**CSE ASSIGNMENT NO :2**

**PROBLEMS ON CONTROL STATEMENTS**

**NUMBER SERIES**

1. **Write a program to print series 0 2 6 12 20 30 42…N**

**CODE:**

n=int(input("enter the range of numbers:"))

i=1

while i<=n:

print((i\*i)-i,end="")

i+=1

**OUTPUT:**

**enter the range of numbers:8**

**0 2 6 12 20 30 42 56**

1. **Write a program to print series 0,2,8,14,24,34…N**

**CODE:**

**n=int(input("enter the range of numbers(Limit):"))**

**i=1**

**pr=0**

**while i<=n:**

**if(i%2==0):**

**pr=pow(i,2)-2**

**print(pr,end="")**

**else:**

**pr=pow(i,2)-1**

**print(pr,end="")**

**OUTPUT:**

**Enter the range of numbers(Limit):8**

**0 2 8 14 24 34 42**

**3)Write a program to print arithmetic series 1 4 7 10…**

**CODE:**

**n=int(input("enter n value:"))**

**print("first series:")**

**for i in range (1,41,3):**

**print(i,end=' ')**

**OUTPUT:**

**enter n value:7**

**first series:**

**1 4 7 10 13 16 19 22 25 28 31 34 37 40**

**4)Write a program to find the sum of the series 1^3+2^3+3^3+4^3…+n^3**

**CODE:**

**n=int(input("enter n value:"))**

**total=0**

**total=(n\*(n+1)\*(2\*n+1))/6**

**for i in range(1,n+1):**

**if(i!=n):**

**print("%d^3+"%i,end= " ")**

**else:**

**print("{0}^3={1}".format(i,total))**

**OUTPUT:**

**enter n value:6**

**1^3+ 2^3+ 3^3+ 4^3+ 5^3+ 6^3=91.0**

**5)Write a program to find the sumof series 2+4+6+8+…+n**

**CODE:**

**n=int(input("enter n value:"))**

**sum=0**

**i=0**

**while i<=n:**

**sum+=i**

**i+=2**

**print("the sum of the series:",sum)**

**OUTPUT:**

**enter n value:6**

**the sum of the series: 12**

**6)Write a program to find the sum of series 1+11+111+1111….+n**

**CODE:**

**n=int(input("enter value of n:"))**

**sum=0**

**j=1**

**for i in range (1,n+1):**

**sum=sum+j**

**j=(j\*10)+1**

**print("the sum of the series:",sum)**

**OUTPUT:**

**enter value of n:7**

**the sum of the series: 1234567**

**7)Write a program to find the sum of series1/2!+2/3!+3/5!+4/6!+…+n**

**CODE:**

**n=int(input("enter n terms:"))**

**f=1**

**s=0**

**for i in range(1,n+1):**

**f=f\*(i+1)**

**s=s+(i/f)**

**print("sum of the series:",s)**

**OUTPUT:**

**enter n terms:5**

**sum of the series: 0.998611111111111**

**8)Write a program to print Fibonacci series.**

**CODE:**

f1 = int(input("Enter first term:"))

f2 = int(input("Enter Second term:"))

n = int(input("Enter no of terms:"))

print(f1)

print(f2)

i = 0

while i<n-2:

f3 = f1+f2

print(f3)

