29 BASIC POGRAMS

1. #include <stdio.h> int main() { printf("Welcome to C language"); return 0;

}

**O/P:**

Welcome to C language

1. **Addition of 2 Numbers**

#include <stdio.h> int main() {

int a,b,c;

printf("Enter value of a & b:"); scanf("%d%d",&a,&b); c=a+b; printf("Addition=%d",c); return 0;

}

**O/P:**

Enter value of a & b:10

5

Addition=15

**3) Subtraction of 3 Numbers**

#include <stdio.h> int main() {

int a,b,c,d; printf("Enter value of a , b & c:"); scanf("%d%d%d",&a,&b,&c); d=a-b-c; printf("Subtraction=%d",d); return 0;

}

**O/P:**

Enter value of a , b & c:10

5

2

Subtraction=3

**4) Multiplication of 4 Numbers** #include <stdio.h> int main() {

int a,b,c,d,e; printf("Enter 4 numbers:"); scanf("%d%d%d%d",&a,&b,&c,&d); e=a\*b\*c\*d; printf("Multiplication=%d",e); return 0;

}

**O/P:**

Enter 4 numbers:1

2

3

4

Multiplication=24

**5) Addition of 5 numbers**

#include <stdio.h> int main() {

int a,b,c,d,e,f; printf("Enter 5 numbers:"); scanf("%d%d%d%d%d",&a,&b,&c,&d,&e); f=a+b+c+d+e;

printf("Addition=%d",f); return 0;

}

**O/P:**

Enter 5 numbers:1

2

3

4

5

Addition=15

1. Area of circle (3.14\*r\*r) #include <stdio.h> int main() {

float r,area; printf("Enter radius of circle:"); scanf("%f",&r); area=3.14\*r\*r; printf("Area of circle=%f",area); return 0;

}

O/P:

Enter radius of circle:4

Area of circle=50.240002

1. **Area of triangle (0.5\*b\*h)** #include <stdio.h> int main() {

float b,h,a; printf("Enter value of base & height of triangle:"); scanf("%f%f",&b,&h); a=0.5\*b\*h; printf("Area of triangle=%f",a); return 0;

}

**O/P:**

Enter value of base & height of triangle:5

3

Area of triangle=7.500000

**8) Area of rectangle (l\*b)**

#include <stdio.h>

int main() {

float l,b,a; printf("Enter value of l & b of rectangle:"); scanf("%f%f",&l,&b); a=l\*b; printf("Area of triangle=%f",a); return 0;

}

**O/P:**

Enter value of l & b of rectangle:15.5

10

Area of triangle=155.000000

**9) Kinetic Energy (0.5\*m\*v\*v)** #include <stdio.h> int main() {

float m,v,KE; printf("Enter value of m & v:"); scanf("%f%f",&m,&v); KE=0.5\*m\*v\*v; printf("Kinetic Energy=%f",KE); return 0;

}

**O/P:**

Enter value of m & v:15

12

Kinetic Energy=1080.000000

**10) Potential Energy (m\*g\*h)** #include <stdio.h> int main() {

float m,g,h,PE; printf("Enter value of m, g & h:"); scanf("%f%f%f",&m,&g, &h); PE=m\*g\*h; printf("Potential Energy=%f",PE); return 0;

}

**O/P:**

Enter value of m, g & h:13

16

21

Potential Energy=4368.000000

**11) Arithmetic Mean & Harmonic Mean**

#include <stdio.h> int main() {

float a,b,am,hm; printf("Enter value of a & b:"); scanf("%f%f",&a,&b); am=(a+b)/2; hm=(a-b)/2; printf("AM=%f\nHM=%f",am,hm); return 0;

}

**O/P:**

Enter value of a & b:7

8

AM=7.500000

HM=-0.500000

**12) Surface Area** #include <stdio.h> int main() {

float r,h,A,V; printf("Enter value of r & h:"); scanf("%f%f",&r,&h);

A=(2\*3.14\*r\*r)+(2\*3.14\*r\*h); V=3.14\*r\*r\*h; printf("AM=%f\nHM=%f",A,V); return 0;

}

**O/P:**

Enter value of r & h:2.2

3

AM=71.843201

HM=45.592800

**13) To find velocity & distance** #include <stdio.h> int main() {

float u,a,t,V,S; printf("Enter value of u,a & t:"); scanf("%f%f%f",&u,&a,&t);

V=u+(a\*t); S=u+(a\*t\*t);

printf("velocity=%f\ndistance=%f",V,S); return 0;

}

**O/P:**

Enter value of u,a & t:27

3 2 velocity=33.000000 distance=39.000000

**14) To find area & perimeter of ring**

#include <stdio.h> int main() {

float a,b,P,A; printf("Enter value of a & b:"); scanf("%f%f",&a,&b); P=2\*3.14\*(a+b); A=2\*3.14\*(a-b)\*(a+b); printf("Area of ring=%f\nPerimeter of ring=%f",P,A); return 0;

