Name : Shashikant Kanole.

Center: juhu.

Q1]….

Algorithm:-

1) Start.

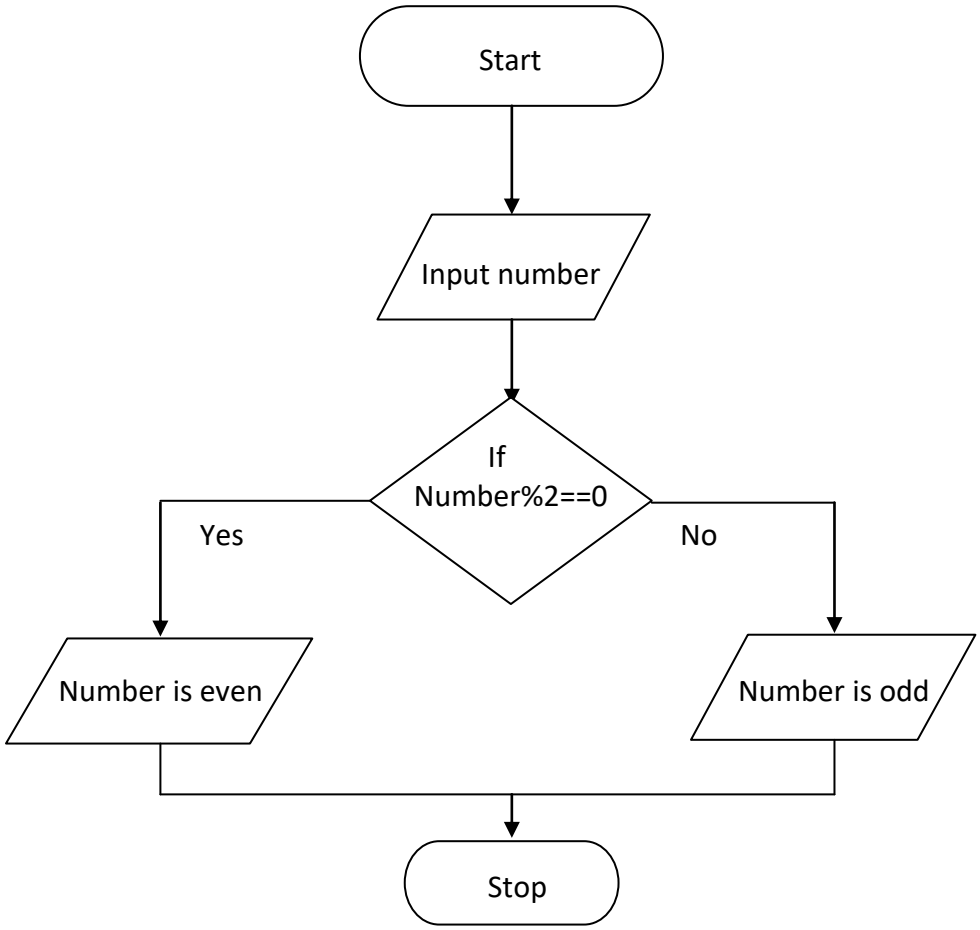
2) Take input as int. (check weather given number is integer if not end)

3) Modular by 2 and check reminder.

4) If reminder is 0 then given number is even or number is odd.

5) Stop.

Flowchart:-



Code: -

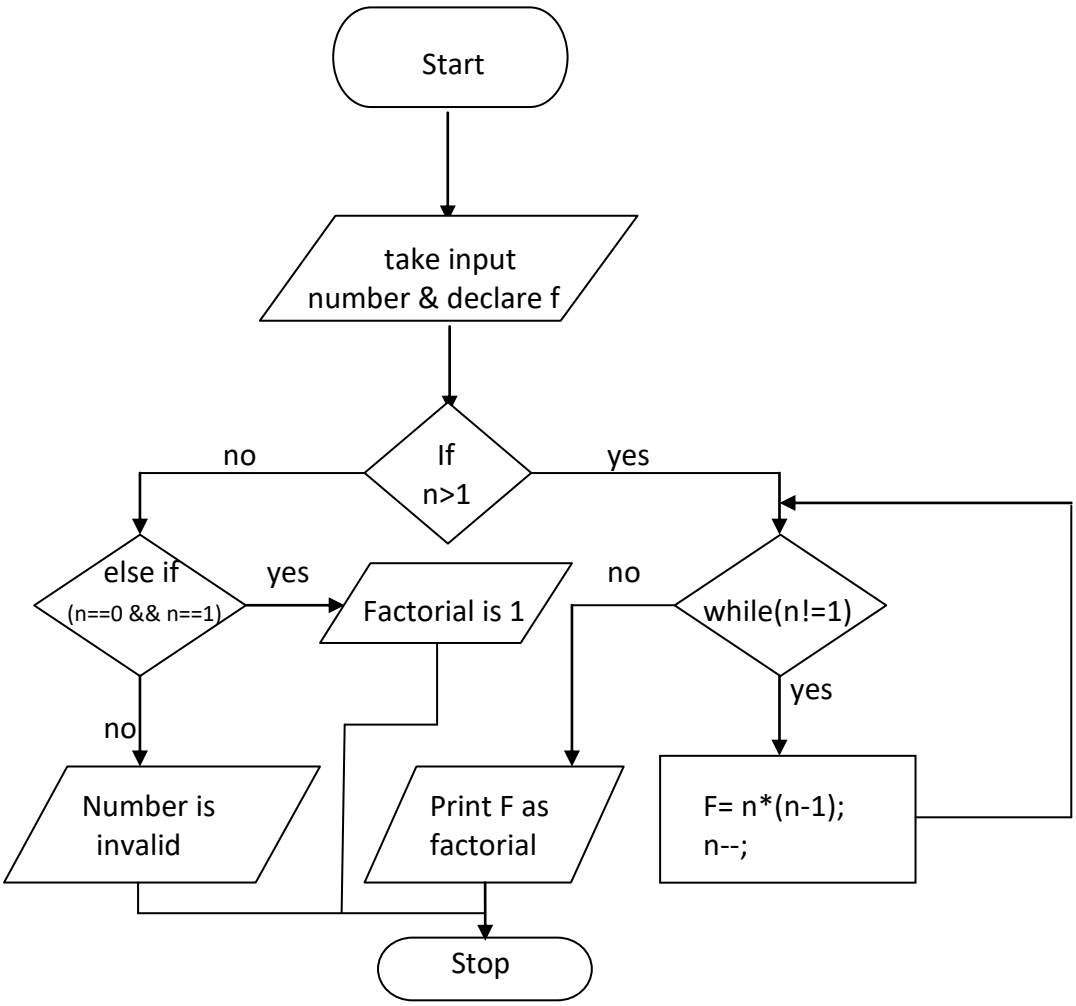
```
import java.util.Scanner;
class Question1{
    public static void main(String args[]){
            System.out.print("Enter any number: ");
            Scanner sc = new Scanner(System.in);
            int n = sc.nextInt();
            if(n%2 == 0){
                    System.out.println("Enterd number is Even");
                    }
            else{
                    System.out.println("Enterd number is Odd");
                    }
    }}
```

Q2]…..

Algorithm:-

1) Start.
2) Take input n as int. (check weather given number is integer if not end)
3) Declare F variable as a factorial.
4) If n>1 (check number is greater than 0)
5) while (n!=1){
F= n*(n-1)
n-- ; [repeat step 4 until n=1]
}
print F.
6) Else if (n==0 && n==1) (show factorial of 0 is 1)
7) Else (n<0) (number is invalid)
8) Stop.