f1 = f2

f2 = f3

i = i+1

**OUTPUT:**

Enter first term:0

Enter Second term:1

Enter no of terms:8

0

1

1

2

3

5

8

13

**9)Write a program to find the sum of series 1+3+5+7+…+n**

**OUTPUT:**

**n=int(input("Enter the maximum value:")) oddtotal=0**

**number=1 while number<=n: if(number%2!=0):**

**print("{0}".format(number)) oddtotal=oddtotal+number**

**number=number+1 print("The sum of odd numbers from 1 to {0}={1}".format(n,oddtotal))**

**OUTPUT:**

**Enter the maximum value:20**

**1**

**3**

**5**

**7**

**9**

**11**

**13**

**15**

**17**

**19**

**The sum of odd numbers from 1 to 20=100**

# 10)Write a program to find the sum of the series 1+2+3+4+..+n

# OUTPUT:

**n=int(input("Enter the maximum value:"))**

**total=0**

**value=1**

**while value<=n:**

**total=total+value**

**value=value+1**

**print("The sum from 1to{0}={1}".format(n,total))**

**OUTPUT:**

**Enter the maximum value:12**

**The sum from 1to12=78**

**11)Write a program to fin the sum of series 1!+2!+3!+…+n**

**CODE:**

**n = int(input("Enter n value:"))**

**fact = 1**

**if(n==0):**

**fact = 1**

**sum = 0**

**for i in range(1,n+1):**

**fact = fact\*i**

**sum = sum + fact**

**print(sum)**

**OUTPUT:**

**Enter n value:6**

**873**

**12)Write a program to find the sum of series 9+99+999+….N**

**CODE:**

**n = int(input("Enter the range of number:"))**

**sum = 0**

**num = 9**

**for i in range(1,n+1):**

**sum = sum + num**

**num = (num\*10)+9**

**print("The sum of the series=", sum)**

**OUTPUT:**

**Enter the range of number:3**

**The sum of the series= 1107**

**NUMBER PATTERNS:**

**1)Python program to using for loop**

**CODE:**

**n=5**

**for num in range(n+1):**

**for i in range (num ):**

**print(num,end= " ")**

**print("\r")**

**OUTPUT:**

**1**

**2 2**

**3 3 3**

**4 4 4 4**

**5 5 5 5 5**

**2)To print half pyramid pattern**

**CODE:**

**rows=int(input("enter value of n:"))**

**for i in range(1,rows+1):**

**for j in range(1,i+1):**

**print(j,end=" ")**

**print("")**

**OUTPUT:**

**enter value of n:5**

**1**

**1 2**

**1 2 3**

**1 2 3 4**

**1 2 3 4 5**

**3)Inverted pyramid pattern**

**CODE:**

**rows=int(input("enter value of n:"))**

**k=0**

**for i in range(rows,0,-1):**

**k+=1**

**for j in range(1,i+1):**

**print(k,end=" ")**

**print()**

**OUTPUT:** **enter value of n:5**

**1 1 1 1 1**

**2 2 2 2**

**3 3 3**

**4 4**

**5**

**4)Inverted pyramid pattern with same digit**

**CODE:**

**rows = int(input("Enter no of rows:"))**

**n = rows**

**for i in range(rows,0,-1):**

**for j in range(0,i):**

**print(n,end = " ")**

**print()**

**OUTPUT:**

**5 5 5 5 5**

**5 5 5 5**

**5 5 5**

**5 5**

**5**

**5)Alternate numbers pattern using while loop**

**CODE:**

**n=5**

**x=1**

**for i in range(1,6):**

**for j in range(i): print(x,end=" ")**

**x+=2**

**print()**

**OUTPUT:**

**1**

**3 3**

**5 5 5**

**7 7 7 7**

**9 9 9 9 9**

**6)Reverse pyramid numbers**

**CODE:**

**n = int(input("Enter number of rows:"))**

**for i in range(1,n+1):**

**for j in range(i,0,-1):**

**a=j**

**print(a,end=" ")**

**a = j+1**

**print()**

**OUTPUT:**

**Enter number of rows:5**

**1**

**2 1**

**3 2 1**

**4 3 2 1**

**5 4 3 2 1**

**PYRAMID PATTERNS:**

**1)Python program to print half pyramid pattern**

**CODE:**

**for i in range(0,5):**

**print()**

**for j in range(0, i+1):**

**print("\* ",end="")**

**OUTPUT:**

**\***

**\* \***

**\* \* \***

**\* \* \* \***

**\* \* \* \* \***

**2)Downward half pyramid pattern of star**

**CODE:**

**rows=int(input("enter the no of rows:"))**

**for i in range(rows+1,0,-1):**

**for j in range(0,i-1):**

**print("\*",end=" ")**

**print(" ")**

**OUTPUT:**

**enter the no of rows:5**

**\* \* \* \* \***

