ASSIGNMENT C-PROGRAMING
GLA-UNIVERSITY
SECTION-H HARSH SHARMA

// Q1. Hello, World! Program

```
#include<stdio.h>
void main()
{

 printf("Hello,World!");

}
```

// Q2. C Program to Print an Integer (Entered by the User)

```
#include<stdio.h>
void main()
{
 int x;

 printf("Enter integer: ");
 scanf("%d",&x);
 printf("Integer: %d",x);

}
```

// Q3. C Program to Add Two Integers.

```
#include<stdio.h>
void main()
{
 int a,b,sum;
 printf("\nEnter 1st no.= ");
```

```
 scanf("%d",&a);
 printf("\nEnter 2nd no.= ");
 scanf("%d",&b);
 sum=a+b;
 printf("\n\nSum of %d and %d = %d",a,b,sum);
}
```

//Q4. C Program to Multiply Two Floating-Point Numbers.

```
#include<stdio.h>
void main()
{
 float a,b,m;
 printf("\nEnter 1st no.= ");
 scanf("%f",&a);
 printf("\nEnter 2nd no.= ");
 scanf("%f",&b);
 m=a*b;
 printf("\n\nMultiplication of %f and %f = %f",a,b,m);
}
```

// Q5. C Program to Find ASCII Value of a Character.

```
#include<stdio.h>
void main()
{
 char ch;
 printf("Enter the character: ");
 scanf("%c",&ch);
 printf("ASCII value of %c = %d",ch,ch);
}
```

// Q6. C Program to Compute Quotient and Remainder.

```
#include<stdio.h>
void main()
{
  int x,y,q,r;

  printf("Enter Divisor: ");
  scanf("%d",&x);
  printf("\nEnter Dividend: ");
  scanf("%d",&y);

   q = y / x;
   r = y % x;

   printf("\nQuotient: %d",q);
   printf("\nRemainder: %d",r);
}
```

// Q7. C Program to Find the Size of int, float, double and char.

```
#include<stdio.h>
void main()
{
 int a,b,c,d;

 a=sizeof(int);
 b=sizeof(float);
 c=sizeof(double);
 d=sizeof(char);

 printf("\nSizeof(int): %d",a);
 printf("\nSizeof(float): %d",b);
 printf("\nSizeof(double): %d",c);
 printf("\nSizeof(char): %d",d);
}
```

// Q8. C Program to Demonstrate the Working of Keyword long.

```
#include<stdio.h>
void main()
{
 long l;
 printf("Enter the value: ");
 scanf("%ld",&l);
 printf("Value: %ldt",l);
}
```

// Q9. C Program to Swap Two Numbers.

```
#include<stdio.h>
void main()
{
 float x,y;

 printf("\nEnter 1st value: ");
 scanf("%f",&x);
 printf("\nEnter 2nd value: ");
 scanf("%f",&y);
 printf("\nOriginal value: \nx = %f \ny = %f",x,y);

 x=x+y;
 y=x-y;
 x=x-y;

 printf("\nValue after swap: \nx = %f \ny = %f",x,y);
}
```

// Q10. C Program to solve area of square.

```
#include<stdio.h>
void main()
{
```

```
 float s,a;

 printf("\nEnter side of a square: ");
 scanf("%f",&s);

 a = s * s;

 printf("Area of a square: %f",a);
}
```

// Q11. C Program to find area of triangle using herons formula.

```
#include<stdio.h>
#include<math.h>
void main()
{
 float s,a,b,c,A;

 printf("\nEnter 1st side: ");
 scanf("%f",&a);
 printf("\nEnter 2nd side: ");
 scanf("%f",&b);
 printf("\nEnter 3thd side: ");
 scanf("%f",&c);

 s=(a+b+c)/2;
 A=sqrt(s*(s-a)*(s-b)*(s-c));
 printf("\nArea of a triangle : %f",A);
}
```

//Q12. C program to find area of trapezium.

```
#include<stdio.h>
void main()
{
 float b1,b2,h,a;
```

```
 printf("\nEnter base 1 of a trapezium: ");
 scanf("%f",&b1);
 printf("\nEnter base 2 of a trapezium: ");
 scanf("%f",&b2);
 printf("\nEnter height of a trapezium: ");
 scanf("%f",&h);

 a = h*(b1+b2)/2;

 printf("Area of a trapezium: %f",a);
}
```

