Exam Seat No. _____

THAKUR COLLEGE OF SCIENCE & COMMERCE

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Computer Journal

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SEMESTER 2. UID No. _____

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who has worked for the year 2020 in the Computer Laboratory.

Teacher In-Charge

Head of Department

Date : _____

Examiner

No.
1.
1-B
2.
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8.

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ISO

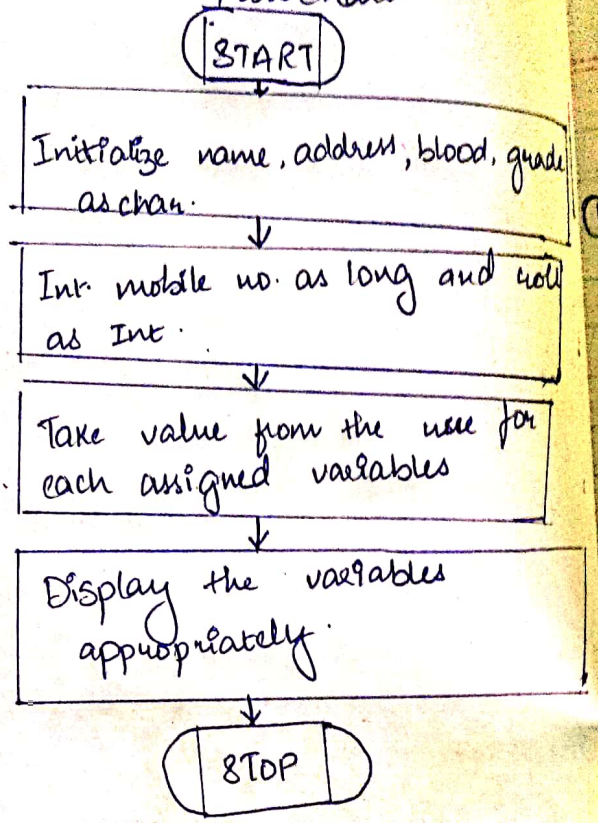
Output:

Name: Peman Kumar
Address: Dhaiwi 218
Blood Group: A
Grade: B
Mobile No: 213641892
Roll No: 1702

.
.
.

YOUR INFO
Peman Kumar = name
Mobile: 213641892
Roll: 1702
Address: Dhaiwi 218
Blood Group: A
Grades: B
****

FlowChart:



Aim:

① Code:
#Prac
#incl
#inc
void
{

Semester 2: Programming with C.

021

// Practical 1:

Aim: Program to understand basic data types & I/O.

① Code:

```
//Practical 1
#include <stdio.h>
#include <conio.h>
void main()
{
    char name[50], add[100], blood[3], grade[2];
    long mobile; int roll;
    clrscr();
    printf("Name: ");
    gets(name);
    printf("\n Address: ");
    gets(add);
    printf("\n Blood Group: ");
    gets(blood);
    printf("\nGrade: ");
    gets(grade);
    printf("\n MobileNo: ");
    getstn scanf("%ld", &mobile);
    printf("\n Rollno: ");
    scanf("%d", &roll);
    printf("\n\n\n *** YOUR INFO *** \n");
    printf("\n * %s (=) name", name);
    printf("\n Mobile: %ld \n Roll: %d", mobile, roll);
    printf("\n Address %s \n Blood Group: %s", add, blood);
    printf("\n Grades: %s \n ********", grade);
    //end of program
}
```

ISO

② Code:-

```
//Practical 1 - 2
#include<stdio.h>
#include<conio.h>
void main()
{
 clrscr();
 int a=8, b=6, c=7;
 clrscr();
 int s=(a+b+c)/2;
 t=(s-a); p=(s-b); q=(s-c);
 r=(s*t*p*q);
 v=r*(1/2); v=sqrt(r);
 printf("Area of triangle: %d", v);
 getch();
}
```

③ Code:-

```
//Practical 1 - 3
#include<stdio.h>
#include<conio.h>
void main()
{
 int a,b,c; int a, b, c;
 clrscr(); clrscr();
 scanf("Enter 3 values %d",&a);
 scanf("%d",&b);
 scanf("%d",&c);
 int avg=(a+b+c)/3;
 printf("Average: %d",avg);
}
```

Output

Area of triang

Flowchart

START

Initialize a,

Perform mathem

Display ap

STOP

Output:

Entre 3v

3

4

Average: 3

Output

Area of triangle: 120

Flowchart

START

Initialize a, b, c and assign values

Perform mathematical calculation to find area of triangle

Display appropriate output

STOP

Output:

Enter 3 values 2
3
4
Average: 3

Flowchart:

START

Initialize 3 values.

Using scanf take value from user.

Perform Average of the 3 values

Display app. output

STOP

Output

Enter 2 numbers:
2
3
Add = 5 Sub = 0 Mul = 6 Div = 0

:Practical 2:

:Programs on Operators & Expressions:

① Code:-

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int num1, num2, add, sub, mul, div;
    clrscr();
    printf("Enter 2 numbers");
    scanf("\n%d", &num1);
    scanf("\n%d", &num2);
    add = num1 + num2;
    sub = num1 - num2;
    mul = num1 * num2;
    div = num1 / num2;
    printf("Add: %d Sub: %d Mul: %d Div: %d", add, sub,
           mul, div)
    getch();
}
```

② Code:-

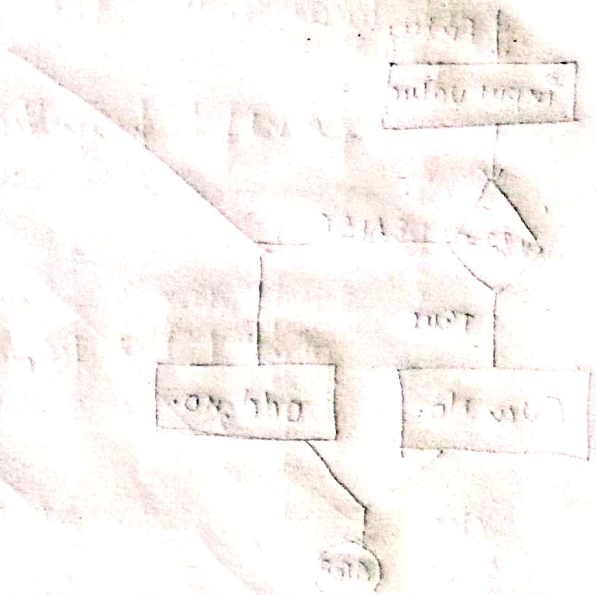
```
#include <conio.h>
#include <stdio.h>
void main()
{
    int x,y,z, v1, v2, v3, v4, v5;
    clrscr();
    printf("Enter 3 values");
    scanf("\n %d %d %d", &x, &y, &z);
    v1 = (x < y) && (x < z);
    v2 = (x == y) && (x > z);
    v3 = (x < y) || (z > y);
    v4 = !(x == y);
    v5 = (z == y);
    printf("\n %d %d %d %d %d", v1, v2, v3, v4, v5);
    getch();
}
```

Output

Enter 3 values

1 2 3

0 1 0 1 1 0

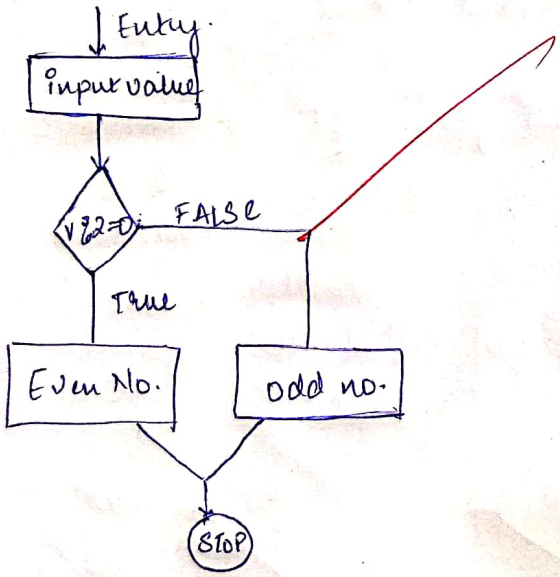


Output:

Enter Value: 7

Odd

Flowchart



Output:

Enter Year to check: 2020

Leap Year

: Practical 3:

: Programs on decision statements :

① // To find odd even no.

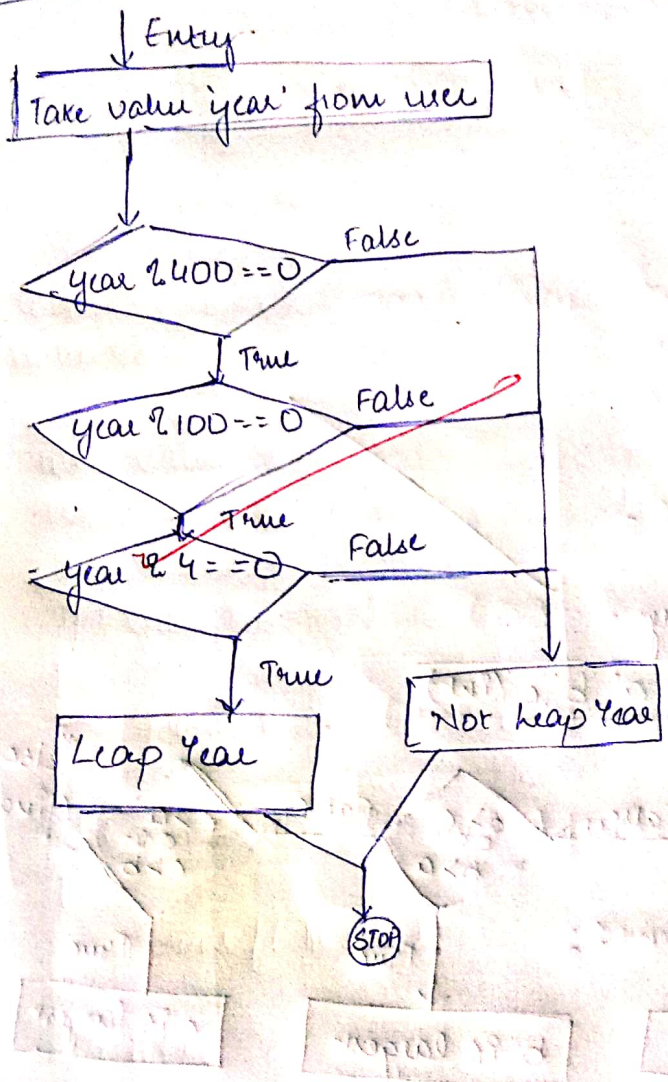
```
#include <conio.h>
#include <stdio.h>
void main()
{
    int value = 0;
    clrscr(); printf("Enter value: ")
    scanf("%d", &value);
    if (value % 2 == 0)
    {
        printf("In Even Number");
    }
    else
    {
        printf("Odd");
    }
    getch();
}
```

② // To find leap year

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int year = 0;
    clrscr();
    printf("Enter Year to check: ");
```

```
scanf("%d",&year);  printf("\n");
if (year%400==0)
{
  if (year%100==0)
  {
    if (year%4==0)
    {
      printf("leap year");
    }
    else
    {
      printf("Not leap year");
      break;
    }
  else
  {
   printf("Not leap year");
    break;
  }
else
{
  printf("Not leap year");
}
getch();
}
```

Flowchart



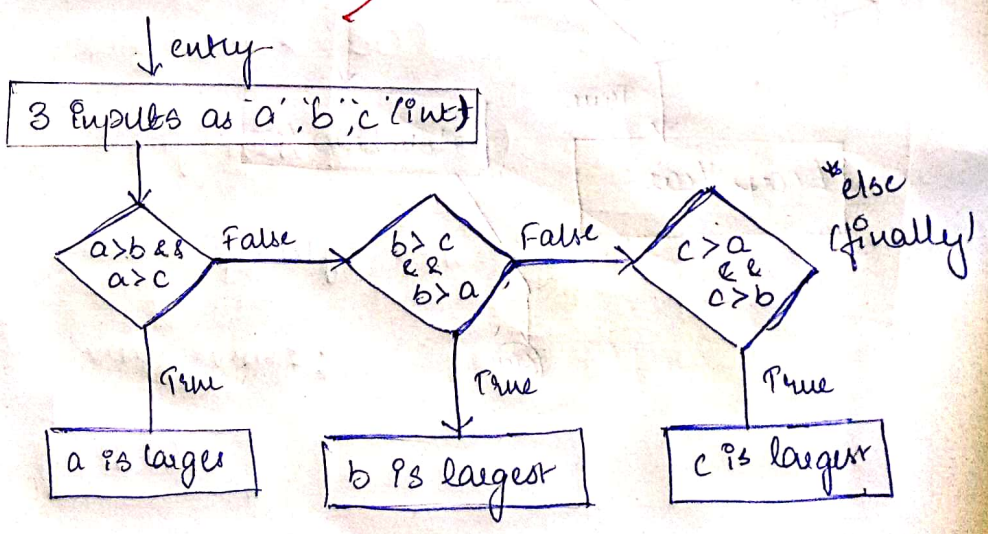
Q.