}

**O/P:**

Enter value of a & b:3.3 4

Area of ring=45.844002

Perimeter of ring=-32.090801

**15) Surface area & Volume of cuboid**

#include <stdio.h> int main() {

float l,b,h,SA,V; printf("Enter value of l,b & h:"); scanf("%f%f%f",&l,&b,&h);

SA=2\*(l\*b + l\*h + b\*h); V=l\*b\*h; printf("Area of cuboid=%f\nVolume of cuboid=%f",SA,V); return 0;

}

**O/P:**

Enter value of l,b & h:4

7

5

Area of cuboid=166.000000

Volume of cuboid=140.000000

**16) To find temperature in C & Kelvin**

#include <stdio.h> int main() {

float f,C,K; printf("Enter value of f:"); scanf("%f",&f);

C=(9/5)\*(f-32);

K=C+273.15; printf("Celsius=%f\nKelvin=%f",C,K); return 0;

}

**O/P:**

Enter value of f:40

Celsius=8.0

Kelvin=287.9

**17) Accept 5 subject marks from user & calculate total & percentage**

#include <stdio.h> int main() { int m1,m2,m3,m4,m5,total; float per; printf("Enter 5 subject marks:");

scanf("%d%d%d%d%d",&m1,&m2,&m3,&m4,&m5); total=m1+m2+m3+m4+m5;

per=(total/500.0)\*100;

printf("Total marks=%d\nPercentage=%f",total,per); return 0;

}

**O/P:**

Enter 5 subject marks:78

54

90

45

87

Total marks=354

Percentage=70.800003

**18) Accept length, breadth and height of the room, also accept length and height of the door, also accept length and height of the two windows and calculate total area to be painted (including roof also).**

#include <stdio.h> int main() { float l,b,h,dl,dh,wl,wh,SA,door,window,total; printf("Enter the length, breath & height of room:"); scanf("%f%f%f",&l,&b,&h); printf("Enter the length & height of door:"); scanf("%f%f",&dl,&dh);

printf("Enter the length & height of window:"); scanf("%f%f",&wl,&wh); SA=2\*(l\*b + l\*h + b\*h); door=(dl\*dh); window=2\*(wl\*wh); total=SA-door-window-(l\*b); printf("Total area to be painted=%f",total); return 0;

}

**O/P:**

Enter the length, breath & height of room:20

18

19

Enter the length & height of door:7

4

Enter the length & height of window:4

3

Total area to be painted=1752.000000

1. **Accept basic salary from the user and calculate HRA(Home Rental Allowance), TA(Travelling Allowance), DA(Dinar Allowance) and also calculate gross salary.** #include <stdio.h> int main() { float bs,hra,ta,da,gs; printf("Enter basic salary:"); scanf("%f",&bs); hra=bs\*0.40; ta=bs\*0.35; da=bs\*0.50; gs=bs+hra+ta+da; printf("HRA=%f",hra); printf("\nTA=%f",ta); printf("\nDA=%f",da); printf("\nGross salary=%f",gs);

return 0;

}

**O/P:**

Enter basic salary:10000

HRA=4000.000000

TA=3500.000000

DA=5000.000000

Gross salary=22500.000000

1. **Swapping two numbers using a third variable.**

#include <stdio.h> int main() {

int a,b,c; printf("Enter value of a & b:"); scanf("%d%d",&a,&b); c=a; a=b; b=c; printf("a=%d,b=%d",a,b); return 0;

}

**O/P:**

Enter value of a & b:10

20 a=20,b=10

**21) Swapping two numbers without using a third variable.**

#include <stdio.h> int main() {

int a,b; printf("Enter value of a & b:"); scanf("%d%d",&a,&b); a=a+b; b=a-b; a=a-b; printf("a=%d,b=%d",a,b); return 0;

}

**O/P:**

Enter value of a & b:10

20 a=20,b=10

**21.1) Swapping two numbers using \* and / operator.** #include <stdio.h> int main() {

int a,b;

printf("Enter value of a & b:"); scanf("%d%d",&a,&b); a=a\*b; b=a/b; a=a/b; printf("a=%d,b=%d",a,b); return 0;

}

**O/P:**

Enter value of a & b:10

20 a=20,b=10

**21.2) Swapping two numbers using the ^(bitwise) operator.** #include <stdio.h> int main() {

int a,b; printf("Enter value of a & b:"); scanf("%d%d",&a,&b); a=a^b; b=a^b; a=a^b; printf("a=%d,b=%d",a,b); return 0;

}

**O/P:**

Enter value of a & b:10

20 a=20,b=10

**22) Take input in litre(l) and display output in mililitre(ml).**

#include <stdio.h> int main() {

float ltr,ml; printf("Enter value of l:"); scanf("%f",&ltr); ml=ltr\*1000; printf("ml=%f",ml); return 0;

}

**O/P:**

Enter value of l:1 ml=1000.000000

**23) Take input in kilometer(km) and display output in meter(m).**

#include <stdio.h> int main() {

float km,m; printf("Enter value of km:"); scanf("%f",&km); m=km\*1000;

printf("meter=%f",m); return 0;