// Q13. C program to find volume of sphere.

```
#include<stdio.h>
void main()
{
 float r,v;
 printf("\nEnter radius of a sphere: ");
 scanf("%f",&r);

 v=4*3.14*r*r*r/3;

 printf("\n Volume of a sphere: %f",v);
}
```

// Q14. Write a C program to perform input/output of all basic data types.

```
#include<stdio.h>
void main()
{
 int i;
 char ch;
 double d;
 float f;

 printf("Use of basic data types:");
```

```
 printf("\nEnter value(char): ");
 scanf("%c",&ch);
 printf("\nEnter value(int): ");
 scanf("%d",&i);
 printf("\nEnter value(double): ");
 scanf("%lf",&d);
 printf("\nEnter value(float): ");
 scanf("%f",&f);

 printf("\nValue(int): %d",i);
 printf("\nValue(char): %c",ch);
 printf("\nValue(double): %lf",d);
 printf("\nValue(float): %f",f);
}
```

// Q15. Write a C program to enter two numbers and find their sum.

```
#include<stdio.h>
void main()
{
 float a,b,sum;
 printf("\nEnter 1st no.= ");
 scanf("%f",&a);
 printf("\nEnter 2nd no.= ");
 scanf("%f",&b);
 sum=a+b;
 printf("\n\nSum of %f and %f = %f",a,b,sum);
}
```

// Q16. Write a C program to enter two numbers and perform all arithmetic operations

```
#include<stdio.h>
void main()
{
 int x1,x2,a,b,c,d,e;
```

```
 printf("\nEnter 1st number: ");
 scanf("%d",&x1);
 printf("\nEnter 2nd number: ");
 scanf("%d",&x2);

 a = x1+x2;
 b = x1-x2;
 c = x1*x2;
 d = x1/x2;
 e = x1%x2;

 printf("\nArithmetic Operations \n %d + %d = %d \n %d - %d = %d \n %d * %d = %d \n %d / %d =
%d \n %d %% %d = %d",x1,x2,a,x1,x2,b,x1,x2,c,x1,x2,d,x1,x2,e);
}
```

// Q17. Write a C program to enter length and breadth of a rectangle and find its perimeter.

```
#include<stdio.h>
void main()
{
 float l,b,p;

 printf("\nEnter the length of a reactangle: ");
 scanf("%f",&l);
 printf("\nEnter the breadth of a reactangle: ");
 scanf("%f",&b);

 p = 2*(l + b);

 printf("\nPerimeter of a rectangle: %f",p);
}
```

// Q18. Write a C program to enter length and breadth of a rectangle and find its area.

```
#include<stdio.h>
void main()
```

```
{
 float l,b,a;

 printf("\nEnter the length of a reactangle: ");
 scanf("%f",&l);
 printf("\nEnter the breadth of a reactangle: ");
 scanf("%f",&b);

 a = l * b;

 printf("\nArea of a rectangle: %f",a);
}
```

/* Q19. Write a C program to enter radius of a circle and find its diameter, circumference and area. */

```
#include<stdio.h>
void main()
{
 float r,d,circum,area;

 printf("\nEnter the radius of a circle: ");
 scanf("%f",&r);

 d=2*r;
 circum=2*3.14*r;
 area=3.14*r*r;

 printf("\nDiameter of a circle: %f",d);
 printf("\nCircumference of a circle: %f",circum);
 printf("\nArea of a circle: %f",area);
}
```

/* Q20. Write a C program to enter length in centimeter and convert it into meter and kilometer. */

```
#include<stdio.h>
void main()
{
 float cm,m,km;

 printf("\nEnter the value(centimeters): ");
 scanf("%f",&cm);

 m=cm/100;
 km=cm/100000;

 printf("\nValue in meters: %f",m);
 printf("\nValue in kilometers: %f",km);
}
```

// Q21. Write a C program to enter temperature in Celsius and convert it into Fahrenheit.

```
#include<stdio.h>
void main()
{
 float f,c;

 printf("Enter the temperature in celsius: ");
 scanf("%f",&c);

 f = (c*9/5)+32;

 printf("Temperature in fahrenheit: %f",f);
}
```

