**MODULE: SE – Fundamentals of Programming**

* **Basic Syntax**
* **Data Structures**
* **Variables**
* **Operators**

**Que.1 Display This Information using printf**

**a. Your Name**

**b. Your Birth date**

**c. Your Age**

**d. Your Address**

#include <stdio.h>

int main() {

char name[50],add[100];

int date,month,year,age;

printf("Enter your Name = ");

scanf("%s", &name);

printf("Enter your Birthdate in DD-MM-YYYY = ");

scanf("%d %d %d", &date,&month,&year);

printf("Enter your age = ");

scanf("%d", &age);

printf("Enter your Address = ");

scanf("%s", &add);

printf("============================================\n");

printf("\nName = %s ", name);

printf("\nBirthdate in %d-%d-%d = ", date, month, year);

printf("\nAge = %d", age);

printf("\nAddress =%s ", add);

return 0;

}

**Que.2 Write a program to make Simple calculator (to make addition, subtraction, multiplication, division and modulo)**

#include <stdio.h>

int main() {

int num1,num2,op,total;

printf("Enter the first operand\n");

scanf("%d",&num1);

printf("Enter the secon operand\n");

scanf("%d",&num2);

printf("select the operation\nPress 1 => Addition\nPress 2 => Subtraction\nPress 3 => Multiplication\nPress 4 => Division\nPress 5 => Modulo");

scanf("%d",&op);

if(op==1){

total=num1+num2;

printf("Your Answer is = %d", total);

}

if(op==2){

total=num1-num2;

printf("Your Answer is = %d", total);

}

if(op==3){

total=num1\*num2;

printf("Your Answer is = %d", total);

}

if(op==4){

total=num1/num2;

printf("Your Answer is = %d", total);

}

if(op==5){

total=num1%num2;

printf("Your Answer is = %d", total);

}

return 0;

}

**Que.3 WAP to Find Area And Circumference of Circle**

#include<stdio.h>

int main()

{

float radius, area, cf;

printf("Enter Radius of Circle\n");

scanf("%f",&radius);

area=3.14\*radius\*radius;

printf("The area of Circle is %f",area);

cf=2\*3.14\*radius;

printf("\nThe Circumference of Circle is %f",cf);

}

**Que.4 Find Area of Square formula : a = a2**

#include<stdio.h>

int main()

{

float side,area;

printf("\n Enter the Length of Side : ");

scanf("%f",&side);

area = side \* side ;

printf("\n Area of Square : %f",area);

}

**Que.5 Find Area of Cube formula : a = 6a2**

#include <stdio.h>

int main() {

float sideLen, surface;

printf("Enter the side length of the cube: ");

scanf("%f", &sideLen);

surface = 6 \* sideLen \* sideLen;

printf("The surface area of the cube is: %.2f\n", surface);

return 0;

}

**Que.6 Find area of Triangle Formula : A = 1/2 × b × h**

#include <stdio.h>

int main() {

float base, height, area;

printf("Enter the base of the triangle: ");

scanf("%f", &base);

printf("Enter the height of the triangle: ");

scanf("%f", &height);

area = (base \* height)/2;

// area = 1/2 \* base \* height;

printf("The area of the triangle is: %.2f\n", area);

return 0;

}

**Que.7 Find area of Rectangle Formula : A=wl**

#include <stdio.h>

int main() {

float length, width, area;

printf("Enter the length of the rectangle: ");

scanf("%f", &length);

printf("Enter the width of the rectangle: ");

scanf("%f", &width);

area = length \* width;

printf("The area of the rectangle is: %f\n", area);

return 0;

}

**Que.8 Find circumference of Rectangle formula : C = 4 \* a**

#include <stdio.h>

int main() {

int a;

float c;

printf("Enter value of a");

scanf("%d",&a);

c=4\*a;

printf("Circumference of Rectangle %f",c);

return 0;

}

**Que.9 Find circumference of Triangle formula : triangle = a + b + c**

#include <stdio.h>

int main() {

int a,b,c;

float tri;

printf("Enter value of Perpendicular");

scanf("%d",&a);

printf("Enter value of Base");

scanf("%d",&b);

printf("Enter value of Hypotenuse of the right triangle");

scanf("%d",&c);

tri=a+b+c;

printf("Circumference of Tringle %f",tri);

return 0;