Flowchart:-



Code:-

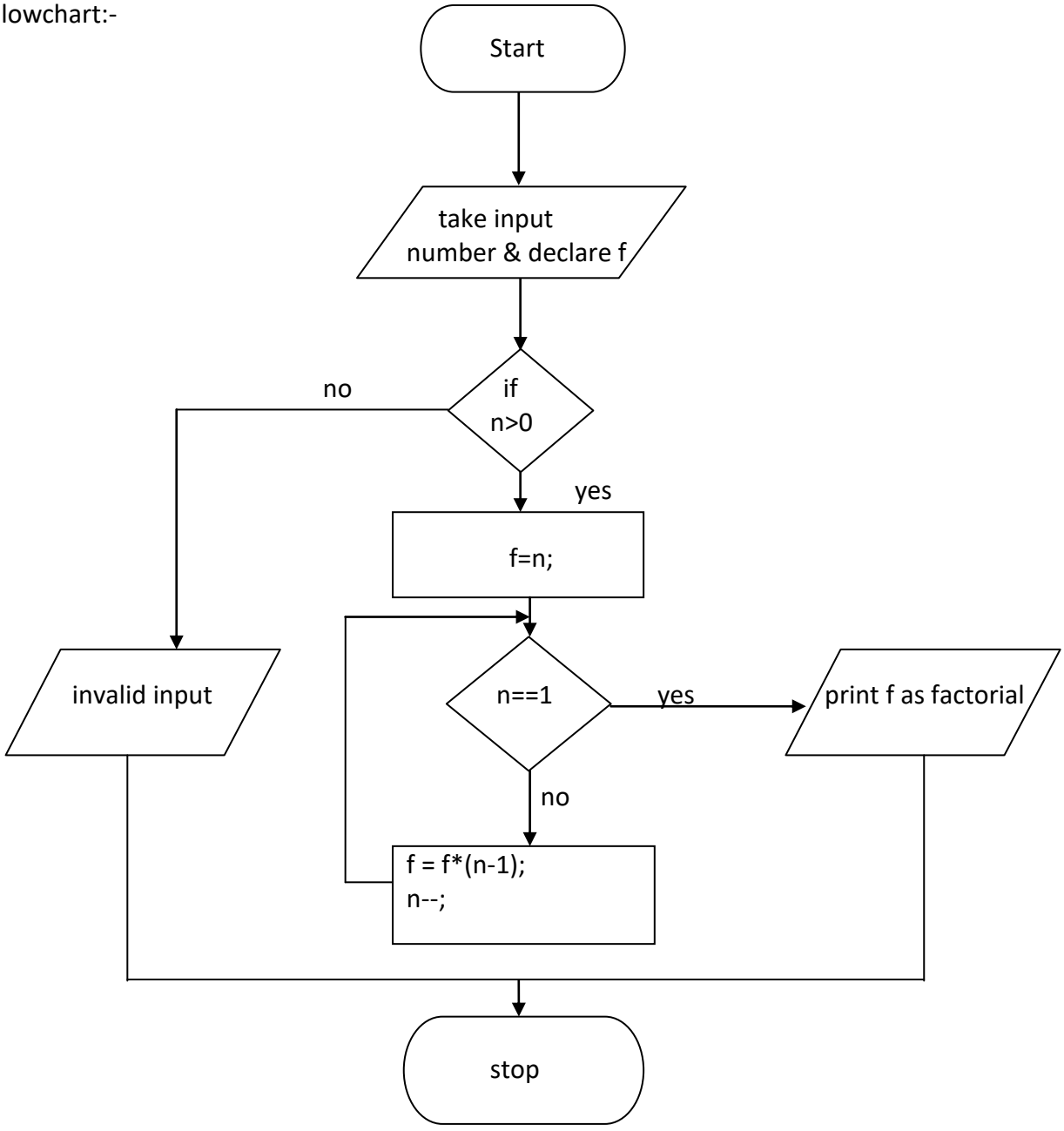
```
import java.util.Scanner;
class Question2{
    public static void main(String args[]){
            System.out.print("Enter any number: ");
            Scanner sc = new Scanner(System.in);
            int num = sc.nextInt();
            int n = num;
            int f = num;
            if(num>0){
                    while(num!=1){
                            f= f * (num-1);
                            num--;
                            }
                    System.out.print("The factorial of "+ n +" is = " + f);
            }
            else if(num==0){
                    System.out.println("Factorial of 0 is 1");
            }
            else{
                    System.out.println("Factorial cannot define");
            }
    }
}
```

Q3]……

Algorithm:-

1) Start.
2) Take input n as int.(check weather given number is int if not end)
3) F variable as a factorial.
4) If n>=1 (check number is greater than 0)
5) F = n * (n-1);
   n-- ;
6) Check n = 1. (If no go to step 5 else continue)
7) print F.
8) Stop.

Flowchart:-

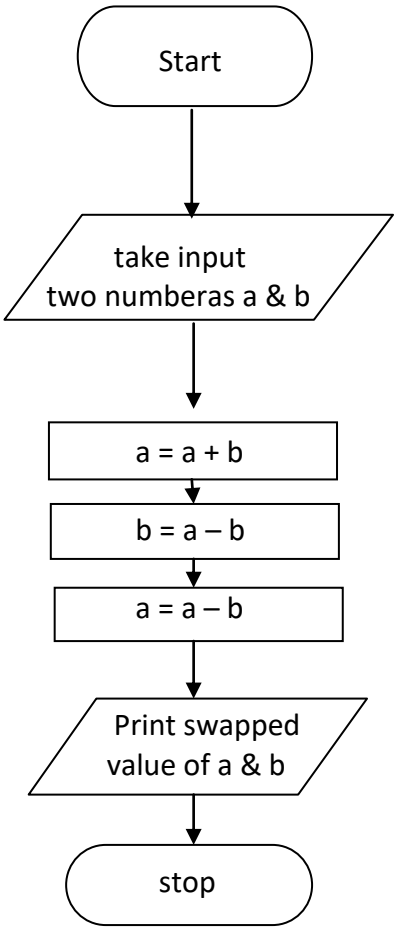


Q4]

Algorithm:-

1) Start.
2) Take 2 variable inputs as a & b.
3) a = a + b; (a will be {a+b})
4) b = a – b; (now a is {a+b} so the difference is b)
5) a = a – b;
6) print a ,b.
7) Stop.

Flowchart:-



Code:-

```
import java.util.Scanner;
class Question4{
    public static void main(String args[]){
        System.out.print("Enter first number: ");
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        System.out.print("Enter second number: ");
        int b = sc.nextInt();
        System.out.println("Numbers before swap are  First :- "+ a + ", Second :- "+ b );
        a = a + b;
        b = a - b;
        a = a - b;
        System.out.println("Numbers after swap are  First :- "+ a + ", Second :- "+ b );
    }
}
```

Q5].....

Answer:-

To check the given number 'If' function is used to compare value, as weather value is less or greater than 0.

Then output of ‘If’ is in Boolean value(It's True or False).

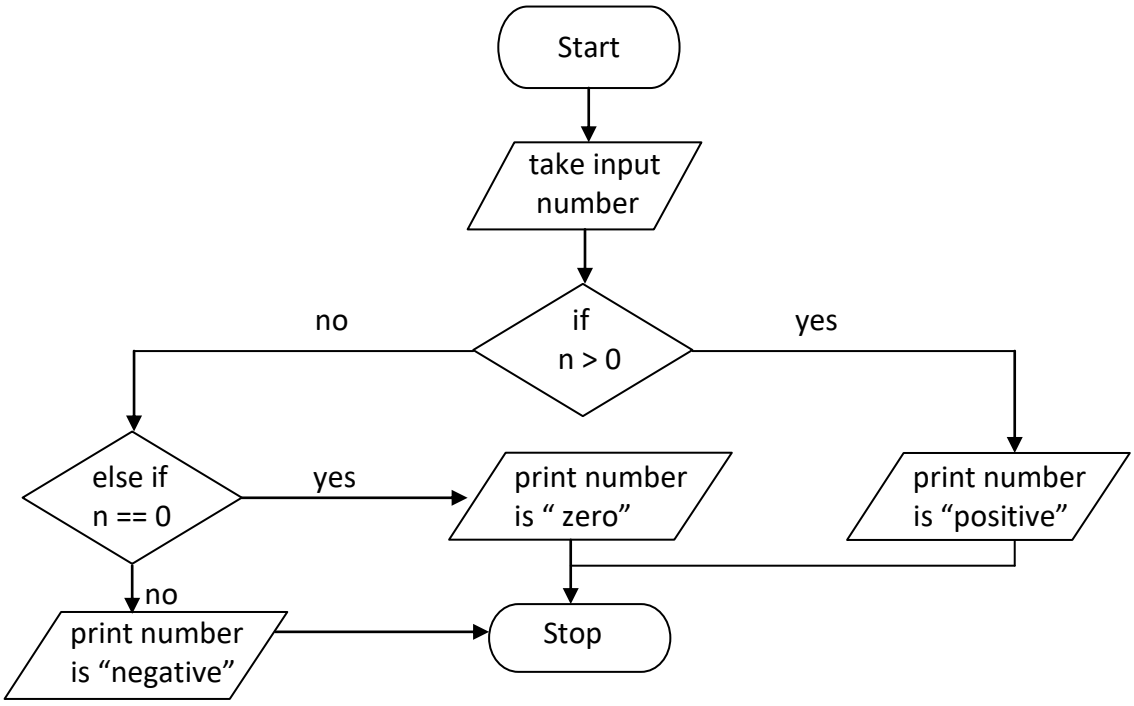
For Example:-

```
If (n<0){
System.out.print("Negative");
}
else if(n==0){
System.out.print("Zero");
}
else{
System.out.print("Positive")
}
```

Algorithm:-

1) Start.
2) Take the input.(check its integer value or not)
3) if(n>0)
   print value is positive.
   else if (n==0)
   print value is zero.
   else
   print value is negative.
4) Stop.

