Practical 2

ARSHITA 21115024

Question 1

```
#include<iostream>
using namespace std;
int main()
{
    double fahrenheit;
    double celsius;
    cout<<"enter fahrenheit value"<<endl;
    cin>>fahrenheit;
    cout<<"enter celsius value"<<endl;
    cin>>celsius;
    //converting fahrenheit into celsius
    double celsius1=((fahrenheit-32)*5)/9;
    //converting cesius into fahrenheit
    double fahrenheit1=(celsius*9)/5+32;
    cout<<celsius1<<endl;
    cout<<fahrenheit1;
}
```

Question 2

```
#include<iostream>
using namespace std;
int main()
{
    int a;
    int b;
    cout<<"Enter first number"<<endl;
    cin>>a;
    cout<<"Enter second number"<<endl;
    cin>>b;
    //swapping
    int c=a;
    a=b;
    b=c;
    //printing swapped values
    cout<<a<<endl<<b;
}
```

Question 3

```
#include<iostream>
using namespace std;
int main()
{
    int n;
    cin>>n;
    if(n==0)
    {
        cout<<1;
    }
    else if(n<0)
    {
        cout<<"Factorial doesn't exist";
    }
    else
    {
        int fact=1;
        for(int i=n;i>=1;i--)
        {
            fact=fact*i;
        }
        //printing Factorialcout<<fact;
        cout<<fact;
    }
    }
```

Question 4

```
#include<iostream>
using namespace std;
int main()
{
    for(int i=65;i<=90;)
    {
        int count=1;
        while(count<=5)
        {
            char c=(char)i;
            cout<<c<<"\t";
            count++;
            i++;
```

```
        }
        cout<<endl;
    }}
```

Question 5

(i)

```
#include<iostream>
#include<cmath>
using namespace std;
int main()
{
    //let the quadratic equation be ax^2+bx+c=0
    double a;
    double b;
    double c;
    cin>>a>>b>>c;
    double root1;
    double root2;
    double d=(b*b)-4*a*c;
    if(a==0)
    {
        cout<<"Not a Quadratic Equation";

    }
    else if(d>=0)
    {
        double sqd=sqrt(d);
        root1=((-b)+sqd)/(2*a);
        root2=((-b)-sqd)/(2*a);
        cout<<"Roots are:"<<endl;
        cout<<root1<<root2;
    }
    else
    {
        d=(-1)*d;
        double sqd=sqrt(d);
        double real=(-b)/(2*a);
        double imag=sqd/(2*a);
        cout<<"Roots are:"<<endl;
        cout<<real;
        cout<<"+"<<imag<<"i"<<endl;
        cout<<real;
        cout<<"-"<<imag<<"i";
    }
    }
```

Question 5
(ii)

```
#include<iostream>
#include<cmath>
using namespace std;
int main()
{
    //let the quadratic equation be ax^2+bx+e=0
    double a;
    double b;
    double e;
    cin>>a>>b>>e;
    double root1;
    double root2;
    double d=(b*b)-4*a*e;
    char r;
    double sqd;

if(d==0)
{
    r='1';
}
else if(d>0)
{
    r='2';
}
else
{
    r='3';
}
switch(r)
{
    case '1':
    cout<<"Roots are equal and are equal to:"<<endl;
    cout<<((-b)/(2*a));
    break;
    case '2':

         sqd=sqrt(d);
        root1=((-b)+sqd)/(2*a);
        root2=((-b)-sqd)/(2*a);
        cout<<"Roots are:"<<endl;
        cout<<root1<<root2;
        break;
        case '3':

        d=(-1)*d;
```

```
        double sqd1=sqrt(d);
        double real1=(-b)/(2*a);
        double imag1=sqd1/(2*a);
        cout<<"Roots are:"<<endl;
        cout<<real1;
        cout<<"+"<<imag1<<"i"<<endl;
        cout<<real1;
        cout<<"-"<<imag1<<"i";
        break;
    }
    return 0;
    }
```

Question 6

```
#include<iostream>
using namespace std;
int main()
{
    int n;
    cin>>n;
    int count=0;
    for(int i=2;i<n;i++)
    {
if(n%i==0)
{
    count++;
}

    }
    if((count==0)||n==2)
    {
        cout<<"Prime";
    }
    else
    {
        cout<<"Not Prime";
    }
}
```