D 68

E 69

F 70

G 71

H 72

I 73

J 74

K 75

L 76

M 77

N 78

O 79

P 80

Q 81

R 82

S 83

T 84

U 85

V 86

W 87

X 88

Y 89

Z 90

[ 91

\ 92

] 93

^ 94

_ 95

` 96

a 97

b 98

c 99

d 100

e 101

f 102

g 103

h 104

i 105

j 106

k 107

l 108

m 109

n 110

o 111

p 112

q 113

r 114

s 115

t 116

u 117

v 118

w 119

x 120

y 121

z 122

{ 123

| 124

} 125

~ 126

⌂ 127

g. int x=1;

for(int i=0;i<10;i++){

int k=100;

System.out.println(x+k);

k++;

}

101

101

101

101

101

101

101

101

101

101

h. int x;

```
for(int i=0;i<10;i++){
x=100;
System.out.println(x++);
}
System.out.println(x);
```

Compile error Variable x might not have been initialized.

24. 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 line 5?

| | | | | | |
|---|---|---|---|---|---|
| A. int x=1; | 123 | B. int x=2; | 23 | C. int x=3; | 3 |
| D. int x=4; | 4123 | E. int x=0; | 4123 | F. int x=5; | 4123 |

25. Which of the following code fragments can be inserted

at Line 10 to make Line 12 valid?

```
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;

26. 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 line 5?

| | | | | | |
|---|---|---|---|---|---|
| A. int x=1; | 1 | B. int x=2; | 231 | C. int x=3; | 31 |
| D. int x=4; | 4 | E. int x=0; | 4 | F. int x=5; | 4 |

27. What will be the result of attempting to compile and run the following code?

```
class Example {
public static void main(String[] args) {
 for (int i = 0; i<10; i++) {
 switch(i) {
case 0:
 System.out.println(i);
 }
 if (i) {
 System.out.println(i);
 }
 }
 }
}
```

Select the one correct answer.

A. The code will fail to compile, owing to an illegal switch expression in the switch statement.

B. The code will fail to compile, owing to an illegal conditional expression in the if statement.

C. The code will compile without error and will print the numbers 0 through 10 when run.

D. The code will compile without error and will print the number 0 when run.

E. The code will compile without error and will print the number 0 twice when run.

F. The code will compile without error and will print the numbers 1 through 10 when run.

28. 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:

29. 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 B. Line 2 C. Line 3 D. Line 4

E. Line 5 F. Line 6 G. Line 7 H. Line 8

I. Line 9 K. Line 10

30. Which of the following loop declarations are legal?

A. for(int i=0;i<10;i++){}

B. for(i=0;i<10;i++){}

C. for(int i=0;;i++){}

D. for(int i=0;i<10;){}

E. for(double d=0;d<10;d++){}

F. for(;;){}

G. for(byte b=0;b<10;b++){}

H. for(;int i=0;){}

I. for(int i=0,j=10;i++;j++){}

J. for(int i=0;;){}

K. for(char ch='A'; ch>92;ch++){}

31. 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;

32. Write a Java program to print "Hello World" 10 times using for-loop and while-loop.

```
import java.util.*;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                for(int i=0 ; i<10 ; i++){
                        System.out.println("Hello World");
```

```
                }
        }
}
```

```
import java.util.*;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                int x=0;
                while(x<10){
                        System.out.println("Hello World");
                        x++;
                        }
        }
}
```

33. Write a Java program to print integer numbers from 1 to 100 using while-loop.

```
import java.util.*;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                int x=0;
                while(x<=100){

                        System.out.println(x);
                        x++;
                        }
        }
}
```

34. Write a Java program to print even numbers between 1 and 100 using while loop.

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		int x=0;
		while(x<=100){

			if(x%2==0){
				System.out.println(x);
			}
			x++;
			}
	}
}
```

35. Write a Java program for print prime numbers between 1 and 100 by using while-loop.

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		int x=0;

		int reminder=0;
		int count=0;

		while(x!=101){
				int y=x;
				count=0;
			while(y!=0){
			reminder=x%y;
```

```
                    if(reminder==0){
                        count++;
                        }
                    y--;
                }if(count==2){
                        System.out.println(x);
                    }
                    x++;
            }

        }
}
```

36. Write a Java program to find & print out the sum of digit of a number input by a user.