Flowchart:-

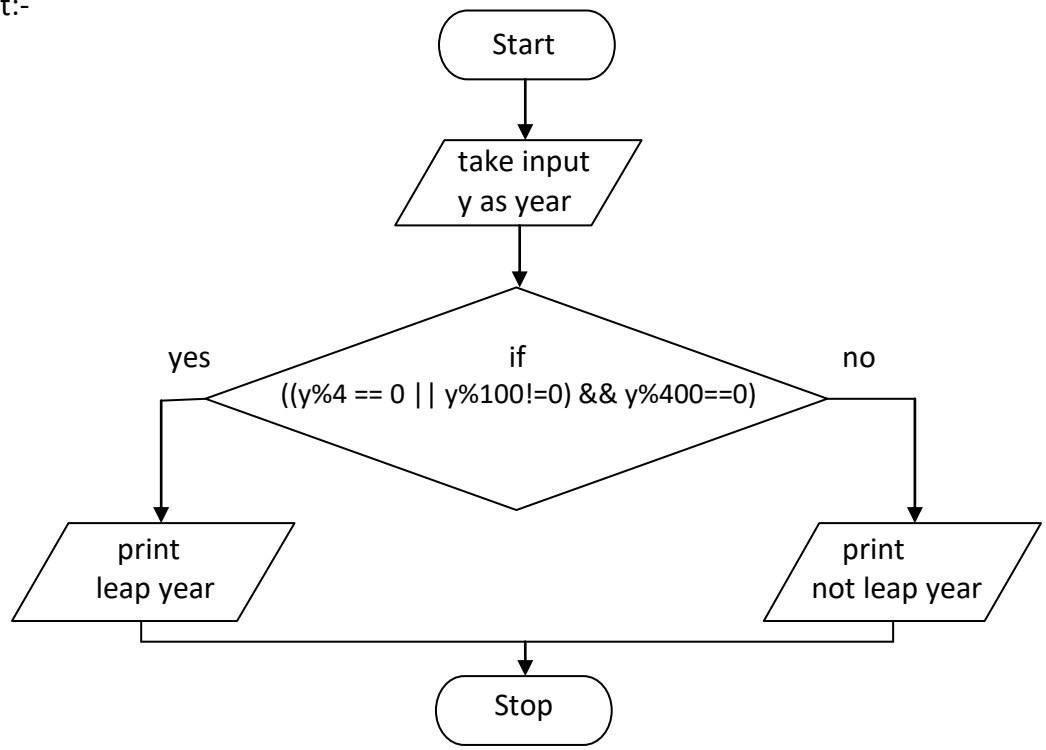


Q6]….

Algorithm:-

1) START.
2) Take input as year
3) Check if year is divisible by 4 but not 100 print "leap year"
4) Check if year is divisible by 400 print "leap year"
5) print "not leap year"
6) STOP.

Flowchart:-



Code:-

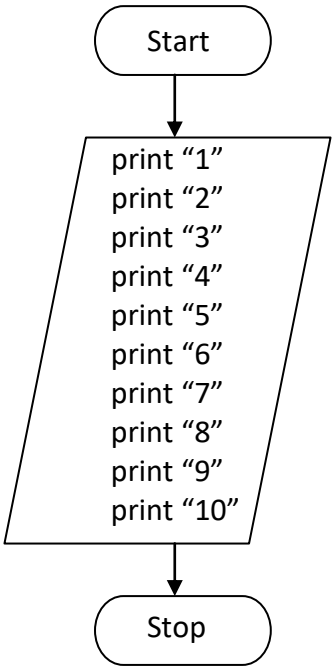
```
import java.util.Scanner;
class Question6{
        public static void main(String args[]){
                System.out.print("Enter any number: ");
                Scanner sc = new Scanner(System.in);
                int y = sc.nextInt();
                if((y%4==0 && y%100!=0) || y%400==0){
                        System.out.print("The year is Leap year");
                }
    else{
                        System.out.println("The year is not Leap year");
                }
        }
}
```

Q7].....

Algorithm:-

1) Start.
2) Print 1
   Print 2
   Print 3
   ....
   Print 10
3) Stop.

Flowchart:-



Code:-

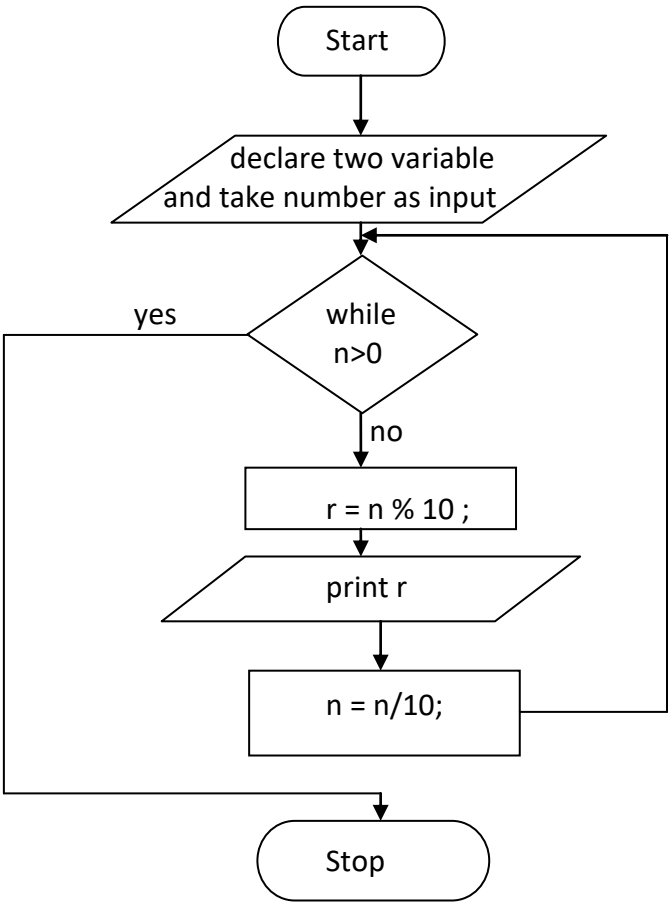
```
class Question7{
        public static void main(String args[]){
                System.out.println(“1”);
                System.out.println(“2”);
                System.out.println(“3”);
               System.out.println(“4”);
               System.out.println(“5”);
               System.out.println(“6”);
               System.out.println(“7”);
               System.out.println(“8”);
               System.out.println(“9”);
               System.out.println(“10”);
               }
        }
}
```

Q8].....

Algorithm:-

1) Start.
2) Take input number.
3) Declare two variable one as input and other as reminder.
4) while(n>0)
   reminder = n%10;
   print reminder.
   n = n/10;
5) stop.

