**C++ Practice Questions**

**Q1:- Print positive numbers enter by user, if negative then come out of the control statement.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    signed long num1 = 0;

    cout << " Input a number : ";

    cin >> num1;

    if(num1 > 0)

    {

        cout << " The entered number is positive.\n\n";

    }

    else

    {

        cout << "False";

    }

    return 0;

}

**Q2:- Print the absolute number given by the user. ()**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int x;

    cout << "Enter any number:";

    cin >> x;

    if (x > 0)

        cout << "The absolute value of no. is: " << x;

    else

        cout << "The absolute value of no. is: " << -(x);

    return 0;

}

**Q3:- Shop will give discount of 10% if the cost quantity is greater than 1000, print the total cost.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int cost;

    cout<< "enter the cost.";

    cin>> cost;

    if (cost>1000)

    {

        cost=cost-0.1\*cost;

        cout<< cost;

    }

    else{

        cout<<cost;

    }

    return 0;

}

**Q4:- A school has following rules for grading system: a) Below 25 – F. b) 25 to 45 – E. c) 45 to 50 – D. d) 50 to 60 – C. e) 60 to 80 – B. f) Above 80 – A. Ask user to enter marks and print the corresponding grade.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    signed long num1 = 0;

    cout << " Enter your marks : ";

    cin >> num1;

    if(num1 >= 80)

    {

        cout << " Grade A\n\n";

    }

    else if(num1 >= 60 and num1<80){

        cout << " Grade B\n\n";

    }

    else if(num1 >= 50 and num1<60){

        cout << " Grade C\n\n";

    }

    else if(num1 >= 45 and num1<50){

        cout << " Grade D\n\n";

    }

    else if(num1 >= 25 and num1<45){

        cout << " Grade E\n\n";

    }

    else

    {

        cout << "F";

    }

    return 0;

}

**Q5:- Give age of person as input. Then print priority of covid vaccination according their age:**

**Age<18 minor not eligible**

**Age<60 Eligible for vaccination with highest priority.**

**18<Age<60 Eligible for vaccination with least priority.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    signed long num1 = 0;

    cout << " Enter your Age : ";

    cin >> num1;

    if(num1 >= 60)

    {

        cout << " Eligible for vaccination with highest priority\n\n";

    }

    else if(num1 >= 18 and num1<60){

        cout << "Eligible for vaccination with least priority\n\n";

    }

    else if(num1<18){

        cout << "minor not eligible\n\n";

    }

    else

    {

        cout << "Wrong Input";

    }

    return 0;

}

**Q6:- Nested If: If students pointer in between**

**9-10 print student grade is “A+”**

**8-9 print student grade is “A”**

**7-8 print student grade is “B+”**

**6-7 print student grade is “B”**

**5-6 print student grade is “C”**

**4-5 print student grade is “D”**

**Else print student failed.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    signed long num1 = 0;

    cout << " Enter your marks : ";

    cin >> num1;

    if(num1 > 9 and num1<10)

    {

        cout << " Grade A+\n\n";

    }

    else if(num1 >8  and num1<=9){

        cout << " Grade A\n\n";

    }

    else if(num1 > 7 and num1<=8){

        cout << " Grade B+\n\n";

    }

    else if(num1 > 6 and num1<=7){

        cout << " Grade B\n\n";

    }

    else if(num1 > 5 and num1<=6){

        cout << " Grade C\n\n";

    }

    else if(num1 > 4 and num1<=5){

        cout << " Grade D\n\n";

    }

    else if(num1 > 0 and num1<=4){

        cout << " Failed\n\n";

    }

    else

    {

        cout << "False input";

    }

    return 0;

}

**Q7:- Check whether a character is an uppercase or lowercase alphabet.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    char x;

    cout << "Enter any character: ";

    cin >> x;

    if (x >= 'A' && x <= 'Z')

        cout << x << " is an UpperCase character\n";

    else if (x >= 'a' && x <= 'z')

        cout << x << " is an LowerCase character\n";

    else

        cout << x << " is not an aplhabetic character\n";

    return 0;

}

**Q8:- Input day number and print weekday.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int day;

    cout << "Enter day number: ";

    cin >> day;

    if (day == 1)

        cout << "Monday";

    else if (day == 2)

        cout << "Tuesday";

    else if (day == 3)

        cout << "Wednesday";

    else if (day == 4)

        cout << "Thursday";

    else if (day == 5)

        cout << "Friday";

    else if (day == 6)

        cout << "Saturday";

    else if (day == 7)

        cout << "Sunday";

    else

        cout << "The number is invalid";

}

**Q9:- Write a C++ program to check if a given positive number is a multiple of 3 or a multiple of 7.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int x;

    cout << "Enter any number: ";

    cin >> x;

    if (x % 7 == 0)

        cout << x << " is a multiple of 7\n";

    else if (x % 3 == 0)

        cout << x << " is a multiple of 3\n";

    else

        cout << x << " False\n";

    return 0;

}

**Q10: Write a C++ program to check the largest number among three given integers.**

Ans:

#include <iostream>

using namespace std;

int main() {

    float x, y, z;

    cout << "Enter three numbers: ";

    cin >> x >> y >> z;

    if(x >= y && x >= z)

        cout << "Largest number is : " << x;

    if(y >= x && y >= z)

        cout << "Largest number is : " << y;

    if(z >= x && z >= y)

        cout << "Largest number is : " << z;

    return 0;

}

**Q11: Write a program in C++ to find the factorial of a number.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int i, fact = 1, x;

    cout << "Enter any Number: ";

    cin >> x;

    for (i = 1; i <= x; i++)

