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;
}
```