}

**Que.10 find the area of a rectangular prism formula : A=2(wl+hl+hw)**

#include <stdio.h>

int main() {

int l,w,h;

int a;

printf("Enter length ");

scanf("%d",&l);

printf("Enter value of width ");

scanf("%d",&w);

printf("Enter value of hight ");

scanf("%d",&h);

a = 2 \* ((w\*l)+(h\*l)+(h\*w));

printf("area of a rectangular prism %d",a);

return 0;

}

**Que.11 Find circumference of square formula : C = 4 \* a**

#include <stdio.h>

int main() {

float sideLen, perimeter;

printf("Enter the side length of the square: ");

scanf("%f", &sideLen);

perimeter = 4 \* sideLen;

printf("The perimeter of the square is: %.2f\n", perimeter);

return 0;

}

**Que.12 Accept number of students from user. I need to give 5 apples to each student. How many apples are required?**

#include <stdio.h>

int main() {

int stu,total;

int a=5;

printf("Enter the total no of Students ");

scanf("%d",&stu);

total=stu\*a;

printf("Total no of Apple required = %d",total);

return 0;

}

**Que.13 Find character value from ascii**

#include <stdio.h>

int main() {

char c;

printf("Enter the character ");

scanf("%c",&c);

printf("ASCII value of %c is %d", c, c);

return 0;

}

**Que.14 Find ascii value of given number**

#include <stdio.h>

int main() {

int n=1;

printf("Enter the number ");

scanf("%d",&n);

printf("ASCII value of %d is %d", n,n+48);

return 0;

}

**Que.15 Convert school’s name in abbreviated form**

#include <stdio.h>

int main()

{

char fname[20] ;

char mname[20] ;

char lname[20] ;

printf("Enter full School name (first middle last):");

scanf("%s %s %s", fname, mname, lname);

printf("Abbreviated name: %c. %c. %s\n", fname[0] , mname[0] , lname);

return 0;

}

**Que.16 Convert country’s name in abbreviate form**

#include <stdio.h>

int main()

{

char fname[20];

char lname[20];

printf("Enter Country Name (first last):");

scanf("%s %s", fname, lname);

printf("Abbreviated name: %c. %c\n", fname[0], lname[0]);

return 0;

}

**Que.17 Calculate person’s insurance premium based on salary Topics Covered Control statements Conditional Statements**

#include <stdio.h>

int main() {

float salary, premium;

printf("Enter the salary : ");

scanf("%f", &salary);

if (salary <= 20000) {

premium = 0.05 \* salary;

} else if (salary <= 40000) {

premium = 0.07 \* salary;

} else if (salary <= 60000) {

premium = 0.10 \* salary;

} else {

premium = 0.12 \* salary;

}

printf("The insurance premium for a salary of Rs.%.2f is Rs.%.2f\n", salary, premium);

return 0;

}

**Que.18 Calculate person’s Annual salary**

#include <stdio.h>

int main()

{

float msal,aSal;

printf("Enter your monthly Salary:");

scanf("%f", & msal);

aSal= msal\*12;

printf("Annual Salary: %f is = ", aSal);

return 0;

}

**Que.19 Calculate compound interest**

#include <stdio.h>

#include <math.h>

int main()

{

float principal = 10000;

float rate = 5;

float time = 2;

float Amount = principal \* ((pow((1 + rate / 100), time)));

float CI = Amount - principal;

printf("Compound Interest is : %lf",CI);

return 0;

}

**Que.20 Accept monthly salary from the user and deduct 10% insurance premium, 10% loan installment find out of remaining salary.**

#include <stdio.h>

int main()

{

float salary,instl,emi,netSal;

printf("Enter your Monthly Salary");

scanf("%f",&salary);

instl=(10\*salary)/100;

emi=(10\*salary)/100;

netSal=salary-(instl+emi);

printf("Net Salary is : %f",netSal);

return 0;

}

**Que.21 Accept 2 numbers from user and swap 2 numbers with using 3rd variable and without using 3rd variable**

#include<stdio.h>

int main()

{

int a=10, b=20;

printf("Before swap a=%d b=%d",a,b);

a=a+b;

b=a-b;

a=a-b;

printf("\nAfter swap a=%d b=%d",a,b);

return 0;

}

**Que.22 Calculate compound interest (Compound Interest formula: a. Formula to calculate compound interest annually is given by: Amount= P(1 + R/100)t b. Compound Interest = Amount – P**

#include <stdio.h>

#include <math.h>

int main()

{

float principal = 10000;

float rate = 5;

float time = 2;

float Amount = principal \* ((pow((1 + rate / 100), time)));

float CI = Amount - principal;

printf("Compound Interest is : %lf",CI);

return 0;

