**SOLUTION**

15. #include (stdio.h> - **#include <stdio.h>**

 int main() {

int counter, N; i, isPrime; **- int counter,N,I,isPrime;**

 printf(‘Enter a Number "); - **printf(“Enter a number”):**

scanf("%d", &N);

Printf("List of Prime Factors of %d ", N);

/\*Check for every number between 1 to N, whether it divides N \*/

for(counter = 2; conter <= N; counter++); {

 /\* If counter completely divides N, \* then it is a factor of N

if(N%counter=0) {

 /\* Check if counter is also a prime number \*/

 isPrime == 1;

 for(i = 2; i <=(counter/2); i++) {

 if(counter%i==0) {

 isPrime=0;

break }

}

if(isPrime==1)

 printf("%d ", counter); }

 return 0;

}

16.  **Operators** are the symbols which are used to perform logical and mathematical operations in a C program.

**Types of operators**

***Arithmetic operators:*** *These are used to perform mathematical calculations like addition, subtraction, multiplication, division and modulus*

***Assignment operators:*** *These are used to assign the values for the variables in C programs*

**Relational operators:** These operators are used to compare the value of two variables.

**Logical operators:** These operators are used to perform logical operations on the given two variables.

**Bit wise operators:** These operators are used to perform bit operations on given two variables.

**Conditional operators (ternary operators):** Conditional operators return one value if condition is true and returns another value is condition is false.

**Increment/decrement operators:** These operators are used to either increase or decrease the value of the variable by one.

**Special operators:** &, \*, sizeof( ) operators

17. #include <stdio.h>

#define P 100000

#define R 5

#define T 4

int main() {

 int I;

 I= (P\*R\*T)/100;

 printf("THE INTEREST AFTER 4YEARS is %d", I);

 return 0;

}

18. #include<stdio.h>

int main()

{

 int age,card,accredited,nationality;

//input age

 printf("Enter your age: ");

 scanf("%d",&age);

 printf("1. YES\n");

 printf("2. NO\n");

 printf("Do you have voter's card ");

 scanf("%d", &card);

 printf("1. YES\n");

 printf("2. NO\n");

 printf("Are you accredited: ");

 scanf("%d", &accredited);

 printf("1. Nigerian\n");

 printf("2. Other\n");

 printf("what is your nationality: ");

 scanf("%d", &nationality);

//check voting eligibility

 if (age>=18 && card== 1 && accredited==1 && nationality==1)

 {

 printf("VOTING STATUS: ELIGIBLE\n\a");

 }

 else if (age<=18 && card==2 && accredited==2 && nationality==2 )

{

 printf("VOTING STATUS: NOT ELIGIBLE\n\a");

 }

 else if (age>=17 && card==1 && accredited==1 && nationality==1 )

{

 printf("VOTING STATUS: NOT ELIGIBLE\n\a");;

 }

 else if (age>=17 && card==2 && accredited==2 && nationality==2 )

{

 printf("VOTING STATUS: NOT ELIGIBLE\n\a");

 }

 else {

 printf("Check the conditions for voting\n\a ");

 }

 return 0;

}

19. #include<stdio.h>

int main(){

float n,temp=45.0;

printf("ENTER NUMBER OF N\n");

scanf("%f",&n);

 if(n > temp) {

 printf("The patient is sick\n ");

}

if (n<temp){

 printf("The patient is not sick\n ");

return 0;

}

}

20.

21. #include<stdio.h>

#include<math.h>

#define P 1000530.00

#define R 0.03

int main(){

 double a,n;

 printf("(i) Enter the number of year = ");

 scanf("%lf",&n);

 a = P\* pow((1+R),n);

 printf("The amount after the year is = %lf", a);

 printf("\n(ii) Enter the number of year = ");

 scanf("%lf",&n);

 a = P\* pow((1+R),n);

 printf("The amount after the year is = %lf", a);

 printf("\n(iii) Enter the number of year = ");

 scanf("%lf",&n);

 a = P\* pow((1+R),n);

 printf("The amount after the year is = %lf", a);

 printf("\n(iv) Enter the number of year = ");

 scanf("%lf",&n);

 a = P\* pow((1+R),n);

 printf("The amount after the year is = %lf", a);

 printf("\n(v) Enter the number of year = ");

 scanf("%lf",&n);

 a = P\* pow((1+R),n);

 printf("The amount after the year is = %lf", a);

return 0;

}

22. #include<stdio.h>

#include<stdbool.h>

int main(){

 int A=30,B=10,C,D,E,F;

 bool True,False;

 C=(A < B ? 1 : 2 );

 D=(A==B? True : False);

 E=(B < A ? 5 : 1 );

 F=(A>=B ? 0 : 1 );

 printf("Value of A is %d\n",A);

 printf("Value of B is %d\n",B);

 printf("Value of C is %d\n",C);

 printf("Value of D is %d\n",D);

 printf("Value of E is %d\n",E);

 printf("Value of F is %d\n",F);

}

23. #include <math.h>

#include <stdio.h>

int main() {

 double a, b, c, discriminant, root1, root2, realPart, imagPart;

 printf("Enter coefficients a, b and c: ");

 scanf("%lf %lf %lf", &a, &b, &c);

 discriminant = b \* b - 4 \* a \* c;

 // for real and different roots

 if (discriminant > 0) {

 root1 = (-b + sqrt(discriminant)) / (2 \* a);

 root2 = (-b - sqrt(discriminant)) / (2 \* a);

 printf("root1 = %.2lf and root2 = %.2lf", root1, root2);

 }

 // for real and equal roots

 else if (discriminant == 0) {

 root1 = root2 = -b / (2 \* a);

 printf("root1 = root2 = %.2lf;", root1);

 }

 // if roots are not real

 else {

 realPart = -b / (2 \* a);

 imagPart = sqrt(-discriminant) / (2 \* a);

 printf("root1 = %.2lf+%.2lfi and root2 = %.2f-%.2fi", realPart, imagPart, realPart, imagPart);

 }

 return 0;

}

24. #include <stdio.h>

 int main(){

 int A=80,B=50,sum,prod,difference, mod;

 double division;

 sum= A+B;

 prod= A\*B;

 difference= A-B;

 division= (double) A /(double) B;

 mod=A%B;

 printf("THE SUM IS %d" ,sum);

 printf("\nTHE PRODUCT Is %d",prod);

 printf("\nTHE DIFFERENCE Is %d", difference);

 printf("\nTHE DIVISION IS %.1lf",division);

 printf("/nTHE REMAINDER IS %d",mod);

 }

25. #include<stdio.h>

#include<conio.h>

int main() {

 printf("\*\*\*\*\*\*\* \*\*\* \*\*\* \*\*\*\*\*\*\*");

 }

26.

#include<stdio.h>

int main() {

printf("\*\*\*\*\*\*\*\*\*\*\*\* ");

printf(" \*\*\* ");

printf("\*\*\* ");

printf(" \*\* ");

printf(" \*\*\* ");

printf(" \*\* ");

printf(" \* ");

printf("\*\*\*\*\*\*\*\*\*\*\*\* ");

}

27. # include <stdio.h>

int main ()

{

 int A;

 float B;

 double C;

 //input

 printf("Input integer, float and values:\n ");

 scanf ("%d%f%lf", &A, &B, &C);

 //print

 printf ("Integer value: %d\n", A) ;

 printf ("Float value: %f\n", B) ;

 printf ("Double value: %lf\n", C) ;

 return 0;

}