Flowchart:-



Code:-

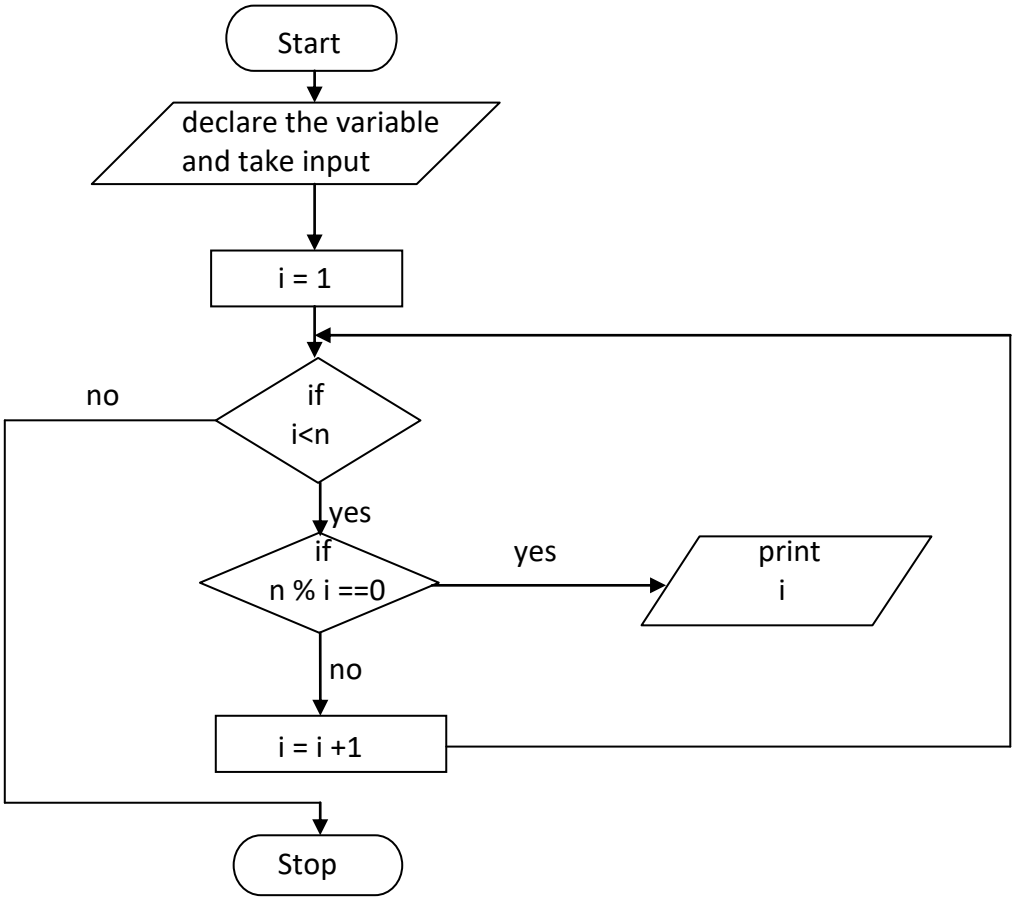
```
import java.util.Scanner;
class Question8{
        public static void main(String args[]){
                System.out.print("Enter any number: ");
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                int r = 0;
                while(n>0){
                        r = n%10;
                        System.out.println(r);
                        n = n/10;
                        }
                }
}
```

Q9].....

Algorithm:-

1) Start.
2) Declare variable for input .
3) Using for loop
   Initialize at i = 1.
   Put condition till given input number. (i<n)
4) Check if n % i == 0.
   if true print i. (if false continue)
   i++; (for condition not true go to step 3)
5) Stop.

Flowchart:-



Code:-

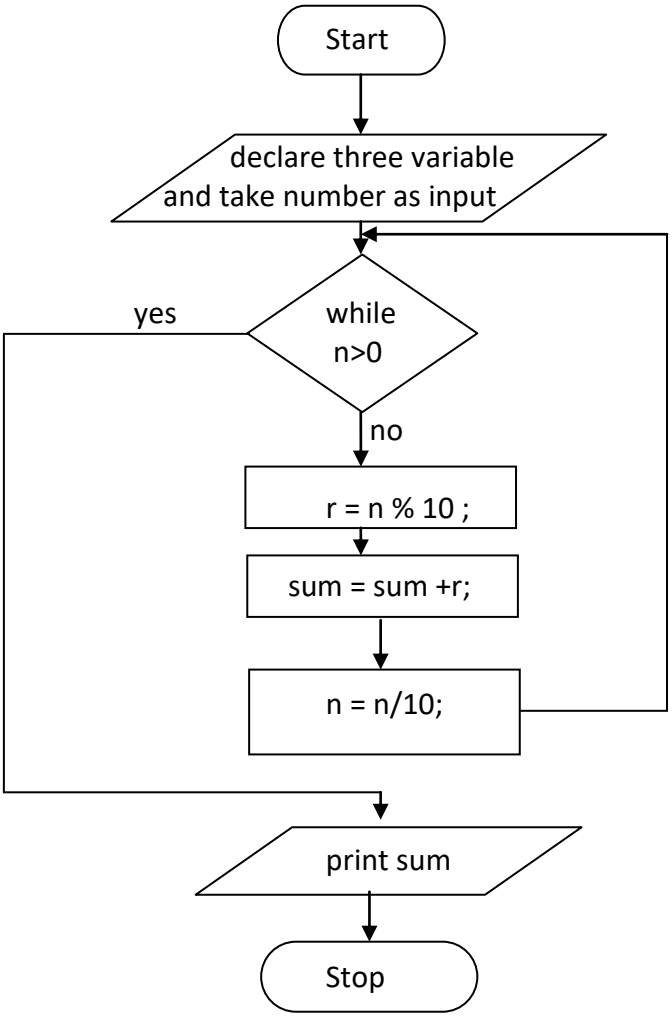
```
import java.util.Scanner;
class Question9{
        public static void main(String args[]){
                System.out.print("Enter any number: ");
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                System.out.print("The factors of"  + n + " are : ");
                for( int i = 1; i <n ; i++ ){
                        if(n%i == 0){
                        System.out.print(i + " ");
                        }
                }
        }
}
```

Q10]…..

Algorithm:-

1) Start.
2) Take input number.
3) Declare three variable one as input and other as reminder and sum.
4) while(n>0)
   reminder = n%10;
   sum = sum + reminder.
   n = n/10;
5) print sum.
6) stop.

Flowchart:-



Code:

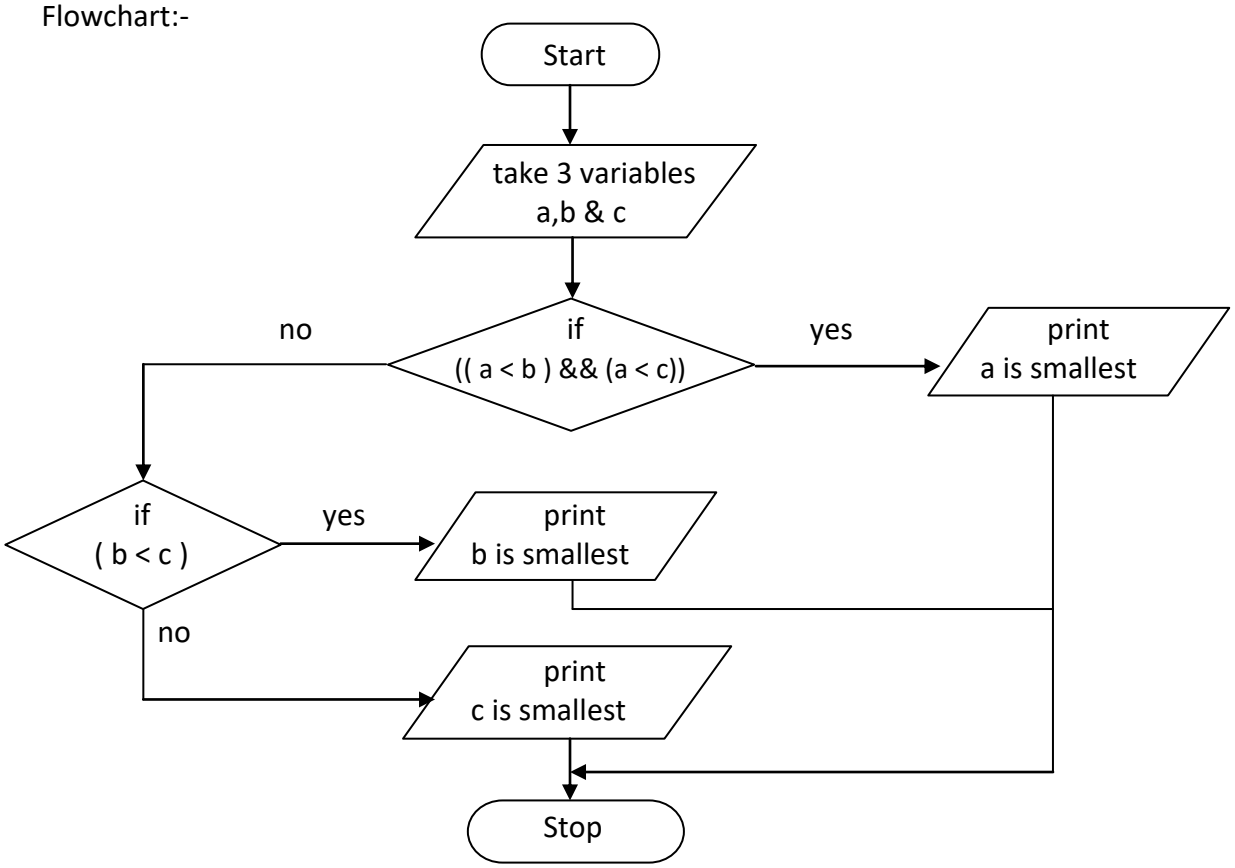
```
import java.util.Scanner;
class Question10{
        public static void main(String args[]){
                System.out.print("Enter any number: ");
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                int r = 0;
                int sum = 0;
                while(n>0){
                        r = n%10;
                        sum = sum +r;
                        n = n/10;
                        }
                System.out.println(sum);
                }
}
```

Q11]…..

