

Question one

```
package excep;
```

```
public class student1 {  
    private int age;  
    public void setAge(String s)  
    {  
        age = Integer.parseInt( s);  
    }  
    public int getAge(){  
        return age;  
    }  
}
```

```
package excep;
```

```
public class studentMain {  
  
    public static void main(String[] args) {  
        // TODO Auto-generated method stub  
        student1 P = new student1();  
        try{  
            System.out.println("start try block");  
            P.setAge("U");  
            //P.setAge("33");  
            System.out.println("end try block");  
        }  
        catch (NumberFormatException e)  
        {  
            // System.out.println(e.getMessage()); // exception ال نوع عن معلومه تطيع  
            System.out.println("hala");  
        }  
        System.out.println(P.getAge());  
        System.out.println("goodbye");  
    }  
}
```

Question Two

```

package excep2;

public class student2 {
    private int age;
    public void setAge (String S)
    {
        try{
            System.out.println("Java");
            age=Integer.parseInt(S);
            System.out.println("welcome");

        }

        // catch (ArithmeticException e)
        catch (NumberFormatException e)
        {
            System.out.println("age is invalid, please enter digit only");
            System.out.println("good");
        }
        System.out.println("salam");
    }
    public int getAge(){
        return age;
    }
}

package excep2;

public class studentMain {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        student2 P = new student2();
        try{
            System.out.println("start try block");
            //P.setAge("33");
            P.setAge("U");
            System.out.println("end try block");
        }

        catch (NumberFormatException e)
        {
            // System.out.println(e.getMessage());
            System.out.println("Java123");
        }

        System.out.println(P.getAge());
        System.out.println("goodbye");
    }

}

```

Question Three

```

package excep2;
import java.util.Scanner;
public class student3 {

    private int age;
    public void setAge(String S){
        Scanner input = new Scanner (System.in);
        boolean ok = true;
        System.out.println("marhaba");
while (ok)
{
    try {
        age = Integer.parseInt(S);

        ok = false; // اخطاء بدون فوقها ما ينفذ عندما الا الجمله لهذه يصل لن
    }
    catch (Exception e){ // exception e نوع لأي تصلح
        System.out.println("age is invalid, please enter digit only : ");
        S=input.next();
    } //end catch
    System.out.println("good");
} //end while
    } // end setAge
    public int getAge(){
        return age;
    }
}
package excep2;

public class studentMain3 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        student3 P = new student3();
        try{
            System.out.println("start try block");
            //P.setAge("33");
            P.setAge("U");
            System.out.println("end try block");
        }

        catch (NumberFormatException e)
        {
            //      System.out.println(e.getMessage());
            System.out.println("Java3");
        }

        System.out.println(P.getAge());
        System.out.println("goodbye");
    }

}

// enter J then enter K then enter 5

```

Question Four

```

package excep4;

public class MultiException {
    int x;
    public void setX(String S) throws NumberFormatException //المستخدم ارشادية مجرد شئ تنفذ لا
    {
        try{
            System.out.println(" The value of X: ");
            x = Integer.parseInt(S);
            System.out.println(S);
            System.out.println("success ");
            System.out.println("divide step:");
            int z=8/x;
            System.out.println("success divide");
        }
        catch (NumberFormatException e)
        {
            System.out.println("we are in ctach NumberFormatException ");
        }
        catch (ArithmeticException e){
            System.out.println("not success");
        }
        System.out.println("Java111");
    } //end setx
}

```

```

package excep4;
import java.util.Scanner;
public class Main4 {

    public static void main(String[] args) {
        Scanner i = new Scanner(System.in);
        MultiException M = new MultiException();
        System.out.println("enter the value of X: ");
        String S = i.next();
        M.setX(S);
        System.out.println("goodbye");

    }

}

```

```

//Enter the value of x: 0
//try again and enter X = 1
//try again and enter X = H

```

Question five

```
//try - throw - catch
package trythrowcatch;

import java.util.*;
public class CalcAverage {
public int avgFirstN (int N) throws ArithmeticException {
    int sum = 0;
    try {
        System.out.println("begin try block");
        if(N>5)
            throw new NullPointerException("we dont want number greater
than 5");
        System.out.println("second throw");
        if(N==5)
            throw new IndexOutOfBoundsException();
        System.out.println("third Throw");
        if (N<0)
            throw new ArithmeticException("you must enter positive
number");
        for (int k=1; k<=N;k++)
            sum+=k;
        System.out.println("end try block");

        return sum/N;
    }
    catch (ArithmeticException e)
    {
        System.out.println(e.getMessage());
        System.out.println("N=zero is invalid, please try again: ");
    }
    catch (Exception e)
    {
        System.out.println(e.getMessage()+"\nPlease enter positive
integer"); // catch ال لهذا اوصلتنا التي throw داخل الموجوده الرساله تطبع
    }
    return 0;
}
}

// throw الى البرنامج يصل عندما
// مباشره من try من يخرج
// مناسبه الى catch
// في طباعه جمله يوجد كان اذا
// throw في الموجوده الرساله يطبع e.getMessage جمله داخل موجود اذا
// null تطبع e.getMessage فان رساله throw داخل يوجد لا اذا
```

```
package trythrowcatch;

public class Main5 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        CalcAverage C = new CalcAverage();
```

```

System.out.println("hello main");
System.out.println(C.avgFirstN(-1));
System.out.println("goodbye main");
    }

}

//try the following : C.avgFirst(3)
//try the following : C.avgFirst(5)
//try the following : C.avgFirst(6)
//try the following : C.avgFirst(-1)

```

Question Six

```

package excep5;
// try - catch- finally

import java.util.*;
public class CalcAverage2 {
public int avgFirstN (int N) throws ArithmeticException {
    int sum = 0;
    try {
        System.out.println("begin try block");
        if(N>5)
            throw new NullPointerException("we dont want number greater
than 5");
        System.out.println("second throw");
        if(N==5)
            throw new IndexOutOfBoundsException();
        System.out.println("third Throw");
        if (N<0)
            throw new ArithmeticException("you must enter positive
number");
        for (int k=1; k<=N;k++)
            sum+=k;
        System.out.println("end try block");

        return sum/N;
    }
    catch (ArithmeticException e)
    {
        System.out.println(e.getMessage());
        System.out.println("N=zero is invalid, please try again: ");
    }
    catch (Exception e)
    {

```

```

        System.out.println(e.getMessage()+"\nPlease enter positive
integer"); // catch ال لهذا اوصلتنا التي throw داخل الموجوده الرساله تطبع
    }

    finally
    {
        System.out.println("we are in finally block");

    }

    return 0;
}
}

```

// finally & exception & catch مناسب >>>> execute part of try before exception then execute catch and finally block & continue the program
 //finally & exception & catch غير مناسب >>>> execute part of try before exception then finally block & stop the program
 // finally with no exception >>>>execute all try block then finally block and continue the program

```

package excep5;

import trythrowcatch.CalcAverage;

public class main6 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        CalcAverage2 D= new CalcAverage2();
        System.out.println("hello main");
        System.out.println(D.avgFirstN(-1));
        System.out.println("goodbye main");
    }

}

```