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**Iqra National University Peshawar Pakistan**

**Department of Computer Science**

Spring Semester, Final Term Exam, July 2020

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| Paper : | **Programming Fundamentals (Lab)** | Date and Starting Time: | **09/July/2020, 09:00 am** |
| Program: | **BS (CS & SE)** | Uploading Date and End Time: | **09/July/2020, 3:00 pm** |
| Teacher Name: | **Dr. Fazal-e-Malik** | Marks | **100** |

**Note: Attempt all Questions.**

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| **NAME** | **Moazzam**  **Ajmal** | **Submit DATE**  **9/July/2020** |
| **I'D** | **16977** | **PROGRAMMING FUNDAMENTALS (LAB)** |
| **BS** | **Cs** | **SUBMIT TO SIR**  **Dr.FAZAL-E-MALIK** |

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| --- | --- |
| Q. 1 | 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:  Where S= |

Program

1#include <bits/stdc++.h>

using namespace std;

float findArea(float a, float b, float c)

{

// Length of sides must be positive

// and sum of any two sides

// must be smaller than third side.

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));

}

// Driver Code

int main()

{

float a = 3.0;

float b = 4.0;

float c = 5.0;

cout << "Area is " << findArea(a, b, c);

return 0;

}

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| Q. 2 | 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 Pis 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. |

Program

#include <stdio.h>

int main()

{

int phy, chem, bio, math, comp;

float per;

/\* Input marks of five subjects from user \*/

printf("Enter five subjects marks: ");

scanf("%d%d%d%d%d", &phy, &chem, &bio, &math, &comp);

/\* Calculate percentage \*/

per = (phy + chem + bio + math + comp) / 5.0;

printf("Percentage = %.2f\n", per);

/\* Find division according to the percentage \*/

if(per >= 70)

{

printf("1st Division");

}

else if(per >= 60)

{

printf("2nd Division");

}

else if(per >= 50)

{

printf("3rd Division");

}

else if(per >= 40)

{

printf("Fail");

return 0;

}

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| --- | --- |
| Q. 3 | 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) |

Program

#include <iostream>

using namespace std;

int

main ()

{

int inches;

int feet;

int yards;

cout << "Number of Inches\n";

cin >> inches;

cout << "Number of Yards is\n";

yards = inches % 36;

cout << yards;

cout << "number of feet\n";

feet = inches % 12;

cout << feet;

cout << "number of inches\n";

cout << inches;

yards = inches / 36;

cout << yards;

return 0;

}

|  |  |
| --- | --- |
| Q.4 | Write a C++ program to find the sum of the following series:  **2+4+6+8+10** |

Program

#include <iostream>

using namespace std;

int main()

{

int i, n, sum = 0;

cout << "\n\n Find the sum of the series 2+4+6+8+10 (n+n):\n";

cout << "------------------------------------------------------------------------------------\n";

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 above series is: " << sum << endl;

}

|  |  |
| --- | --- |
| Q.5 | 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 |

Program

#include <iostream>

#include <stdio.h>

#include <stdlib.h>

using namespace std;

int

main ()

{

double hourly\_rate;

double hours;

double gross\_pay;

printf ("Please input the hourly rate of the employee: ");

cin >> hourly\_rate;

printf ("Please input the number of hours worked by the employee: ");

cin >> hours;

if (hours <= 40)

{

gross\_pay = hours \* hourly\_rate;

}

else

{

gross\_pay = (40 \* hourly\_rate) + (hours - 40) \* (hourly\_rate \* 1.5);

}

cout << "The gross pay of this employee is $" << gross\_pay << "." << endl;

system ("pause");

return 0;}

THE END

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