```
import java.util.*;
class my_class{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        System.out.print("Input an integer : ");
        int x=input.nextInt();
        int y=x;
        int l_d=0;
        int sum=0;
        while(x!=0){
            l_d=x%10;
            sum=sum+l_d;
            x=x/10;
            }
        System.out.println("Sum of each digits of "+y+" is "+sum);
    }
}
```

37. Write a Java program to reverse an integer number input by a user.

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input an integer : ");
		int x=input.nextInt();
		int y=x;
		int r_n=0;
		int l_d=0;
		while(x!=0){
			l_d=x%10;
			r_n=r_n*10;
			r_n=r_n+l_d;
			x=x/10;
			}
		System.out.println("Reverse number of "+y+" is "+r_n);
	}
}
```

38. Write a program to check & print whether the given number is Armstrong or not.

(A number is Armstrong if the sum of cubes of individual digits of a number is equal to the number itself.

For example, 371 is an Armstrong number as 33 + 73 + 13 = 371. Some other Armstrong numbers are: 0, 1, 153, 370, 407.)

```
import java.util.Scanner;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		System.out.print("Input an number : ");
		int y = input.nextInt();
```

```
                int l_d=0;
                int sum=0;
                int x=y;
                do{
                        l_d=y%10;
                        sum=sum+(l_d*l_d*l_d);

                        y=y/10;
                        System.out.println(l_d);

                }while(y!=0);
                        if(x==sum){
                                System.out.println(x+" is a Armstrong number ");
                        }else{
                        System.out.println(x+ " is not a Armstrong number ");
                }
        }
}
```

39. The greatest common divisor (GCD) of two integers is the largest integer that evenly divides each of the two numbers. Write Java method GCD that returns the greatest common divisor of two integers. Use this method in a program that inputs a number and prints it results

```
import java.util.Scanner;
class my_class0{
        public static void main(String args[]){
                Scanner input=new  Scanner(System.in);
                System.out.print("Input first num : ");
                int x = input.nextInt();
                System.out.print("Input second num : ");
```

```
                int y = input.nextInt();
                int reminder = 0;
                int reminder2=0;
                int max=0;
                for(int i = x ; i>0 ; i--){
                        reminder = x%i;
                        if(reminder==0){
                                reminder2 = y%i;
                                }if(reminder2==0){
                                        if(max<i){
                                                max=i;
                                                }
                                        }
                        }
                        System.out.println("GCD of "+x+" and "+y+" is "+max);
        }
}
```

40. If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9.

The sum of these multiples is 23. Write a Java program to find the sum of all the multiples of 3 or 5 below 1000.

```
import java.util.Scanner;
class my_class0{
        public static void main(String args[]){
                int reminder1=0;
                int reminder2=0;
                int sum=1;
                for(int i=0 ; i<1000 ;i++){
```

```
            reminder1=i%3;
                        if(reminder1==0){
                            System.out.println(i);
                            sum=sum+i;
                        }
            reminder2=i%5;
                        if (reminder2==0){
                            System.out.println(i);
                            sum=sum+i;
                        }
            }
        System.out.println("The sum of all the natural numbers below 1000 that are multiples of 3 or 5 is : "+sum);

        }
}
```

41. Write a Java method to find the no of digits of a given number.

```
import java.util.Scanner;
class my_class0{
        public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        System.out.print("Input an integer : ");
        int x= input.nextInt();
        int y=x;
        int count=0;
        do{
            x=x/10;
            count++;
            }while(x!=0);
            System.out.println("Digits count of "+y+" is " + count);
```

```
	}
}
```

42. Write a Java program to check whether the number is palindrome or not.

```
import java.util.Scanner;
class my_class0{
	public static void main(String args[]){
	Scanner input=new Scanner(System.in);
	System.out.print("Input an integer : ");
	int x= input.nextInt();
	int y=x;
	int r_n=0;
	int l_d=0;
		do{
			l_d=x%10;
			r_n=r_n*10+l_d;
			x=x/10;
		}while(x!=0);
			if(y==r_n){
				System.out.println(y+" is a plindrome number ");
			}else{
				System.out.println(y+" is not a plindrome number ");
				}
	}
}
```

43. 2520 is the smallest number that can be divided by each of the numbers from 1 to 10 without any remainder. Write a Java program to find the smallest positive number that is evenly divisible by all of the numbers from 1 to 20.

```
import java.util.Scanner;
class my_class0{
```

```
	public static void main(String args[]){
	Scanner input=new Scanner(System.in);
	int remainder=0;
	int count=0;
	int num=0;
	do{
		count++;
		num=count;
		for(int i=1 ;i<20; i++){
			remainder=count%i;
			if(remainder!=0){
				break;
				}
			}
		}while(remainder!=0);
		System.out.println(count);
	}
}
```

44. It can be seen that the number, 125874, and its double, 251748, contain the same digits, but in a different order. Write a Java program to find & print the smallest positive integer, x, such that 2x, 3x, 4x, 5x, and 6x, contain the same digits.