Algorithm:

1) Start.
2) Declare and take three inputs as a, b, c.
3) Check if a is less than b and a is less than c.
4) If above condition is true,
   a is smallest. (go to step 7 else go to step 5.)
5) Check if b is less than c.
6) If above condition is true, b is the smallest, else c is the smallest.
7) Stop.

Flowchart:-



Code:

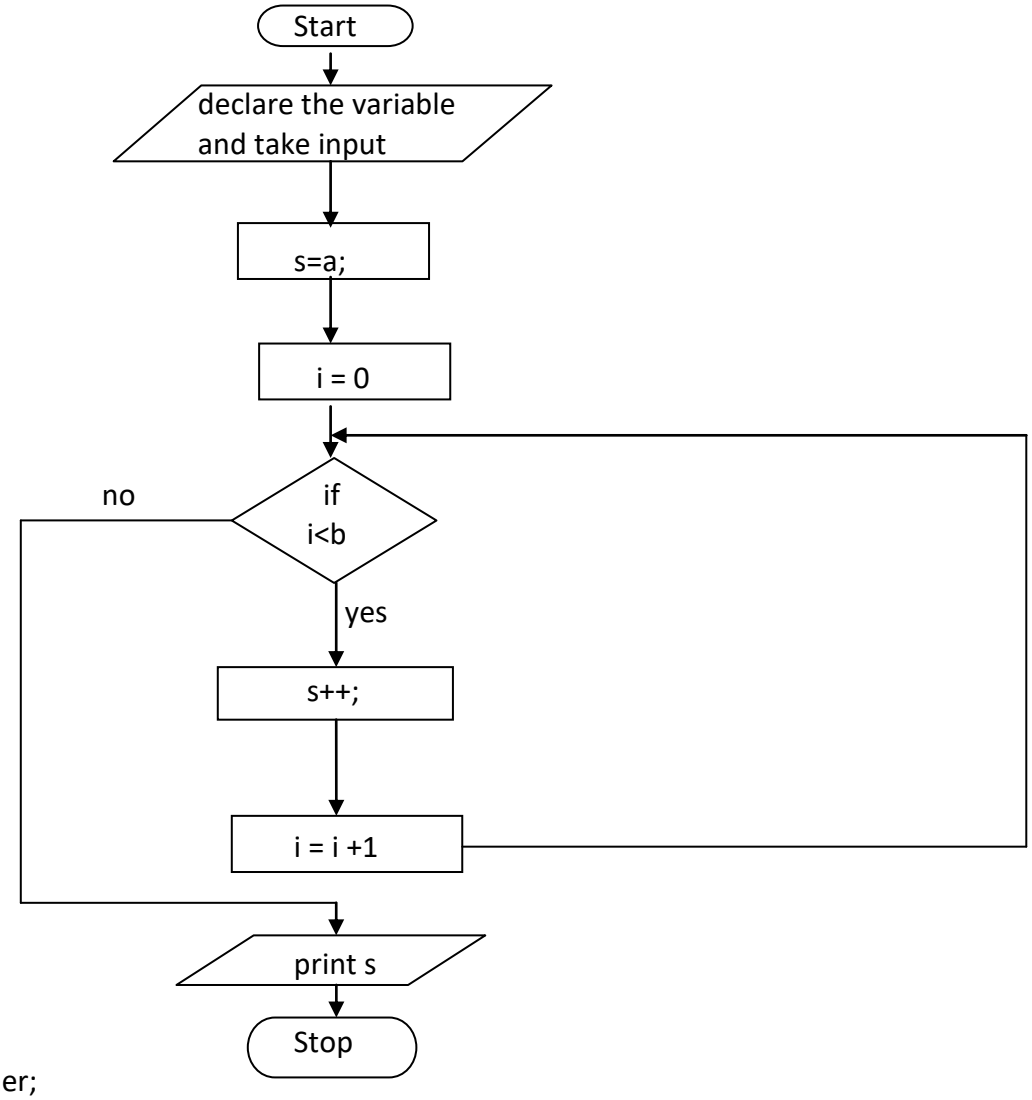
```
import java.util.Scanner;
class Question11{
        public static void main(String args[]){
                System.out.print(“Enter any 3 numbers respectively: ”);
                Scanner sc = new Scanner(System.in);
                int a = sc.nextInt();
                int b = sc.nextInt();
                int c = sc.nextInt();
                if((a < b) && (a<c)){
                        System.out.print(a+“ is smallest number.”);
                }
                else if( b < c ){
                        System.out.print(b+“ is smallest number.”);
                }
                else{
                        System.out.print(c+“ is smallest number.”);
                }
        }
}
```

Q12].....

Algorithm:-

1) Start.
2) Declare 3 variable and take 2 inputs as a and b as input .
3) s = a.
4) Using for loop
   Initialize at i = 0.
   Put condition till given input number. (i<b)
5) s++; (for condition not true go to step 3)
6) print s.
7) Stop.

Flowchart:-



Code:-

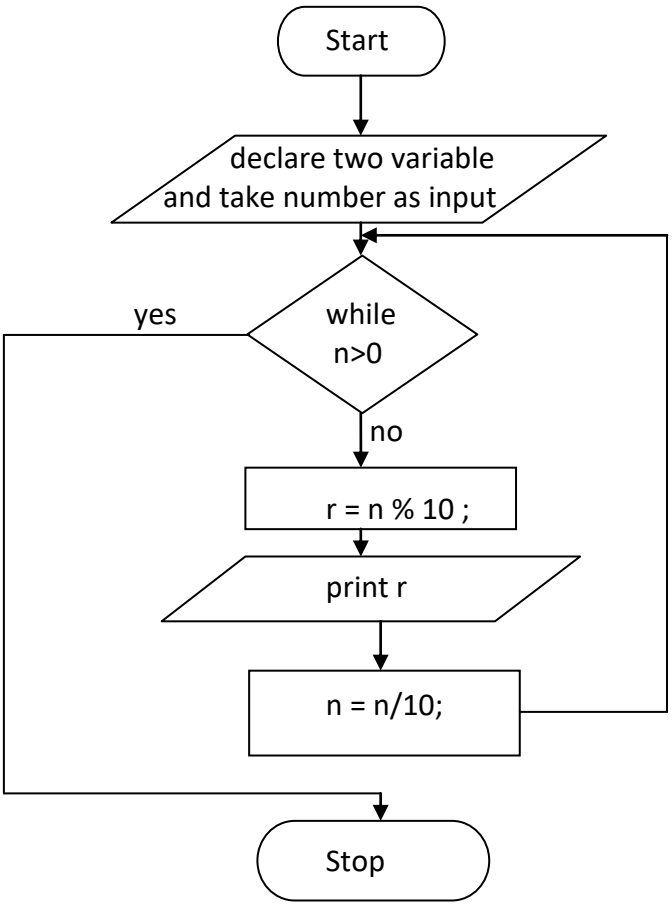
```
import java.util.Scanner;
class Question12{
        public static void main(String args[]){
                System.out.print("Enter any two number respectively: ");
                Scanner sc = new Scanner(System.in);
                int a = sc.nextInt();
                int b = sc.nextInt();
                s = a;
                for( int i = 0; i <b ; i++ ){
                        s++;
                        }
                }
                System.out.print( “the sum is: ” + s );
        }
}
```

Q13]……

Algorithm:-

1) Start.
2) Take input number.
3) Declare two variable one as input and other as reminder.
4) while(n>0)
   reminder = n%10;
   print reminder. (without space continuesly)
   n = n/10;
5) stop.