    {

        fact = fact \* i;

    }

    cout << "Factorial of " << x << " is: " << fact << endl;

    return 0;

}

**Q12: Write a program in C++ to find the sum of digits of a given number.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int x, s = 0;

    cout << "Enter the number : ";

    cin >> x;

    while (x != 0)

    {

        s = s + x % 10;

        x = x / 10;

    }

    cout << "\nThe sum of the digits : " << s;

}

**Q13: Write a program in C++ to calculate the sum of the series (1\*1) + (2\*2) + (3\*3) + (4\*4) + (5\*5) + ... + (n\*n).**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int i, n, sum = 0;

    cout << " Input the value for nth term: ";

    cin >> n;

    for (i = 1; i <= n; i++)

    {

        sum += i \* i;

        cout << i << "\*" << i << " = " << i \* i << endl;

    }

    cout << " The sum of the series is: " << sum << endl;

}

**Q14: Program to count the total number of notes in a given amount.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int amount;

    int note1, note2, note5, note10, note20, note50, note100, note500;

    note1 = note2 = note5 = note10 = note20 = note50 = note100 = note500 = 0;

    cout << "Enter amount: ";

    cin >> amount;

    if (amount >= 500)

    {

        note500 = amount / 500;

        amount -= note500 \* 500;

    }

    if (amount >= 100)

    {

        note100 = amount / 100;

        amount -= note100 \* 100;

    }

    if (amount >= 50)

    {

        note50 = amount / 50;

        amount -= note50 \* 50;

    }

    if (amount >= 20)

    {

        note20 = amount / 20;

        amount -= note20 \* 20;

    }

    if (amount >= 10)

    {

        note10 = amount / 10;

        amount -= note10 \* 10;

    }

    if (amount >= 5)

    {

        note5 = amount / 5;

        amount -= note5 \* 5;

    }

    if (amount >= 2)

    {

        note2 = amount / 2;

        amount -= note2 \* 2;

    }

    if (amount >= 1)

    {

        note1 = amount;

    }

    cout << "Total number of notes" << endl;

    cout << "500 = " << note500 << endl;

    cout << "100 = " << note100 << endl;

    cout << "50 = " << note50 << endl;

    cout << "20 = " << note20 << endl;

    cout << "10 = " << note10 << endl;

    cout << "5 = " << note5 << endl;

    cout << "2 = " << note2 << endl;

    cout << "1 = " << note1 << endl;

    return 0;

}

**Q15: Program to take a value from the user as input the angles of a triangle and check whether the triangle is valid or not.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int a;

    int b;

    int c;

    cout << "Enter three angles of the triangle" << endl;

    cin >> a >> b >> c;

    int sum = a + b + c;

    if (sum == 180 && a != 0 && b != 0 && c != 0)

    {

        cout << "It is a valid triangle" << endl;

    }

    else

    {

        cout << "It is not a valid triangle" << endl;

    }

return 0;

}

**Q16: Program to check whether the triangle is an equilateral, isosceles or scalene triangle.\**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int side1, side2, side3;

    cout << "Enter Three Sides of a Triangle:  ";

    cin >> side1 >> side2 >> side3;

    if (side1 == side2 && side2 == side3)

    {

        cout << "\nThis is an Equilateral Triangle";

    }

    else if (side1 == side2 || side2 == side3 || side1 == side3)

    {

        cout << "\nThis is an Isosceles Triangle";

    }

    else

        cout << "\nThis is a Scalene Triangle";

    return 0;

}

**Q17: Program to take a value from the to take a value from the user as input  marks of five subjects Physics, Chemistry, Biology, Mathematics, and Computer.**

**Calculate percentage and grade according to the following:**

**Percentage >= 90% : Grade A, Percentage >= 80% : Grade B, Percentage >= 70% : Grade C, Percentage >= 60% : Grade D, Percentage >= 40% : Grade E, Percentage < 40% : Grade F, Write this program with the help of  if-else statement.**

Ans:

#include <iostream>

using namespace std;

int main()

{

    int a,b,c,d,e = 0;

    cout << " Enter your physics marks : ";

    cin >> a;

    cout << " Enter your chemistry marks : ";

    cin >> b;

    cout << " Enter your biology marks : ";

    cin >> c;

    cout << " Enter your mathematics marks : ";

    cin >> d;

    cout << " Enter your computer marks : ";

    cin >> e;

    int perc = (a+b+c+d+e) / 5;

    cout << "You scored " << perc <<"%"<< endl;

    if(perc >= 90 && perc < 100)

    {

        cout << "Grade A\n\n";

    }

    else if(perc >= 80 && perc < 90){

        cout << "Grade B\n\n";

    }

    else if(perc >= 70 && perc < 80){

        cout << "Grade C\n\n";

    }

    else if(perc >= 60 && perc < 70){

        cout << "Grade D\n\n";

    }

    else if(perc >= 40 && perc < 60){

        cout << "Grade E\n\n";

    }

    else if(perc >= 0 and perc < 40){

        cout << "Grade F\n\n";

    }

    else

    {

        cout << "False input";

    }

    return 0;

}

**Q18: Program to take a value from the user as input any character and check whether it is the alphabet, digit or special character.**

Ans:

#include<iostream>

using namespace std;

int main()

{

    char x;

    cout << "Enter any character: ";

    cin >> x;

    if((x >= 'a' && x <= 'z') || (x >= 'A' && x <= 'Z'))

    {

        cout << x << " is an Alphabet";

    }

    else if(x >= '0' && x <= '9')

    {

        cout << x << " is a Digit";

    }

    else

    {

        cout << x << " is a Special Character";

    }

    return 0;

}