Output:

Enter 3 values:
7
8
9

9 is the largest.

Flowchart



Scanned with CamScanner

③ //find largest of 3 nos.

```
#include<conio.h>
#include<stdio.h>
void main()
{
    int a, b, c;
    clrscr();
    printf("enter 3 values: ");
    scanf("\n%d", &a);
    scanf("\n%d", &b);
    scanf("\n%d", &c); printf("\n");
    if((a>b) && (a>c))
    {
        printf("%d is the largest", a);
    }
    else if((b>a) && (b>c))
    {
        printf("%d is the largest", b);
    }
    else
    {
        printf("%d is the largest", c);
    } getch();
}
```

TSO :Practical 4:

:To puform basic arithmatic operations using else if ladder:

① Code:

```
//even no using while loop
#include<conio.h>
#include<stdio.h>
void main()
{
        int even=2;
        clrscr()
        while(even<=50)
        {
            if(even%2==0)
            {
                printf("Even: %d \n",even);
            }
         even=even+2;
        }
        getch();
}
```

② Code:

```
// fibonacci
#
#
void main()
{
    int limit=0,a,b,c;
    limit=0;a=0;b=1;c=0;
```

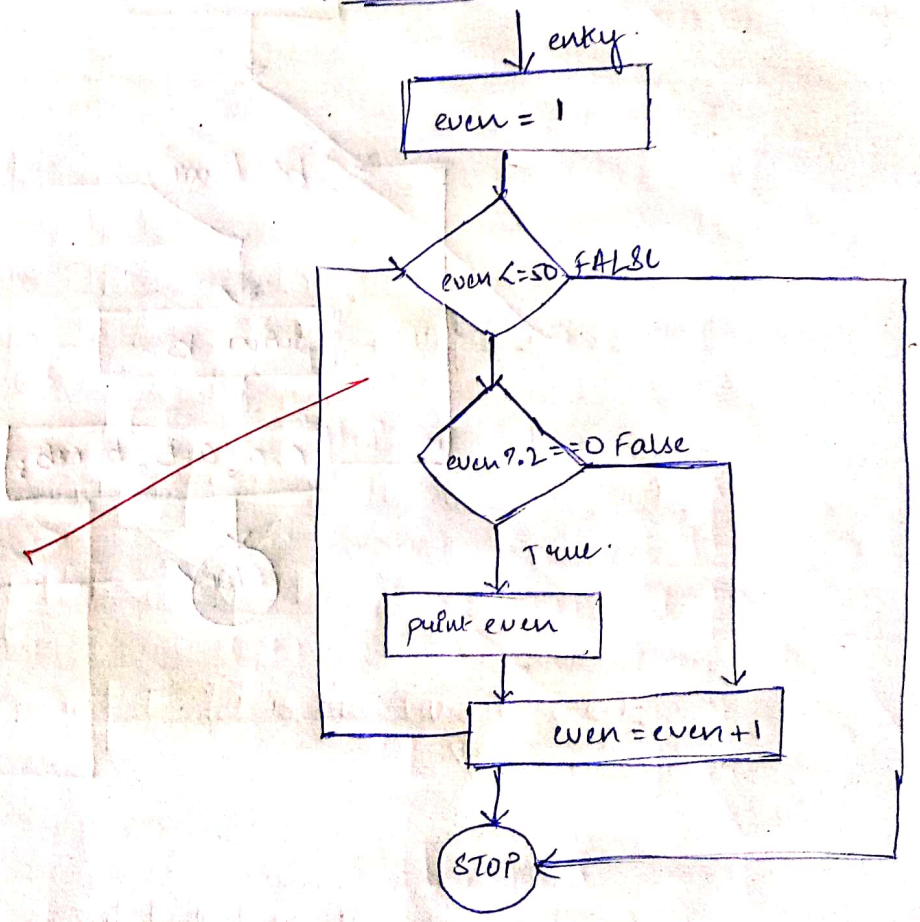
Output:

Even: 2
Even: 4
Even: 6
Even: 8
Even: 10
Even: 12
Even: 14
Even: 16
Even: 18
Even: 20
Even: 2
Even: 2
Even: 2
Even: 2
Even:
Even:
Even:
Even:
Even
Even
Even
Even
Even
Ev

Output:

Even: 2
Even: 4
Even: 6
Even: 8
Even: 10
Even: 12
Even: 14
Even: 16
Even: 18
Even: 20
Even: 22
Even: 24
Even: 26
Even: 28
Even: 30
Even: 32
Even: 34
Even: 36
Even: 38
Even: 40
Even: 42
Even: 44
Even: 46
Even: 48
Even: 50