}

**O/P:**

Enter value of km:2.2 meter=2200.000000

**24) Take input in hours(h), minutes(m) and seconds(s) and display output in seconds.** #include <stdio.h> int main() {

int h,m,s,sec; printf("Enter value of h,m & s:"); scanf("%d%d%d",&h,&m,&s); sec=(h\*3600)+(m\*60)+s; printf("Seconds=%d",sec); return 0;

}

**O/P:**

Enter value of h,m & s:1

12

2

Seconds=4322

**25) Take input in mililitre(ml) and display output in litre(l) and mililitre(ml).**

#include <stdio.h> int main() { int ml,l; printf("Enter value of ml:"); scanf("%d",&ml); l=ml/1000; ml=ml%1000;

printf("%dl %dml",l,ml); return 0;

}

**O/P:**

Enter value of ml:1750

1l 750ml

1. **Take input in meter(m) and display output in kilometer(km) and meter(m).** #include <stdio.h> int main() { int m,km;

printf("Enter value of m:"); scanf("%d",&m); km=m/1000; m=m%1000;

printf("%dkm %dm",km,m); return 0;

}

**O/P:**

Enter value of m:2489 2km 489m

1. **Take input in seconds and display output in hours(h),minutes(m) and seconds(s).** #include <stdio.h> int main() { int sec,h,m,s; printf("Enter value of sec:"); scanf("%d",&sec); h = (sec/3600); m = (sec -(3600\*h))/60; s = (sec -(3600\*h)-(m\*60)); printf("%dh:%dm:%ds",h,m,s); return 0;

}

**O/P:**

Enter value of sec:5486

1h:31m:26s

1. **Take input 4 digit number (1234) and display output 4321.**

#include <stdio.h> int main()

{

int num, last, rev=0; printf("enter 4 digit number:"); scanf("%d",&num); last=num%10; rev=rev\*10+last; num=num/10;

last=num%10; rev=rev\*10+last; num=num/10;

last=num%10; rev=rev\*10+last; num=num/10;

rev=rev\*10+num; printf("reverse number is: %d",rev); return 0;

}

**OR**

#include <stdio.h> int main()

{

int num, a,b,c,d; printf("enter 4 digit number:"); scanf("%d",&num); a=num%10; num=num/10;

b=num%10; num=num/10;

c=num%10; num=num/10;

d=num%10;

printf("reverse number is:%d%d%d%d",a,b,c,d); return 0;

}

**O/P:**

enter 4 digit number1234 reverse number is 4321

**29) Count the total number of notes in a given amount.**

#include <stdio.h> int main() { int amt; int n500=0, n200=0, n100=0, n50=0, n20=0, n10=0, n5=0, n2=0, n1=0; printf("Enter amount: "); scanf("%d", &amt); n500 = amt / 500; amt = amt % 500;

n200 = amt / 200; amt = amt % 200;

n100 = amt / 100; amt = amt % 100;

n50 = amt / 50; amt = amt % 50;

n20 = amt / 20; amt = amt % 20;

n10 = amt / 10; amt = amt % 10;

n5 = amt / 5; amt = amt % 5;

n2 = amt / 2; amt = amt % 2; n1 = amt / 1; amt = amt % 1;

printf("Total number of notes:\n"); printf("500 = %d\n", n500); printf("200 = %d\n", n200); printf("100 = %d\n", n100); printf("50 = %d\n", n50); printf("20 = %d\n", n20); printf("10 = %d\n", n10); printf("5 = %d\n", n5); printf("2 = %d\n", n2); printf("1 = %d\n", n1); return 0;

}

**O/P:**

Enter amount: 888 Total number of notes:

500\*1 = 1

200\*1 = 1

100\*1 = 1

50\*1 = 1

20\*1 = 1

10\*1 = 1

5\*1 = 1

2\*1 = 1

1\*1 = 1

30) #include <stdio.h> #include<math.h> int main()

{

float x1,x2,y1,y2,d; printf("Enter value of x1,x2,y1,y2:"); scanf("%f%f%f%f",&x1,&x2,&y1,&y2); d=sqrt((x2-x1)+(y2-y1));

printf("%f",d); return 0;

}

O/P:

Enter value of x1,x2,y1,y2:13

23

34

45

4.582576

31)#include <stdio.h> #include<math.h> int main()

{

float a,b,c,dplue,dminus; printf("Enter value a,b,c:"); scanf("%f%f%f",&a,&b,&c); dplue=b+(sqrt(b\*b-4\*a\*c))/2\*a; dminus=-b+(sqrt(b\*b-4\*a\*c))/2\*a; printf("%f\n%f",dplue,dminus); return 0;

}

**32) Find ASCII value ,Next character and Prev character**

#include <stdio.h> #include<math.h> int main()

{

char ch; printf("Enter character:"); scanf("%c",&ch); printf("ASCII=%d",ch); printf("\nNext character=%c",(ch+1)); printf("\nPrev character=%c",(ch-1)); return 0;

}

**O/P:**

Enter character:b ASCII=98

Next character=c

Prev character=a