45. The prime 41, can be written as the sum of six consecutive primes:41 = 2 + 3 + 5 + 7 + 11 + 13 This is the longest sum of consecutive primes that adds to a prime below one-hundred. Write a Java programme to find the prime number which below one-thousand that can be written as the sum of the most consecutive primes.

```
class my_class{
	public static void main(String args[]){
		int x=0;
		int sum=0;
```

```
int o_max=0;
int max=0;
while(max<1000){
        int count2=0;
        int s2=0;
        int rem2=0;
        int s1=0;
        int reminder=0;
        int i=x;
        int count=0;
        while(i!=0){
                reminder = x%i;
                if(reminder == 0){
                        count++;
                        }
                        i--;
                }if (count==2){
                        sum=sum+x;
                        s1=sum;
                        while(s1!=0){
                                rem2=sum%s1;
                                if(rem2==0){
                                        count2++;
                                        }
                                        s1--;
                                }if(count2==2){
                                        o_max=max;
                                        max=sum;
                                        }
                        }
                        x++;
```

```
                }System.out.println(o_max);



        }
}
```

46. An estate agent advertises houses for sale. The Customer inquiries for 7 days working week are entered weekly into a computer. Write a Java program which

a. Input the number of customer inquiries each day.

b. Input the house price each customer inquiries above.

c. Output how many customer inquiries each day about houses costing less than 50,000 rupees.

d. Output the percentage of all enquiries made during the week about houses costing more the 5 million rupees.

```
import java.util.*;
class my_class{
        public static void main(String args[]){
                Scanner input=new Scanner(System.in);
                int w_c=1;
                int ai_c=0;
                int m5_c=0;

                while(w_c!=8){
                        int count=0;
                        int c5=0;
                        System.out.println("\t\t\t\t  "+w_c+"Day");
                        System.out.print("How many inquiris : ");
                        int i_c=input.nextInt();
                                while(i_c!=0){
                                count++;
                                System.out.print(count+" Inquirie  Prize : ");
                                double p=input.nextDouble();
                                        if (p<50000.00){
                                                c5++;
```

```
                    }
                    if(p>5000000){
                        m5_c++;
                        }
                    ai_c++;
                    i_c--;

                }if(c5>0){
                    System.out.println("There are "+c5+" inquiries costing less than 50000.00");
                }
            w_c++;
            }
            double p=((double)m5_c/ai_c)*100;
            System.out.println(p+"% of inquiries more than 5000000 in this week");
    }
}
```

47. Write a Java program that b. Input a series of positive integer numbers. ( -1 is used to terminate the input) c. Output how many numbers were less than 1000. d. Output how many numbers were greater than 1000

```
import java.util.*;
class my_class{
    public static void main(String args[]){
        Scanner input=new Scanner(System.in);
        int x=0;
        int g_c=0;
        int l_c=0;
        int t_c=0;
        while(x!=-1){
            System.out.print("Input an integer : ");
            x=input.nextInt();
            if(x>1000){
```

```
                    g_c++;
                    }
                if(x<1000 ){
                    if(x!=-1){
                        l_c++;
                    }
                    }
                if(x==1000){
                    t_c++;
                    }

            }
            System.out.println("There are "+g_c+" numbers grater than 1000");
            System.out.println("There are "+l_c+" numbers leser than 1000");
            System.out.println("There are "+t_c+" numbers Equals to 1000");
        }
}
```

48. Given:

```
class Example {
2. public static void main(String [] args) {
3. int x = 0;
4. // insert code here
5. do { } while (x++ < y);
6. System.out.println(x);
7. }
8.}
```

Which, inserted at line 4, produces the output 12?

A. int y = x;

B. int y = 11;

C. int y = 13;

D. int y = 10;

E. int y = 12;

F. None of the above

49.Develop a Java program for a principal to evaluate a teacher's progress. The program should check the teacher's contribution to teaching a particular subject. To do that the average of the students' marks should be found out each class. The number of students a class of the school is not the same, so that -1 terminates the input.

The results should be calculated and showed as follows.