Flowchart:-



Code:-

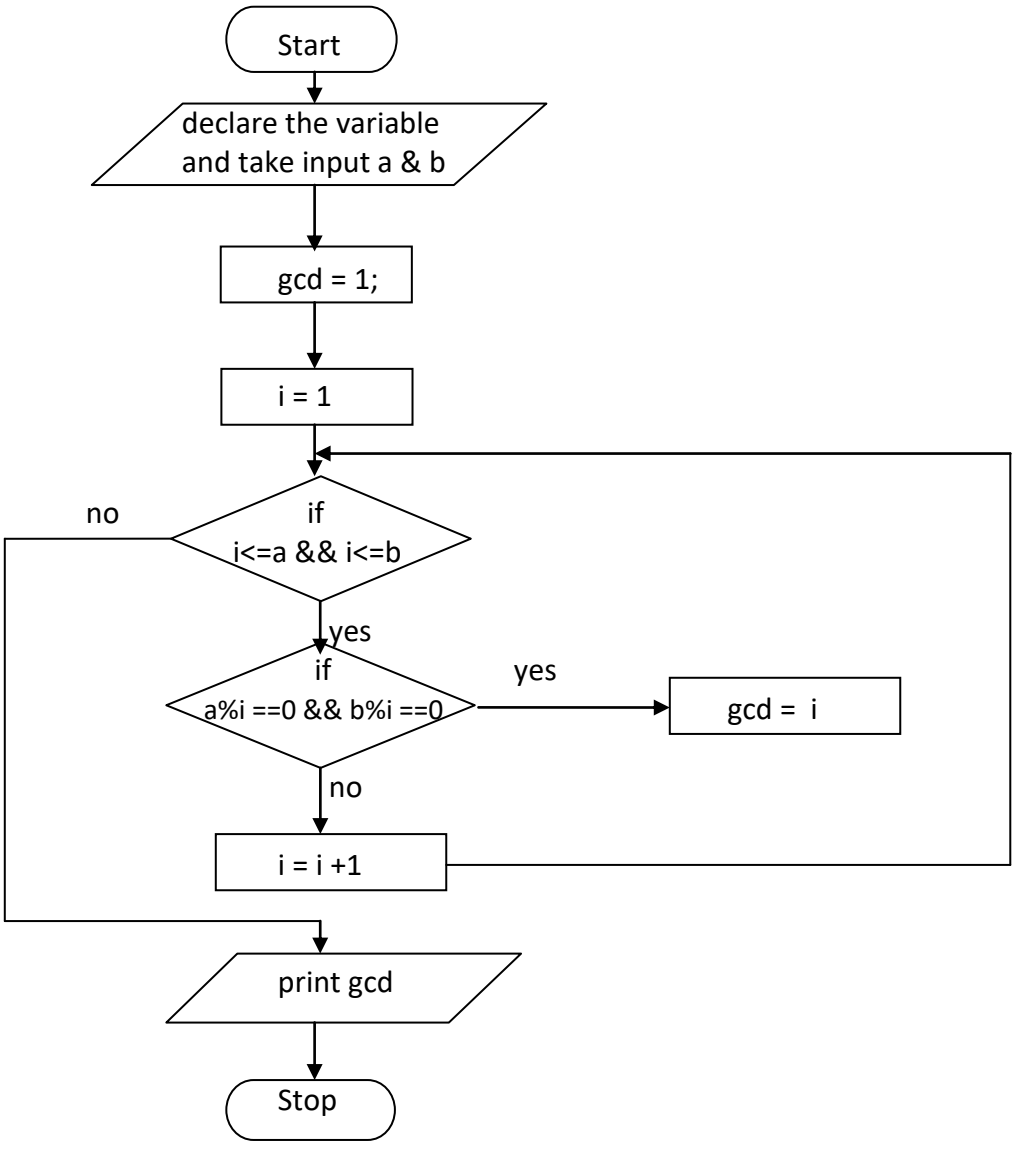
```
import java.util.Scanner;
class Question13{
        public static void main(String args[]){
                System.out.print("Enter any number: ");
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                int r = 0;
                System.out.print(“The reversed is: ”);
                while(n>0){
                        r = n%10;
                        System.out.print(r);
                        n = n/10;
                        }
                }
}
```

Q14].....

Algorithm:

1) Start.
2) declare 3 variables and take a & b as inputs respectively.
3) gcd = 1.
4) Using for loop
   Initialize at i = 1.
5) Put condition till given input number
   and using and till it reaches one smallest number.(i<=a && i<=b) (if true continue or go to step 8)
6) If(a % i==0 && b % i == 0)
   gcd = i;
7) Increament the i and go to step 5.
8) print gcd.
9) Stop.

Flowchart:-



P.T.O.

Code:

```
import java.util.Scanner;
class Question14{
	public static void main(String args[]){
		System.out.print("Enter any two number respectively: ");
		Scanner sc = new Scanner(System.in);
		int a = sc.nextInt();
		int b = sc.nextInt();
		gcd = 1;
		for( int i = 1; i<=a && i <=b ; i++ ){
			if(a%i == 0 && b%i==0){
				gcd = i;
				}
			}
		}
		System.out.print( “The GCD is: ” + gcd );
	}
}
```

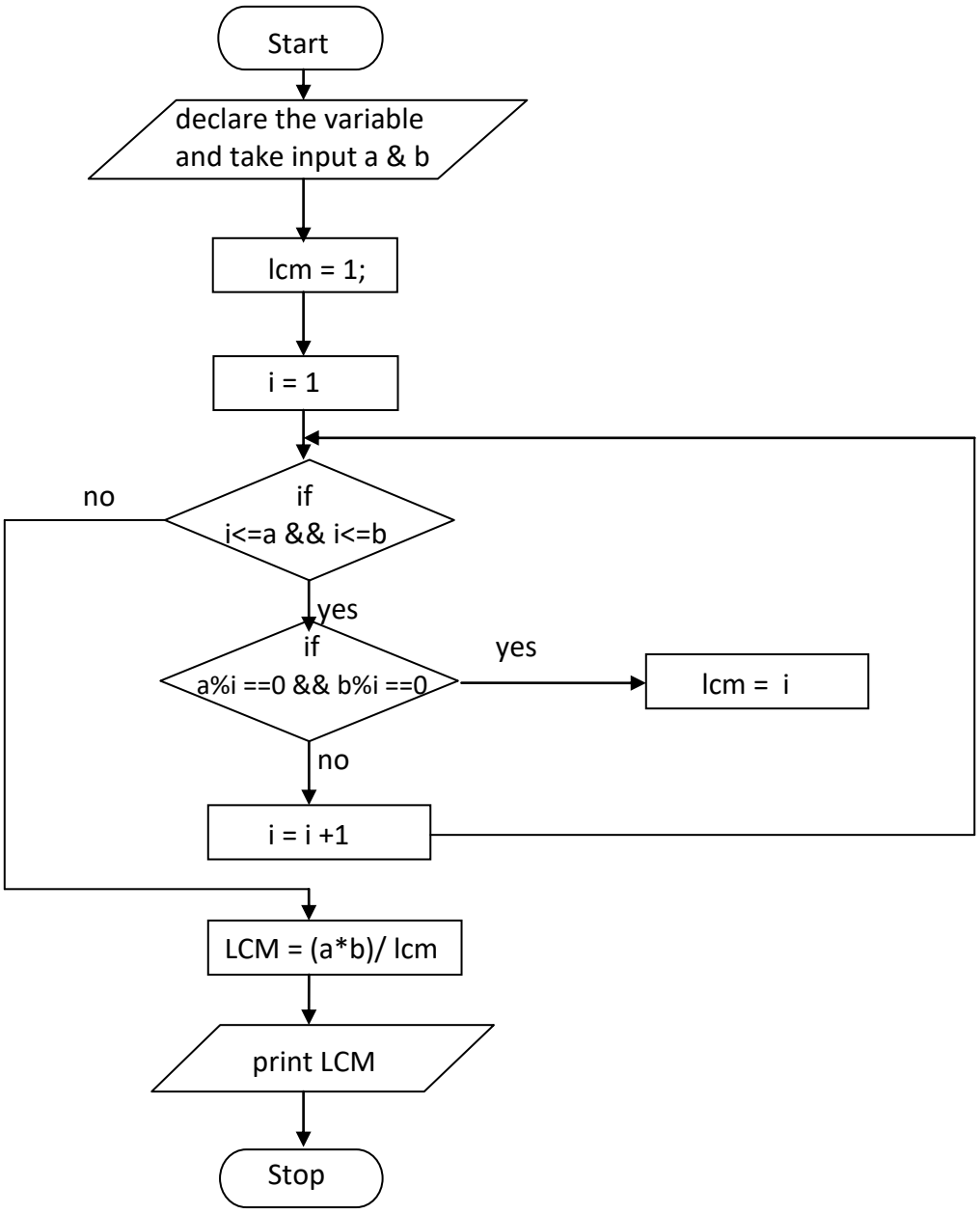
Q15].....

from the previous question we know gcd and lcm = (a * b)/gcd. Hence ..