Flowchart



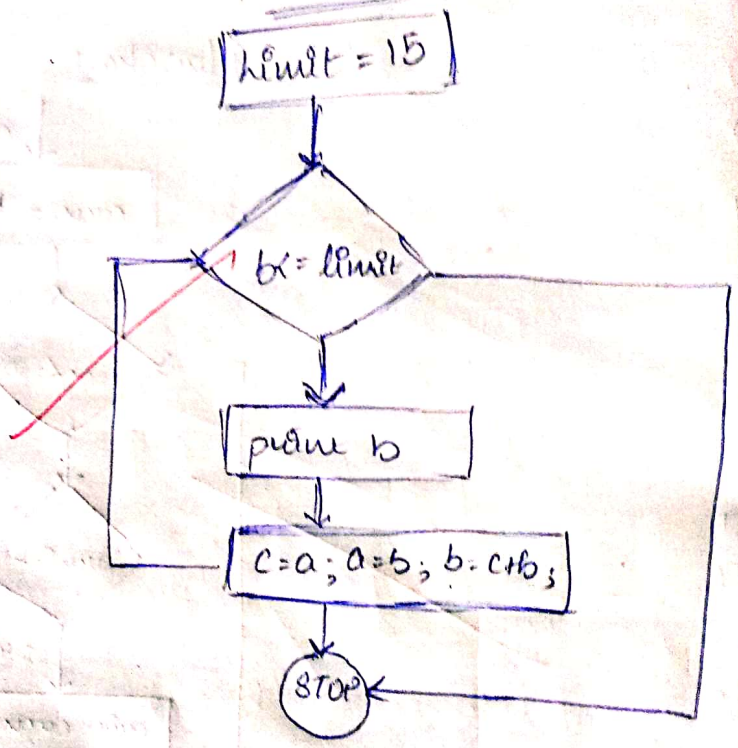
Output

limit: 15

Fibo:

0
1
1
2
3
5
8
13

Flowchart



```
clrscr();
printf("Limit: ");
scanf("%d",&limit); printf("\nFibo: \n %d", a);
while (b<=limit)
{
   printf("\n %d", b);
   c=a;
   a=b;
   b=c+b;
}
getch();
}
```

12/01/2020

P.S.O.   :Practical 5:

→ Program to find largest no. in an array

```
#include < conio.h >
#include < stdio.h >
void main ()
{
    int digits [10] = { 2, 7, 9, 4, 3, 0, 6, 4,
                        1, 10 }, b;
    clrscr (); int i=0;
    printf (" Number of digits we have: ");
    for (i=0; i<10; i++)
    {
        printf (" \n %d ", a[i] );
    }
    // finding largest.
    { b = a[0];
    for (i=0; i<10; i++)
    {
        if (b < a[i])
        {
            b = a[i];
        }
    }
    printf (" largest %d ", b );
    getch ();
}
```

<OUTPUT :>
2794306 4110
largest :10

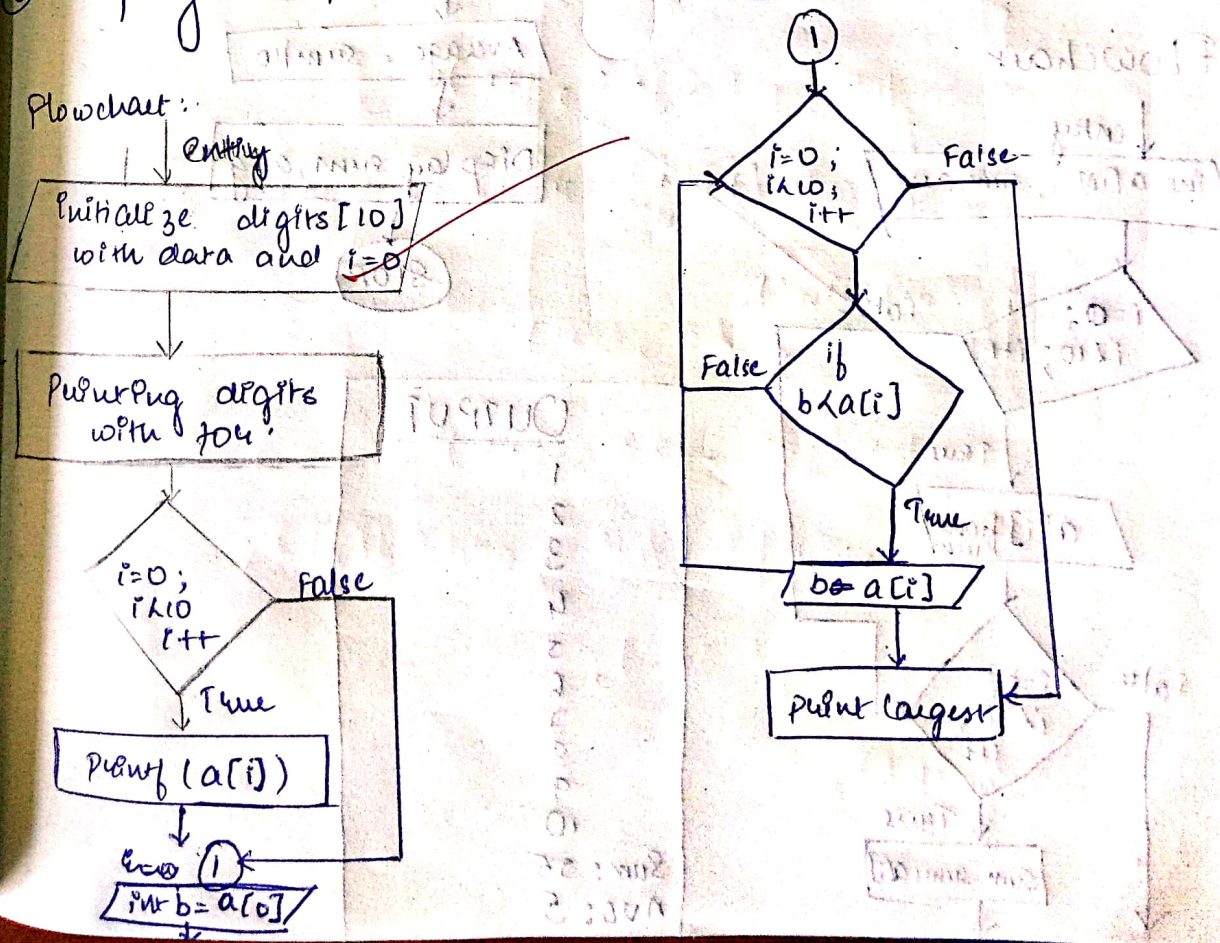
Algorith
① impou
main
② initia
③ Prin
④ store
if i
with
in b.
⑤ Disp

Flowcha
Initial
with
Print
with
i=
Prin

Algorithm:

1. Import necessary libraries, and create main function.
2. Initialize variable for array and i & b.
3. Print the digits of array using for loop.
4. Store the first digit of array in b, using if counter check every increment counter with b and store appropriate larger digit in b.
5. Display output.