// Q22. Write a C program to enter temperature in Fahrenheit and convert to Celsius

```
#include<stdio.h>
void main()
{
 float f,c;
```

```
 printf("Enter the temperature in fahrenheit: ");
 scanf("%f",&f);

 c = (f-32)*5/9;

 printf("Temperature in celsius: %f",c);
}
```

// Q23. Write a C program to convert days into years, weeks and days.

```
#include<stdio.h>
void main()
{

 int x,b,y,d,w;

 printf("Enter the days: ");
 scanf("%d",&x);

 y=x / 365;
 b=x % 365;
 w=b / 7;
 d=b % 7;

 printf("\nConversion of %d days in (Year,Weeks,Days): %d years %d weeks %d days",x,y,w,d);

}
```

// Q24. Write a C program to find power of any number x ^ y.

```
#include<stdio.h>
#include<math.h>
void main()
{
 float x,y,a;

 printf("\nEnter the value of x (x^y): ");
 scanf("%f",&x);
```

```
 printf("\nEnter the value of y (x^y): ");
 scanf("%f",&y);

 a=pow(x,y);

 printf("\nValue of x^y: %f",a);
}
```

// Q25. Write a C program to enter any number and calculate its square root.

```
#include<stdio.h>
#include<math.h>
void main()
{
 float x;

 printf("\nEnter the value: ");
 scanf("%f",&x);

 x=sqrt(x);

 printf("\nSquare root: %f",x);
}
```

// Q26. Write a C program to enter two angles of a triangle and find the third angle.

```
#include<stdio.h>
void main()
{
 float a1,a2,a3;

 printf("\nEnter 1st angle of a triangle: ");
 scanf("%f",&a1);
 printf("\nEnter 2nd angle of a triangle: ");
 scanf("%f",&a2);
```

```
 a3=180-(a1+a2);

 printf("\n3thd angle of a triangle: %f",a3);
}
```

// Q27. Write a C program to enter base and height of a triangle and find its area.

```
#include<stdio.h>
void main()
{
 float a,b,h;

 printf("\nEnter the base of a triangle: ");
 scanf("%f",&b);
 printf("\nEnter the height of a triangle: ");
 scanf("%f",&h);

 a=b*h/2;

 printf("\nArea of a triangle: %f",a);
}
```

// Q28. Write a C program to calculate area of an equilateral triangle.

```
#include<stdio.h>
void main()
{
 float a,s;

 printf("\nEnter the side of an equilateral triangle: ");
 scanf("%f",&s);

 a=1.732*s*s/4;

 printf("\nArea of an equilateral triangle: %f",a);
}
```

```
//  Q29. Write a C program to enter marks of five subjects and calculate total, average and
//       percentage.

#include<stdio.h>
void main()
{
 float x1,x2,x3,x4,x5,avg,p,t;

 printf("\nEnter marks of 1st subject: ");
 scanf("%f",&x1);
 printf("\nEnter marks of 2nd subject: ");
 scanf("%f",&x2);
 printf("\nEnter marks of 3rd subject: ");
 scanf("%f",&x3);
 printf("\nEnter marks of 4th subject: ");
 scanf("%f",&x4);
 printf("\nEnter marks of 5th subject: ");
 scanf("%f",&x5);

 t=x1+x2+x3+x4+x5;
 avg=t/5;
 p=(t/500)*100;

 printf("\nTotal marks: %f",t);
 printf("\nAverage marks: %f",avg);
 printf("\nPercentage: %f",p);
}
```

```
// Q30. Write a C program to enter P, T, R and calculate Simple Interest.

#include<stdio.h>
void main()
{
 float p,r,si;
 int t;
```

```
 printf("\nEnter principal: ");
 scanf("%f",&p);
 printf("\nEnter rate: ");
 scanf("%f",&r);
 printf("\nEnter time: ");
 scanf("%d",&t);

 si=p*r*t/100;

 printf("\nSimple interest: %f",si);
}
```