Algorithm:

1) Start.
2) declare 3 variables and take a & b as inputs respectively.
3) gcd = 1. (here to understand variable gcd is used instade of lcm)
4) Using for loop
   Initialize at i = 1.
5) Put condition till given input number
   and using and till it reaches one smallest number.(i<=a && i<=b) (if true continue or go to step 8)
6) If(a % i==0 && b % i == 0)
   gcd = i;
7) Increament the i and go to step 5.
8) as LCM = (a * b)/gcd;
9) print LCM.
10) Stop.

Flowchart:-



Code:

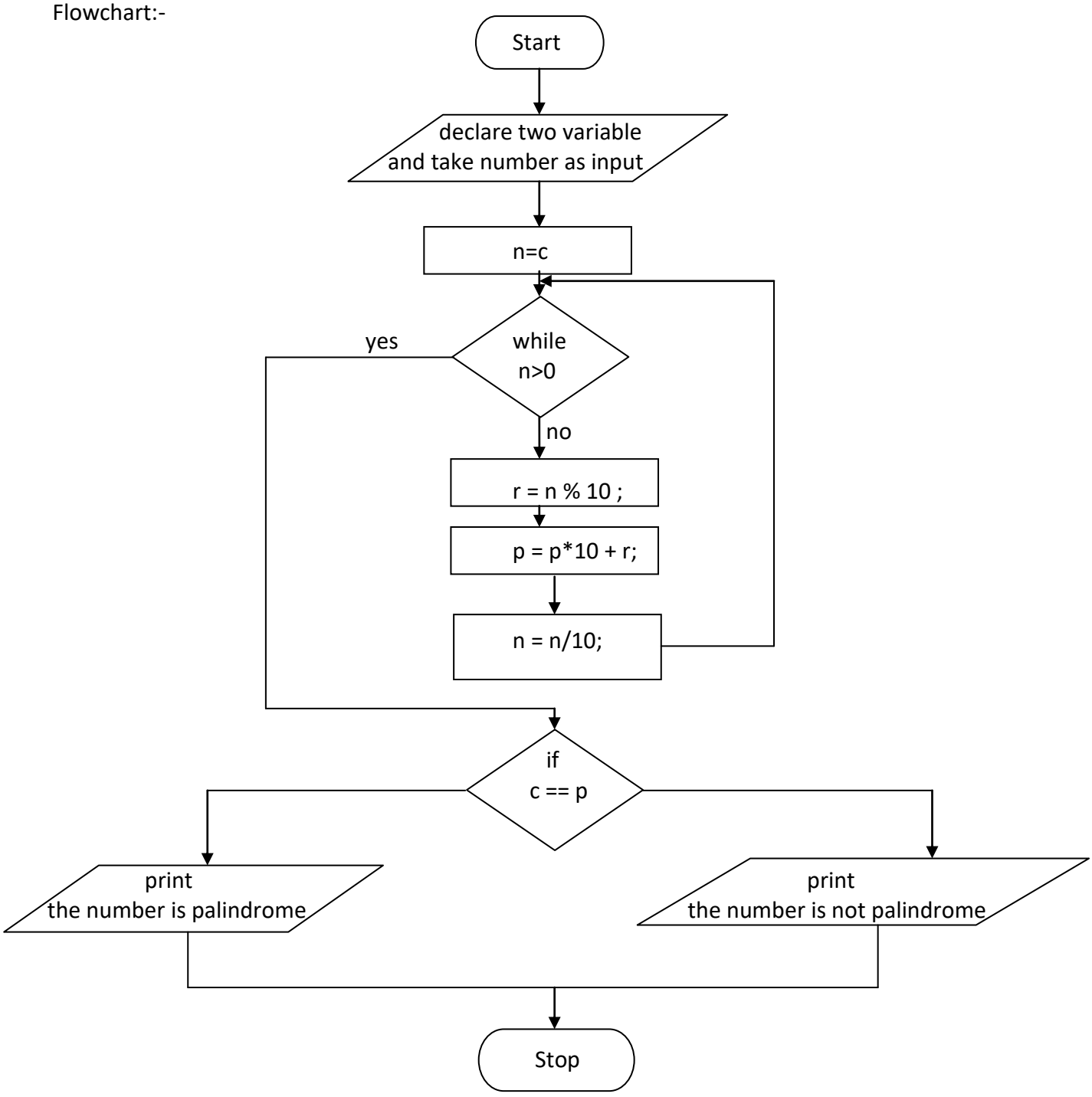
```
import java.util.Scanner;
class Question15{
	public static void main(String args[]){
		System.out.print("Enter any two number respectively: ");
		Scanner sc = new Scanner(System.in);
		int a = sc.nextInt();
		int b = sc.nextInt();
		lcm = 1;
		for( int i = 1; i<=a && i <=b ; i++ ){
			if(a%i == 0 && b%i==0){
				lcm = i;
				}
			}
		lcm = (a * b) / lcm;
		System.out.print( “The LCM is: ” + lcm );
	}
}
```

Q17].....

Algorithm:-

1) Start.
2) Take input number.
3) Declare variable one as input and other as reminder and compare.
4) n = c;
5) while(n>0)
   reminder = n%10;
   p = p*10 + reminder;
   n = n/10;
6) if(c == p)
   print number is palindrome .
7) else print number is not palindrome.
8) stop.

Flowchart:-



P.T.O.

Code:-

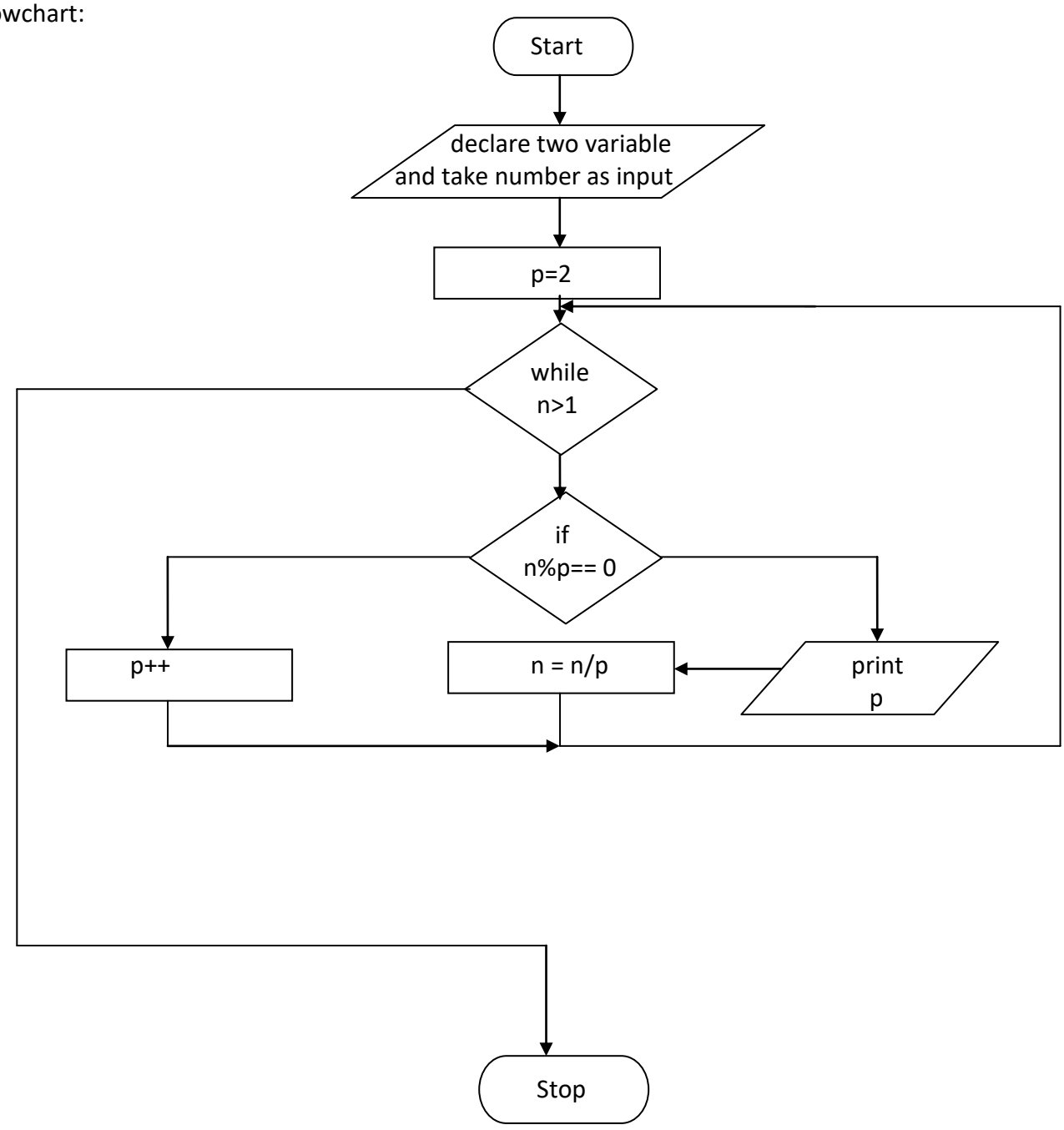
```
import java.util.Scanner;
class Question17{
	public static void main(String args[]){
		System.out.print("Enter any number: ");
		Scanner sc = new Scanner(System.in);
		int n = sc.nextInt();
		int p,c = 0;
		int r = 0;
		while(n>0){
			r = n%10;
			c= (c*10) + r;
			n = n/10;
			}
		if(c == p){
		System.out.println(“The number is palindrome”)
		}
		else(
		System.out.println(“The number is not palindrome”)
		)
		}
}
```

Q18]….