Flowchart:



Algorithm:-

① Initialize the necessary libraries and create main function.

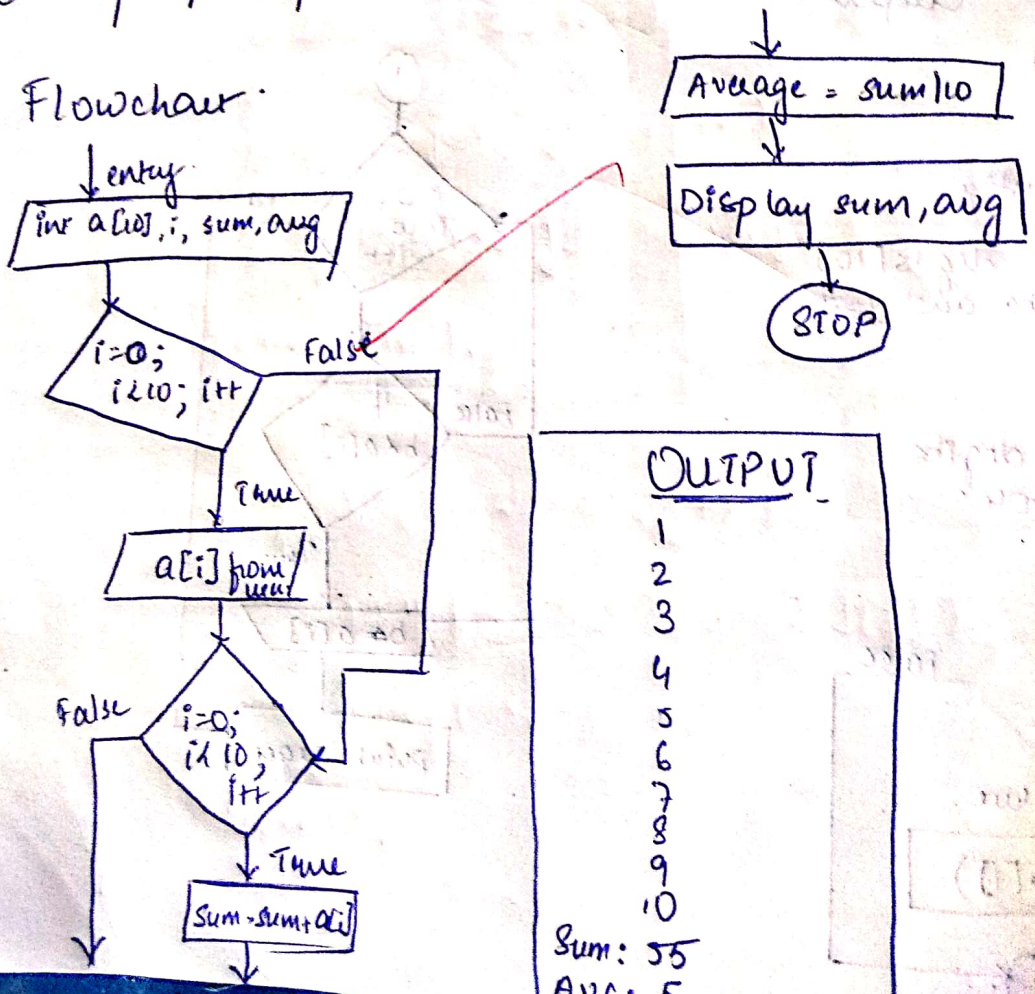
② Create variable array a; sum, i, avg.

③ Take value for array from user using for loop.

④ Using for add every incrementing digit in sum

⑤ Display output

Flowchart:



OUTPUT

1
2
3
4
5
6
7
8
9
10

Sum: 55
AVG: 5

→ Program to find sum & average in array.

```
#include <conio.h>
#include <stdio.h>
void main()
{
    int a[10], i=0, sum=0, average=0;
    clrscr();
    printf("Enter No. to check: \n");
    for(i=0; i<10; i++)
    {
      printf("\nEnter element : %d ",i);
      scanf("%d", &a[i]);
    }
    for(i=0; i<10; i++)
    {
      sum = sum + a[i];
    }
    average = sum / 10;
    printf("%d ", sum);
    printf("\n%d ", average);
    getch();
}
```

→ Program to perform matrix addition.

```
#
#
void main()
{
    ~~int x[3][3], y[3][3], add[3][3];~~
    ~~clrscr();~~ int i=0, j=0; ~~clrscr();~~
int x[3][3] = {{1,2,3},{4,5,6},{7,8,9}};
int y[3][3] = {{9,8,7},{6,5,4},{3,2,1}};
int add[3][3] = {{0,0,0},{0,0,0},{0,0,0}};
// clrscr();
for(i=0; i<3; i++)
{
    for(j=0; j<3; j++)
    {
        add[i][j] = x[i][j] + y[i][j];
    }
}printf("\n");
for(i=0; i<3; i++)
{
    for(j=0; j<3; j++)
    {
        printf("%d", add[i][j]);
    }
~~print~~ printf("\n");
}
getch();
}
```

Algorithm:

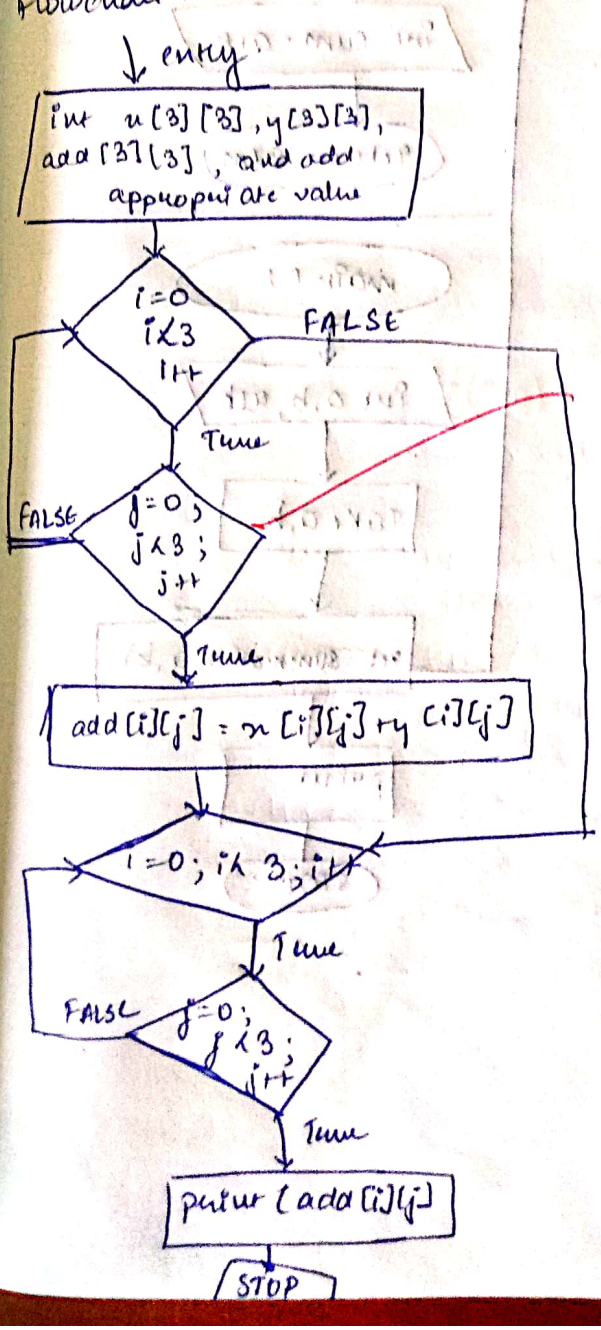
① Initialize program & main fn, take variable appropriately.

② assign x[3][3] with proper number, same for y[3][3] add add[3][3] as empty.

③ Using for of i & for j, add values appropriately.

④ Finally using for display appliare output.

Flowchart:



OUTPUT

10 10 10
10 10 10
10 10 10

07/02/2020

Output:

Enter 2 integers: 7 8

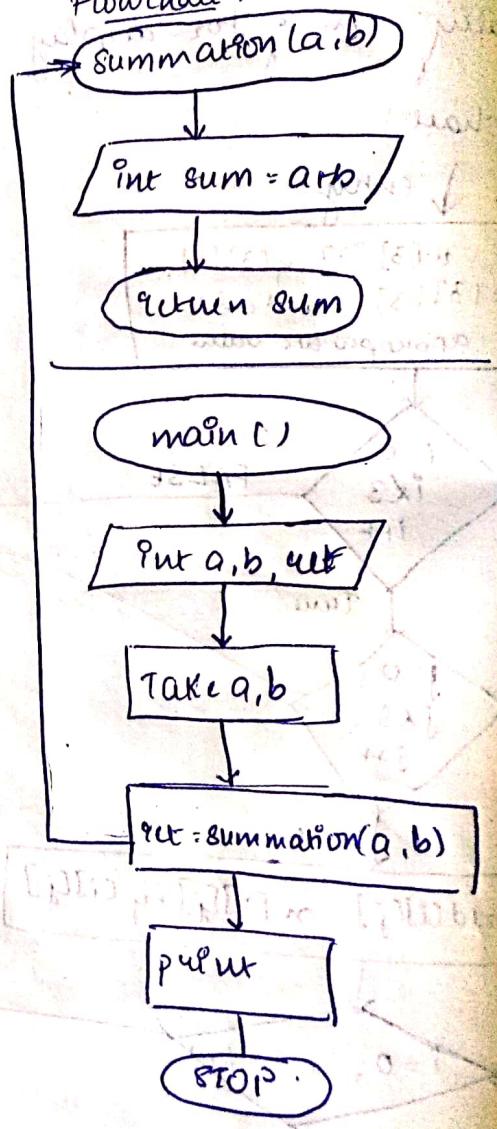
Finding sum...

Value : 15

Algorithm:

1. Include necessary libraries, create function summation to pass two argument & return as integer.
2. In function int variable sum and add two arguments and return sum.
3. finally create main fn, initialize variable, a, b, ret, take 2 value from user to store in a, b. Use ret as store variable & call the fn.
4. Display appriate output.

Flowchart:



: Practical No. 6 :

: Programs on Function :

→ Sum of digits of Entered Number.

```
#include<conio.h>
#include<stdio.h>
int Summation (int, int);
int Summation (a, b):
{
    int sum=0;
    sum= a+b;
    return sum;
}
void main ()
{
    int a, b, ret;
    clrscr();
    printf("Enter 2 Integers:");
    scanf("%d %d", &a, &b);
    printf("\nFinding sum.....\n");
    getch();
    ret= Summation(a,b);
    printf("Value: ", ret);
    getch();
}
```

880

→ Factorial of Number using Recursion.

```
#Include <stdio.h>
#Include <conio.h>
int fact (int);
int fact (a)
{
    if (a==1)
    {
        return 1;
    }
    else
    {
        return (a * fact(a-1));
    }
}
void main()
{
    int a; int ret;
    clrscr();
    printf("Enter limit: ");
    scanf("%d", &a");
    ret = fact(a);
    printf("In Value : %d", ret);
    getch();
}
```

Output:

Enter limit
Value : 3

Algorithm:

① Initialize function and

② In func if va else function

③ Finally va wi ca

④ Finally

Output:

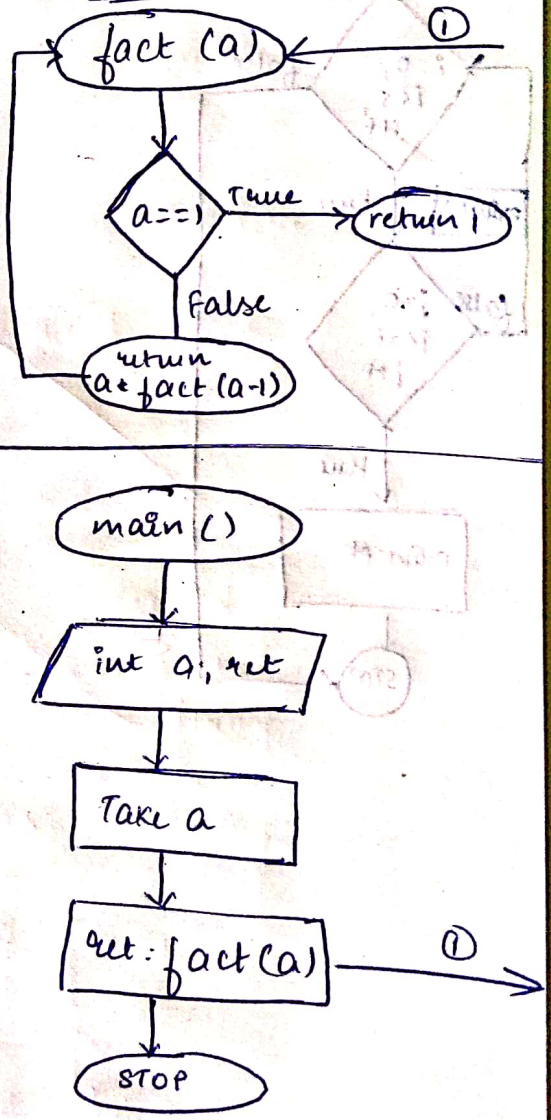
Enter Limit: 10

Value : 3628800

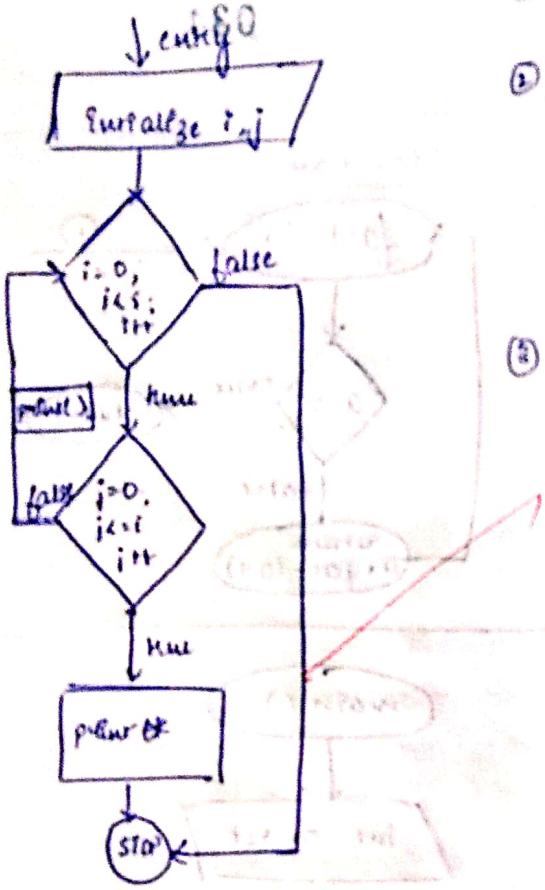
Algorithm:

1. Initialize necessary libraries and create function funct to pass one argument and return one argument at last
2. In function, using iteration if, check if value is equal to 1, return 1 else return (value) multiplied by function call, subtract 1.
3. Finally, create main, initialize 2 variables, take value from user and other to store and call funct, fp
4. Finally Display appropriate output.

Flowchart:



Flowchaar



Algorithm:

① Initialize & variables.

② Using for loop with appropriate limits, use another for loop within and print, if false print (in) format

③ Finally end program.

Print Pattern:

OUTPUT

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

```
#include<conio.h>
#include<stdio.h>
void main()
{
    int i, j; clrscr();
    for(i=0; i<5; i++)
    {
        for(j=0; j<=i; j++)
        {
            printf("* ");
        }
        printf("\n");
    }
    getch();
}
```

14/12/2020

280 : Practical 7:

: Programs on Structure & Uniour:

→ Program to read book id, price author, etc & display the same using structure.

```
#
#
void main()
{
    struct book_library
    {
        int id;
        char author[20];
        int price;
    } b[50];
    int i, size;
    printf("Enter limit: ");
    scanf("%d", size);
    for(i=0; i<size; i++)
    {
        printf("\nEnter details for book %d", i);
        printf("\n %d book id -> ", i);
        scanf("%d", &b[i].id);
        printf("\n %d book author", i);
        scanf("%s", &b[i].author);
        printf("\n %d book price -> ", i);
        scanf("%d", &b[i].price);
        printf("\n\n");
    }
    printf("\nThank you for details, your data");
    getch();
```

Output:

Enter li

Enter d

0 book

0 book

0 book

Thank y

id

213

Algorithm

1 Create

2 Take

3 Using

Output:

Enter limit: 1

Enter details for book 0

0 book id → 213

0 book author → James C

0 book price → 21311

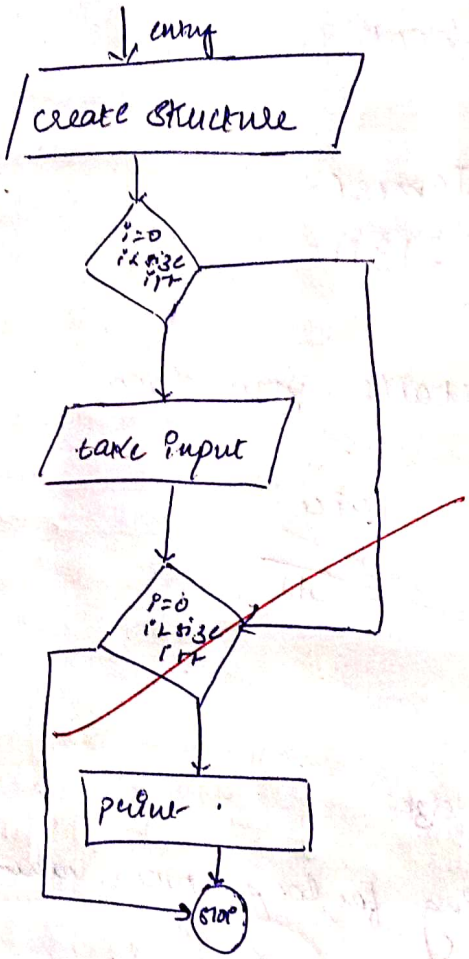
Thank you for details, your data.

id	Author	price
213	James C	21311

Algorithm:

1. Create structure, i & size
2. Take limit, & using for loop take values from user.
3. Using for loop print data.

Flowchart :



```
for (i=0; i<size; i++)
    {
        printf("\n\t id \t author \t price");
        printf("\n\t %d \t %s \t %d ", e[i].id, e[i].author,
                                        e[i].price);
        printf("\n");
        printf("\n");
    }
getch();
}
```