// Q31. Write a C program to enter P, T, R and calculate Compound Interest.

```
#include<stdio.h>
#include<math.h>
void main()
{
 float p,r,a,ci;
 int t;

 printf("\nEnter principal: ");
 scanf("%f",&p);
 printf("\nEnter rate: ");
 scanf("%f",&r);
 printf("\nEnter time: ");
 scanf("%d",&t);

 a=p*pow((1+r/100),t);
 ci=a-p;

 printf("\nCompound interest: %f",ci);
}
```

// Q32. Write a C program to show the working of escape characters in C programming.

```
#include <stdio.h>
void main()
{

printf("\nHello World\b\b\b\bFun");    // \b escape sequence
        printf("\nHello\n");                  // \n escape sequence
        printf("C Programming");
        printf("\nHello \t Friends");        // \t escape sequence
       printf("\nHello Sir");
        printf("\v Welcome to C");        // \v escape sequenc
        printf("\nC\\C++");                 // escape sequence to print backslash.
        printf("\nHello progra \r mming");     // \r escape sequence
         printf("\n\' Hello World");       // \' escape sequence and \" escape sequence to print single
quote and double quote.
printf("\n\" Hello World");


}
```

// Q33. Write a C program to input a mobile number and display 10 digits on the screen.

```
#include<stdio.h>
void main()
{
 unsigned long num;
 printf("\nEnter the mobile no. : ");
 scanf("%lu",&num);
 printf("\nMOBILE NO.: %lu",num);
}
```

/* Q35 Write a program to print the following line (Assume the total value is contained in a
   variable named cost) The sales total is : $ 172.53 */

```
#include<stdio.h>
void main()
{
```

```
 float cost=172.53;
 printf("\nThe sales total is : $%.2f",cost);
}
```

```
/* Q36. Raju got 6 and half apples from each of Raghu, Sheenu and Akash. He wants to
        know how many apples he has in total without adding them. Write a program which
        could help Raju in doing this. */

#include<stdio.h>
void main()
{
 float x;
 x=3*6*0.5;
 printf("\nTotal apples Raju have: %f",x);
}
```

```
// Q37. Write a program that prints the floating point value in exponential format correct to
//      two decimal places.

#include<stdio.h>
void main()
{
 float x;
 printf("Enter the float value: ");
 scanf("%f",&x);
 printf("Value in exponent form: %.2e",x);
}
```

```
/* Q38. The population of a city is 30000. It increases by 20 % during first year and 30%
during the second year. Write a program to find the population after two years? */

#include<stdio.h>
void main()
```

```
{
 int a,p;

 a=30000*20/100;
 p=30000+a;
 a=p*30/100;
 p=p+a;

 printf("\nPopulation of city: 30000");
 printf("\nPopulation of city after 2 year: %d",p);
}
```

/* Q39. Write a program to calculate salary of an employee, given his basic pay (entered by user), HRA=15% of the basic pay and TA=20% of the basic pay.*/

```
#include<stdio.h>
void main()
{
 float bs,hr,da,gs;

 printf("\nEnter the basic salary = ");
 scanf("%f",&bs);

 hr=bs*15/100;
 da=bs*20/100;
 gs=hr+da+bs;

 printf("\n\nBasic salary = %f ",bs);
 printf("\n\nSalary of an employee = %f ",gs);
}
```

/* Q40. Write a program to find the slope of a line and angle of inclination that passes through two points P and Q with coordinates (xp, yp) and (xq, yq) respectively. */

```
#include<stdio.h>
#include<math.h>
```

```
void main()
{
 float m,a,xp,yp,xq,yq;

 printf("\nEnter x-coordinate of P point: ");
 scanf("%f",&xp);
 printf("\nEnter y-coordinate of P point: ");
 scanf("%f",&yp);
 printf("\nEnter x-coordinate of Q point: ");
 scanf("%f",&xq);
 printf("\nEnter y-coordinate of Q point: ");
 scanf("%f",&yq);

 m = (yq-yp)/(xq-xp);
 a= tanh(m);

 printf("\nSlope of a line: %f",m);
 printf("\nAngle of inclination: %f",a);
}
```

```
// Q42. Write a program to calculate the frequency (f) of a given wave with wavelength (?)
//       and speed (c), where c=?*f.

#include<stdio.h>
void main()
{
 float f,c,w;
 printf("\nEnter the wavelength of wave: ");
 scanf("%f",&w);
 printf("\nEnter the speed of wave: ");
 scanf("%f",&c);
 f=c/w;
 printf("\nFrequency of wave: %.2f",f);
}
```

```
/* Q43. A car travelling at 30 m/s accelerates steadily at 5 m/s2 for a distance of 70 m. What
```