No of Students : 41

Total marks : 3107

Maximum : 97

Minimum : 13

Average : 56.455

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		int x=0;
		int t_m=0;
		int max=0;
		int min=100;
		int count=1;
		do{
			System.out.print("Input "+count+" Mark ");
			x=input.nextInt();
			if(x<=100){
				if(x!=-1){
				t_m=t_m+x;
				count++;
				if(x>max){
				max=x;
				}
				if(min>x){
				min=x;
				}
```

```
                    }
                    }else{
                            System.out.println("Wrong input");
                            }

            }while(x!=-1);
            double avg=(double)t_m/(count-1);
            System.out.println("No of students \t\t: "+(count-1));
            System.out.println("Total marks \t\t: "+t_m);
            System.out.println("Maximum number is \t: "+max);
            System.out.println("Minimum  mark is \t: "+min);
            System.out.println("Avarage of marks \t: "+avg);
        }
}
```

50

line 24- Variable might not have been initialized error because it is only assigned value if for loop runs once.

line 25-variable might not have been initialized error because it is only assigned value if  while loop runs once.

line 26-output 11.

line 27-variable might not have been initialized error because it is only assigned value if switch runs once.

line 28-output 0.

51 . What will be the result of attempting to compile and

run the following code?

```
class Example {
 public static void main(String[] args) {
 boolean b = false;
 int i = 1;
 do {
 i++;
 b = ! b;
 }
while (b);
```

```
 System.out.println(i);
 }
}
```

A. The code will fail to compile since b is an invalid conditional expression for the do-while statement.

B. The code will fail to compile since the assignment b =! b is not allowed.

C. The code will compile without error and will print 1 when run.

D. The code will compile without error and will print 2 when run.

E. The code will compile without error and will print 3 when run.

52. Given:

```
class Example {
 public static void main (String[] args) {
 int j = 0;
 while (j++ < 2)
 System.out.print(j+" ");
}
}
```

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

A. 0 0 0 1 B. 2

C . 0 1 2 0 1 2 D. 0 1 2 3 4 5

E. 0 0 1 1 2 2 F. 1 2

53. Given:

```
class Example{
 public static void main (String[] args) {
int j = 0;
```

```
do
 System.out.print(j);
 while (j++ < 2);
}
}
```

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

A. 0001 B. 012 C. 012012

D. 012345 E. 001122 F. 1112

54. Given:

```
class Example{
public static void main(String[] args) {
 int k=0;
 int l=0;
for (int i=0; i <= 3; i++) {
k++;
if (i == 2) break;
l++;
}
 System.out.println(k + ", " + l);
 }
}
```

A. The program will fail to compile.

B. The program will print 3, 2 when run.

C. If the break is replaced by continue, the program will print 4, 3 when run.

D. If the break is replaced by return, the program will fail to compile.

E. If the break is simply removed, the program will fail to compile.

55. Which statements are true? (Select 2 correct answers)

A. {{}} is a valid statement block.

B. { continue; } is a valid statement block.

C. block: { break block; } is a valid statement block.

D. block: { continue block; } is a valid statement block.

E. The break statement can only be used in a loop

(while, do-while or for) or a switch statement.

56. Given:

```
class Example{
public static void main(String args[]){
for(int i=0; i<10; i++){
int j=i%3;
switch(j){
case 0: System.out.print("A ");
break;
case 1: System.out.print("B ");
break;
default: System.out.print(j+" ");
}
}
}
}
```

What is the result of attempting to compile and run

the program?

A. A B A B

B. A B 1 A B 1 A B 1 A

C. B 2 B 2

D. A B 2 A B 2 A B 2 A

E. A B A B A

F. A A 2 A B 2 A B 2 A

57. Given the following code fragment, which of the

following lines will be a part of the output?

```
class Example {
public static void main (String[] args) {
outer:for (int i = 0; i < 3; i++) {
for (int j = 0; j < 2; j++) {
if (i == j) {
continue outer;
}
System.out.println("i=" + i + ", j=" + j);
}
}
}
}
```

Select the two correct answers.

A. i=1, j=0 B. i=0, j=1

C. i=1, j=2 D. i=2, j=1

E. i=2, j=2 F. i=3, j=3

58. Given:

```
class Example {
public static void main (String args[]) {
int x=1;
L1: if(x>0){ //Line 1
System.out.print("A "); //Line 2
L2: if(x==1) {break L1;} //Line 3
System.out.print("B "); //Line 4
}
}
}
```

A. Error at line 1 B. Error at line 2

C. Error at line 3 D. Error at line 4

E. Prints A F. Prints A B

59. Predict the output for the following piece of code.