**\* \* \* \***

**\* \* \***

**\* \***

**\***

**3)Downward full pyramid pattern of star**

**CODE:**

**rows=int(input("enter the no of rows:"))**

**k=2\*rows-2**

**for i in range (rows,-1,-1):**

**for j in range(k,0,-1):**

**print(end=" ")**

**k=k+1**

**for j in range (0,i+1):**

**print("\*",end=" ")**

**print(" ")**

**OUTPUT:** **enter the no of rows:5**

**\* \* \* \* \* \***

**\* \* \* \* \***

**\* \* \* \***

**\* \* \***

**\* \***

**\***

**4)Right down mirror star pattern**

**CODE:**

**rows=int(input("enter no of rows"))**

**i=rows**

**while i>=1:**

**j=rows**

**while j>i:**

**#display space**

**print(' ',end=' ')**

**j-=1**

**k=1**

**while k<=i:**

**print("\*",end="")**

**k+=1**

**print()**

**i-=1**

**OUTPUT:**

**enter no of rows5**

**\*\*\*\*\***

**\*\*\*\***

**\*\*\***

**\*\***

**\***

**-5)Equilateral triangle pattern of star**

**CODE:**

**num\_rows = int(input("Enter the number of rows"));**

**for i in range(0, num\_rows):**

**for j in range(0, num\_rows-i-1):**

**print(end=" ")**

**for j in range(0, i+1):**

**print("\*", end=" ") print()**

**OUTPUT:**

**Enter the number of rows4**

**\***

**\*\***

**\*\*\***

**\*\*\*\***

**6)Right start pattern of star**

**CODE:**

**n = int(input("Enter range value:"))**

**for i in range(n):**

**for j in range(i+1):**

**print('\*',end=" ")**

**print()**

**for i in range(n):**

**for j in range(n-i-1):**

**print('\*',end=" ")**

**print()**

**OUTPUT:**

**Enter range value:5**

**\***

**\* \***

**\* \* \***

**\* \* \* \***

**\* \* \* \* \***

**\* \* \* \***

**\* \* \***

**\* \***

**\***

**PROBLEMS:**

**1)CONVERT DECIMAL**

**CODE:**

**#program to convert decimal to binary**

**n=int(input("Enter a number: "))**

**a=[]**

**while(n>0):**

**d=n%2**

**a.append(d)**

**n=n//2**

**a.reverse()**

**print("Binary Equivalent is: ")**

**for i in a:**

**print(i,end=" ")**

**OUTPUT:**

**Enter a number: 15**

**Binary Equivalent is:**

**1 1 1 1**

**2)CONVERT BINARY TO DECIMAL**

**CODE:**

**binary\_num = int(input("Enter the Binary Number: "))**

**dec\_num = 0**

**m = 1**

**length = len(str(binary\_num))**

**for k in range(length):**

**reminder = binary\_num % 10 dec\_num = dec\_num + (reminder \* m)**

**m = m \* 2**

**binary\_num = int(binary\_num/10)**

**print("Equivalent Decimal Value = ", dec\_num)**

**OUTPUT:**

**Enter the Binary Number:1111**

**Equivalent value=15**

**3)Check the given no is Armstrong or not**

**CODE:**

**n=int(input("enter the number:"))**

**num=n**

**sum=0**

**while(n>0):**

**rem=n%10**

**sum=sum+(rem\*\*3)**

**n=n//10**

**if(sum==num):**

**print("armstrong no")**

**else:**

**print("not a armstrong no")**

**OUTPUT:**

**enter the number:153**

**armstrong no**

**4)Reversing a no**

**CODE:**

**n = int(input("Enter a number:"))**

**sum = 0**

**while n>0:**

**rem = n%10**

**sum = (sum\*10)+rem**

**n = n//10**

**print(sum)**

**OUTPUT:**

**Enter a number: 865**

**568**

**5)Print all prime nos from 1 -50**

**CODE:**

**n=1**

**while(n<=50):**

**count=0**

**i=2**

**while(i<=n//2):**

**if(n%i==0):**

**count=count+1**

**break**

**i=i+1**

**if(count==0 and n!=1):**

**print("%d"%n,end=" ")**

**n=n+1**

**OUTPUT:**

**2 3 5 7 11 13 17 19 23 29 31 37 41 43 47**

**6)Print all the leap year from 1900-2000**

**CODE:**

**startYear = int(input("Enter start year:"))**

**endYear = int(input("Enter end year:"))**

**for year in range(startYear,endYear):**

**if(year%4==0) and (year%100!=0) or (year%400==0):**

**print(year,end=" ")**

**OUTPUT:**

**Enter start year:1900**

**Enter end year:2001**

**1904 1908 1912 1916 1920 1924 1928 1932 1936 1940 1944 1948 1952 1956 1960 1964 1968 1972 1976 1980 1984 1988 1992 1996 2000**