IQRA NATIONAL UNIVERSITY

Department of Computer Science

Programming fundamental Lab

Name. : Ali Muqadas

ID. : 13131

Submitted to: Sir Dr. Fazl-e-Malik

Assignment: **Final paper**

Question # 01

Read A, B and C representing the three sides of a triangle. Write a program to find out its area the formula is given below:

$$Area = \sqrt{S(S-A)(S-B)(S-C)}$$

Where S=

Answer:

```
#include <bits/stdc++.h>
using namespace std;

float findArea(float a, float b, float c)
{
   if (a < 0 || b < 0 || c < 0 ||
      (a + b <= c) || a + c <= b ||
                  b + c <= a)
   {
      cout << "Not a valid trianglen";
      exit(0);
   }
   float s = (a + b + c) / 2;
   return sqrt(s * (s - a) *
               (s - b) * (s - c));
}
int main()
{
   float a = 3.0;
   float b = 4.0;
   float c = 5.0;

   cout << "Area is " << findArea(a, b, c);
   return 0;
}
```

Question # 02

Write a C++ program to get marks obtained by a student in percentage ***P*** and then find the division according to the below rules:

- If Percentage P is above or equal to 60 then display……..1st Division.

- If Percentage P is between 50 & 59 then display……2nd Division.
- If Percentage P is between 40 & 49 then display……3rd Division.
- If Percentage P is less than 40 then display……Fail.

Answer:

```
#include<iostream>
using namespace std;

int main()
{
	int sub1,percentage;
	cout<<"Enter marks ";
	cin>>sub1;
	percentage=(sub1)/1;

	if(percentage>=60)
		cout<<"Ist Division";
	else if(percentage>=50)
		cout<<"2nd Division";
	else if(percentage>=40)
		cout<<"3rd Division";
	else
		cout<<"Fail" ;


	return 0;
}
```

Question # 03

Write a C++ program to convert 5 feet to the equivalent number of (a) Inches (b) Yards. Where 1foot =12 Inches and 1 yard=3 feet)

Answer:

```
#include<iostream>
using namespace std;
int main()
{
int yard, feet, inch;
cout<<“Enter Inches :: “;
cin>>inch;

yard = inch/432;
inch %= 432;
feet = inch /12;
```

```
inch%=12;

cout<<" Yard :: "<<yard<<"\n Feet :: "<<feet<<"\n Inches :: "<<inch;

return 0;
}
```

Question # 04

Write a C++ program to find the sum of the following series:

2+4+6+8+10

Answer:

```
#include<iostream.h>
#include<conio.h>

void main()
{
clrscr();
int i,n,sum=0;
cout<<"1+2+3+……+n";
cout<<"nEnter the value of n:";
cin>>n;

for(i=1;i<=n;++i)
sum+=i;
cout<<"nSum="<<sum;
getch();
}
```

Question # 05

Write a C++ program to input Hours Worked and Hour Rate of an Employee. Calculate and display the Gross-Pay, Tax and Net-Pay; where

Gross-Pay=Hour-Worked*Hour-Rate

Tax=10% of Gross-Pay

Net-Pay=Gross-Pay – Tax

Answer:

```
#include <iostream>

#include <iomanip>
```

```
using namespace std;

const int   STD_HRS       = 40;
const float OVERTIME_MULT = 1.5;

int main()
{
  cout << fixed << showpoint;
  cout << setprecision(2);
  float hours, rate;
  cout << "Enter hours worked: ";
  cin  >> hours;
  cout << "Enter rate: ";
  cin  >> rate;
  float regular, overtime;
  if ( hours <= STD_HRS )
  {
    regular  = hours * rate;
    overtime = 0.0;
  }
  else
  {
    regular  = STD_HRS * rate;
    overtime = (hours - STD_HRS) * rate * OVERTIME_MULT;
  }
  float pay;
  pay = regular + overtime;
  cout << "Pay: $" << pay << endl;
  return 0;
}
```