```
class Example{
public static void main(String args[]){
for ( int i = 1 ; i <= 5 ; i++ ){
if ( i < 5 ) {
continue;
}else System.out.println( i );
}
}
}
```

A. 1 to 5 are printed on a new line each

B. 1 to 4 are printed on a new line each

C. Only 5 is printed

D. 2 to 5 are printed on a new line each

E. 2 to 4 are printed on a new line each

60. What will be the output when you compile and run the following program?

```
class Example {
public static void main (String[] args) {
int i = 0;
int j = 0;
label1: while (i++<5) {
label2: for (;;) {
label3: do {
System.out.print(i+" "+j+" ");
switch (i+j++) {
case 0: continue label3;
```

```
case 1: continue label2;
case 2: continue label1;
case 3: break;
case 4: break label3;
case 5: break label2;
case 6: break label1;
default: break label1;
}
} while (++j<5);
}
}
}
}
```

A. 1 0 1 1 2 2 2 3 3 4 B 1 2 3 4 5 2 2 3 3 4

C. 1 1 2 2 3 3 4 4 5 5 B 0 0 1 1 2 2 2 3 3 4

D. Compile Error

61. Write a Java program to print the following output using a single “System.out.print(“* ”)”

```
*
* *
* * *
* * * *
* * * * *
* * * * * *
* * * * * * *
* * * * * * * *
* * * * * * * * *
* * * * * * * * * *
```

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		int line=10;
		int count=0;
		while(line!=0){
			int x=0;
			count++;
			while(x!=count){
				System.out.print(" * ");
				x++;
				}
				System.out.println(" ");
			line--;
			}
	}
}
```

62. Write a Java program to print the following output using a single “System.out.println(“* ”)”

```
* * * * * * * * * *
* * * * * * * * *
* * * * * * * *
* * * * * * *
* * * * * *
* * * * *
* * * *
* * *
* *
*
```

```
import java.util.*;
class my_class{
	public static void main(String args[]){
		Scanner input=new Scanner(System.in);
		int line=10;
		while(line!=0){
			int x=0;
			while(x!=line){
				System.out.print(" * ");
				x++;
				}
				System.out.println(" ");
			line--;
			}
	}
}
```

63. Write a Java program to print the following outputs using two for-loops.

| | | | |
|---|---|---|---|
| 0 0 | 0 0 | 5 0 | 5 5 |
| 0 1 | 1 0 | 5 1 | 5 4 |
| 0 2 | 2 0 | 5 2 | 5 3 |
| 0 3 | 3 0 | 5 3 | 5 2 |
| 0 4 | 4 0 | 5 4 | 5 1 |
| 1 0 | 0 1 | 4 0 | 4 5 |
| 1 1 | 1 1 | 4 1 | 4 4 |
| 1 2 | 2 1 | 4 2 | 4 3 |
| 1 3 | 3 1 | 4 3 | 4 2 |
| 1 4 | 4 1 | 4 4 | 4 1 |
| 2 0 | 0 2 | 3 0 | 3 5 |
| 2 1 | 1 2 | 3 1 | 3 4 |
| 2 2 | 2 2 | 3 2 | 3 3 |
| 2 3 | 3 2 | 3 3 | 3 2 |
| 2 4 | 4 2 | 3 4 | 3 1 |
| 3 0 | 0 3 | 2 0 | 2 5 |
| 3 1 | 1 3 | 2 1 | 2 4 |
| 3 2 | 2 3 | 2 2 | 2 3 |
| 3 3 | 3 3 | 2 3 | 2 2 |
| 3 4 | 4 3 | 2 4 | 2 1 |
| 4 0 | 0 4 | 1 0 | 1 5 |
| 4 1 | 1 4 | 1 1 | 1 4 |
| 4 2 | 2 4 | 1 2 | 1 3 |
| 4 3 | 3 4 | 1 3 | 1 2 |
| 4 4 | 4 4 | 1 4 | 1 1 |

```
import java.util.*;

class Example{

	public static void main(String args[]){

		int x = 5;

		for (int i=0 ; i<5 ; i++){

			 int y=5;

			for(int j=0; j<5 ; j++){
```

```
                    System.out.println(i+" "+j+"\t "+j+" "+i+" \t "+x+" "+j+"\t"+x+" "+y);
                    y--;
                    }
                x--;
                }

        }
}
```