}

**Que.23 WAP to calculate swap 2 numbers with using of multiplication and division.**

#include <stdio.h>

int main()

{

int a, b;

printf("Enter 1st integer numbers\n");

scanf("%d", &a);

printf("Enter 2nd integer numbers\n");

scanf("%d", &b);

a = a \* b;

b = a / b;

a = a / b;

printf("After swapping a = %d and b = %d\n", a ,b);

return 0;

}

**Que.24 Accept 5 employees name and salary and count average and total salary**

#include <stdio.h>

int main()

{

int a, b, c, d, e;

int total;

float avg;

printf("Enter the Salary of 5 Employee\n");

scanf("%d %d %d %d %d", &a, &b, &c, &d, &e);

total = a+b+c+d+e;

avg= total/5;

printf("Total salary %d\n", total);

printf("Average Salary %f =", avg);

return 0;

}

**Que.25 Accept 5 expense from user and find average of expense**

#include <stdio.h>

int main()

{

float a, b, c, d, e;

float avg,total;

printf("Enter the 5 transaction of Expenses\n");

scanf("%f %f %f %f %f", &a, &b, &c, &d, &e);

total = a+b+c+d+e;

avg= total/5;

printf("Average Expense %f =", avg);

return 0;

}

**Que.26 Convert temperature Fahrenheit to Celsius**

#include <stdio.h>

int main()

{

float celsius, fahrenheit;

printf("Enter temperature in Celsius: ");

scanf("%f", &celsius);

fahrenheit = (celsius \* 9 / 5) + 32;

printf("Temperature in Fahrenheit: %.2f\n", fahrenheit);

return 0;

}

**Que27 Convert days into months**

#include <stdio.h>

void main()

{

int ndays, year, week, days;

int d = 7;

printf("Enter the number of days\n");

scanf("%d", &ndays);

year = ndays / 365;

week =(ndays % 365) / d;

days =(ndays % 365) % d;

printf ("%d is equal to %d years, %d weeks and %d days", ndays, year, week, days);

}

**Que.28 Convert years into days and months**

#include <stdio.h>

void main()

{

int days, year,month;

printf("Enter the number of days\n");

scanf("%d", &year);

days= year\*365;

month= year\*12;

printf ("%d year is equal to %d month and %d days", year, month, days);

}

**Que.29 Convert minutes into seconds and hours**

#include <stdio.h>

void main()

{

float min, hrs, sec;

printf("Enter the number of minutes\n");

scanf("%f", &min);

hrs=min/60;

sec=min\*60;

printf ("%.2f Minutes equal to %.2f second and %.2f hours", min, sec, hrs);

}

**Que.30 WAP to convert years into days and days into years**

#include <stdio.h>

void main()

{

int days, year,month,choice,week,d;

printf("Enter the which you want to convert\n1.year into days\n2. days into year");

scanf("%d", &choice);

if(choice == 1)

{

printf("Enter the year");

scanf("%d", &year);

days= year\*365;

printf ("%d year is equal to %d month ", year, days);

}

else{

printf("Enter the days");

scanf("%d", &days);

year = days/365;

week = (days % 365)/7;

d = days - ((year\*365) + (week\*7));

printf ("%d days is equal to %d year and %d day ", days, year, d);

}

}

**Que.31 Convert kilometers into meters**

#include<stdio.h>

int main()

{

float km, m;

printf("Enter distance in kilometer: ");

scanf("%f", &km);

m = km \* 1000;

printf("%0.2f Kilometer = %0.2f Meter", km, m);

return 0;

}

**Que.32 Accept 2 numbers and find out its sum check it size**

#include <stdio.h>

int main()

{

int sum, n1, n2;

printf("Enter the No.1:");

scanf("%d", &n1);

printf("Enter the No.2:");

scanf("%d", &n2);

sum= n1+n2;

printf("Sum of 2 Numbers is %d\n", sum);

printf("Size of Sum is = %d bytes", sizeof(sum));

return 0;

}

**Que.33 C Program to Read Integer and Print First Three Powers (N^1, N^2, N^3)**

#include <stdio.h>

#include <math.h>

int main()

{

int num, a, b, c;

printf("\nEnter The Number .\n");

scanf("%d", &num);

a = pow(num, 1);

b = pow(num, 2);

c = pow(num, 3);

printf("\nOutput Is\n\n");

printf("%d, %d, %d \n\n", a, b, c);

return 0;}