Algorithm:

1) Start.
2) declare variables and take input as n.
3) p = 2 (as smallest prime number is 2)
4) using while loop (condition n>1)
5) if(n%p==0) (is false go to step 7)
   print p.
6) n = n/p. (go to step 4)
7) else p++.
8) Stop.

Flowchart:



P.T.O.

Code:

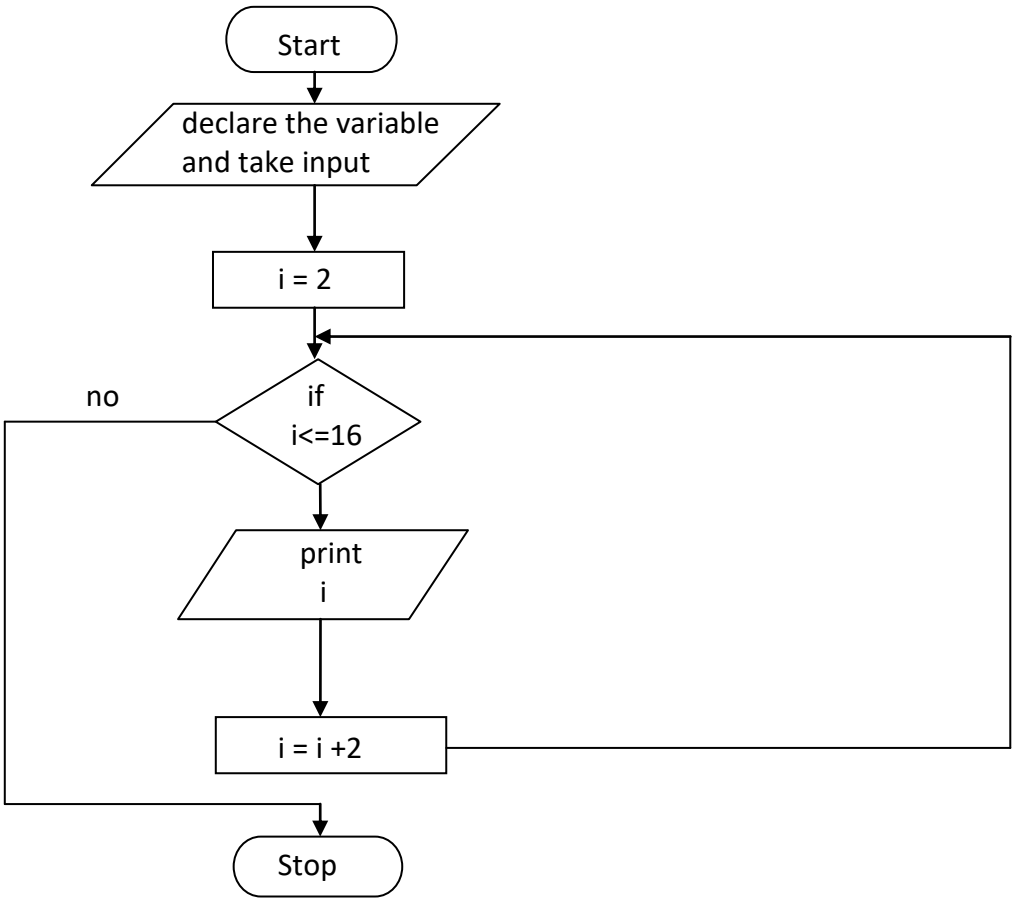
```
import java.util.Scanner;
class Question18{
public static void main(String args[]){
      System.out.println(“Enter any number: ”);
      Scanner sc = new Scanner(System.in);
      int n = sc.nextInt();
      int p = 2;
      while (n > 1) {
          if (n % p == 0) {
              System.out.println(p);
              n = n/p;
           }
           else{
              p++;
           }
       }
   }
}
```

Q19]….

Algorithm:-

1) Start.
2) Using for loop
   Initialize at i = 2.
   Put condition till given input number. (i<=16)
3) print i.
   i = i+2; (for condition not true go to step 3)
4) Stop.

Flowchart:-



Code:-

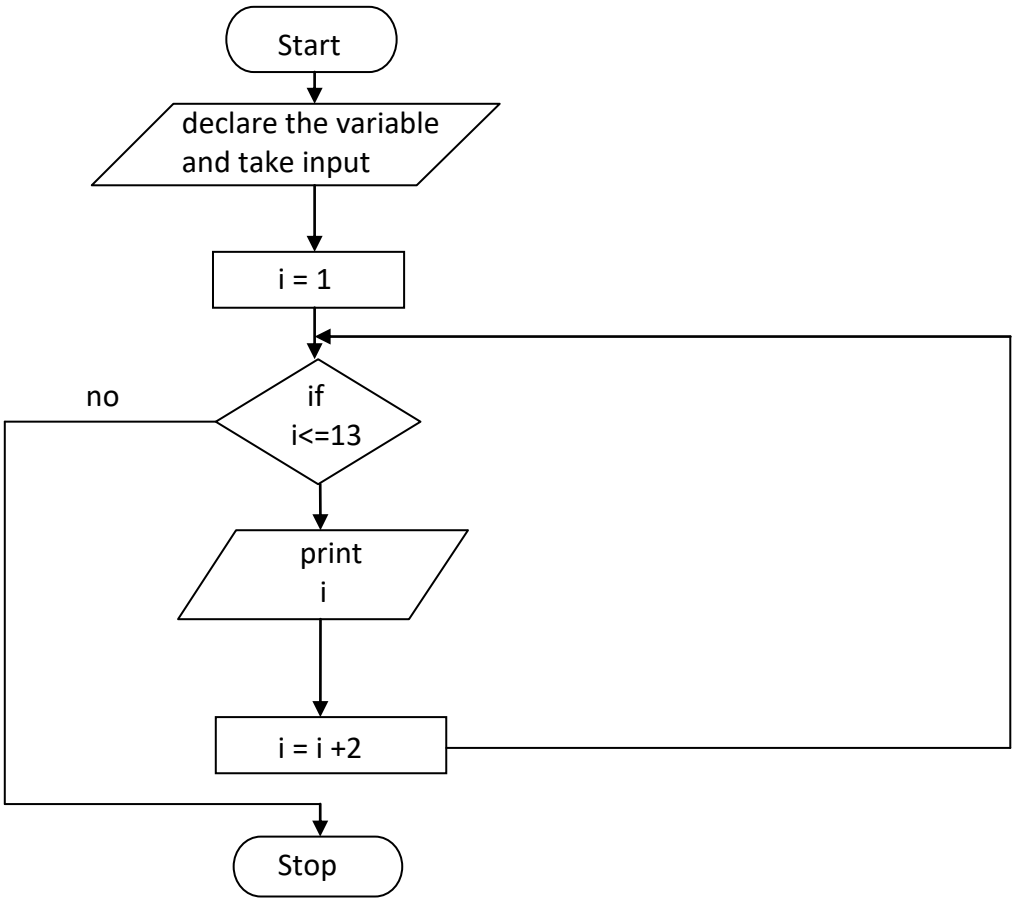
```
class Question19{
        public static void main(String args[]){
                for( int i = 2; i <=16 ;i= i+2 ){
                        System.out.print(i + " ");
                }
        }
}
```

Q20]….

Algorithm:-

1) Start.
2) Using for loop
   Initialize at i = 1.
   Put condition till given input number. (i<=13)
3) print i.
   i = i+2; (for condition not true go to step 3)
4) Stop.

Flowchart:-



Code:-

```
class Question20{
        public static void main(String args[]){
                for( int i = ; i <=13 ;i= i+2 ){
                        System.out.print(i + " ");
                }
        }
}
```