→ Program on Union.

```
#include<stdio.h>
#include<conio.h>
void main()
{
    union stud
    {
        int cash;
        char name[50];
    } e[2]; int i=0;
    clrscr();
    for(i=0; i<2; i++)
    {
        printf("\n-> %d", i);
        printf("\n cash \t name \n");
        scanf("%d %s", &e[i].cash, &e[i].name);
    }
    printf("\nthanks");
    for(i=0; i<2; i++)
    {
        printf("\n cash \t name");
        printf("\n %d \t %s", e[i].cash, e[i].name);
    }
    getch();
}
```

Output

```
0
Cash
42
1
Cash
31
thanks
Cash
42
31
Flowe
① Creat
② Take
③ Disp
```

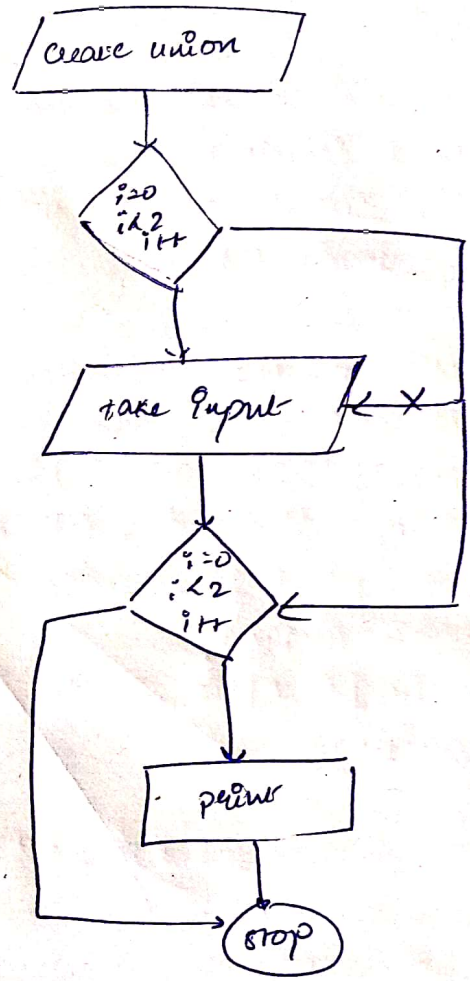
Output:

0
Cash Name
42 Zack
1
Cash Name
31 Nat
thanks
Cash Name
42 012
31 362

Flowchart: ~~Algorithm~~

1. Create Union.
2. Take input using for.
3. Display using for.

flowchart:



RSD

: Program on Pointers:

: Practical 8:

→ Pointer as function argument.

```
#include <stdio.h>
#include <conio.h>
void swap (int *, int *);
void main ()
{
    int x, y;
    clrscr ();
    printf ("2 values?");
    scanf ("%d %d", &x, &y);
    printf ("Before swap %d it %d", x, y);
    swap (&x, &y);
    printf ("After swap %d it %d", x, y);
    getch ();
}
void swap (int *p, int *q)
{
    int rem;
    rem = *q;
    *q = *p;
    *p = rem;
}
```

Outp
2 va
5
Bef
Aft

Algori
① Crea
② In
q
③ Poi
④ In
⑤ Swa

flowc

Output:

2 values ?

5 9

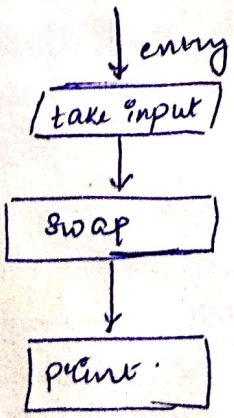
Before swap 5 9

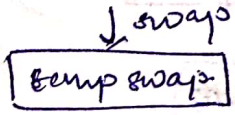
After swap 9 5

Algorithm

1. Create function swap with void.
2. In main, int x & y, take 2 values, & call the function.
3. Print the values.
4. In swap fn take input as pointer.
5. Swap with temporary variable

Flowchart





Output:

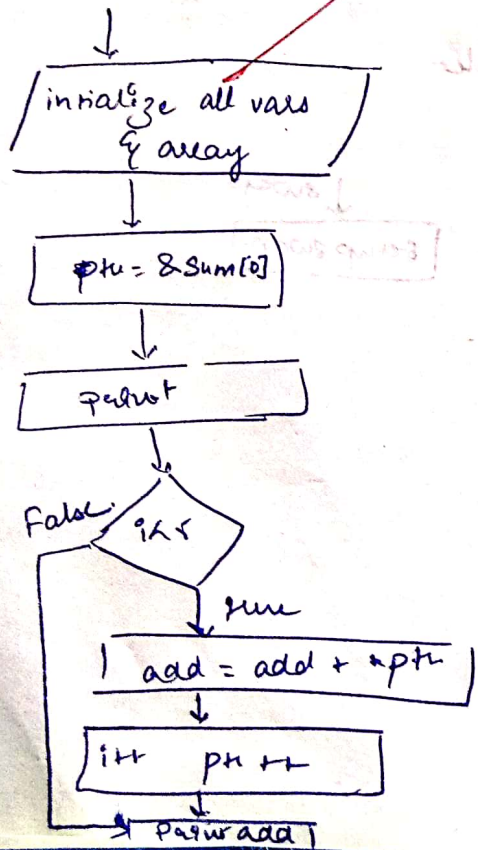
Adding ...

Sum = 29

Algorithm:

1. Create, array, add, *ptr. & assign array ① location to ptr.
2. Using while with limits.
3. add from *ptr.
4. increm limit; increment ptr.
5. display.

Flowchart



~~Sort array of data in ascending~~

* Sum of array using pointer.

```
#include <conio.h>
#include <stdio.h>
void main();
{
    int sum[5] = {3, 7, 8, 9, 2};
    int add = 0;
    int *ptr, i=0; clrscr();
    printf("Adding..\n"); ptr = &sum[0];
    while (i<5)
    {
        add = ptr; add = add + *ptr; // *ptr.
        i++
        ptr++
    }
    printf("Sum = %d", add);
    getch();
}
```

13/09/20 20