is the final velocity of the car? [Hint: v2 = u2 + 2as] */

```
#include<stdio.h>
#include<math.h>
void main()
{
 float v;
 int u=30,a=5,s=70;
 v=sqrt(u*u + 2*a*s);
 printf("\nFinal velocity of car: %.2f m/s",v);
}
```

/* Q44. A horse accelerates steadily from rest at 4 m/s2 for 3s.
(a) What is its final velocity?
(b) How far has it travelled?
[Hint: (a) v = u + at (b) s = ut + at2] */

```
#include<stdio.h>
void main()
{
 float v,s;
 int u=0,a=4,t=3;
 s=u*t+a*t*t/2;
 v=u+a*t;
 printf("\nAcceleration of horse: %d",a);
 printf("\nInitial velocity of horse: %d",u);
 printf("\nFinal velocity of horse: %.2f m/s",v);
 printf("\nDistance travelled by horse: %.2f m",s);
}
```

// Q45. Write a C program to read an amount (integer value) and break the amount into
// smallest possible number of bank notes.

```
#include<stdio.h>
void main()
{
```

```
 int amt,a,b,c,d,e,f,g,h,i,j,k,l,m;
 printf("\nEnter amount: ");
 scanf("%d",&amt);

 a=amt/2000;
 b=amt%2000;
 c=b/500;
 d=b%500;
 e=d/100;
 f=d%100;
 g=f/50;
 h=f%50;
 i=h/10;
 j=h%10;
 k=j/5;
 l=j%5;
 m=l/1;

 if(a!=0)
 printf("2000 Rs notes: %d",a);
 if(c!=0)
 printf("\n500 Rs notes: %d",c);
 if(e!=0)
 printf("\n100 Rs notes: %d",e);
 if(g!=0)
 printf("\n50 Rs notes: %d",g);
 if(i!=0)
 printf("\n10 Rs notes: %d",i);
 if(k!=0)
 printf("\n5 Rs notes: %d",k);
 if(m!=0)
 printf("\n1 Rs notes: %d",m);
}
```

/* Q46. Write a C program to convert a given integer (in seconds) to hours, minutes and seconds. */

```
#include<stdio.h>
void main()
```

```
{

 int x,b=0,h=0,s=0,m=0;
 printf("Enter the seconds: ");
 scanf("%d",&x);

 if(x >= 60)
 {
    m = x / 60;
    s = x % 60;
    if(m >= 60)
     {
        h = m / 60;
        m = m % 60;
         printf("\nConversion of %d seconds in (Hours,Minutes,Seconds): %d hours %d minutes %d seconds",x,h,m,s);
     }
    else
        printf("\nConversion of %d seconds in (Hours,Minutes,Seconds): %d minutes %d seconds",x,m,s);
 }
 else
  printf("\nConversion of %d seconds in (Hours,Minutes,Seconds): %d seconds",x);


}
```

```
/* Q47. Write a C program to convert a given integer (in days) to years, months and days,
assumes that all months have 30 days and all years have 365 days. */

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

 int x,b=0,y=0,d=0,m=0;
 printf("Enter the days: ");
 scanf("%d",&x);

 if(x>30 && x<365)
 {
```

```
    m = x / 30;
    d = x % 30;
   printf("\nConversion of %d days in (Year,Month,Days): %d months %d days",x,m,d);
}
else
 {
   if(x >= 365)
     {
        y = x / 365;
        b = x % 365;
        if(b > 30)
          {
             m = b / 30;
             d = b % 30;
                 printf("\nConversion of %d days in (Year,Month,Days): %d years %d months %d
days",x,y,m,d);
          }
        else
                 printf("\nConversion of %d days in (Year,Month,Days): %d years %d months %d
days",x,y,m,b);
     }

   else
      printf("\nConversion of %d days in (Year,Month,Days): %d days",x,x);
 }


}
```