**Assignment on C++ Structure**

------------------------------------------------------------------------------------------------------------------------------------------

1. Give the output of the following program. Assuming all the desired header files are already included, which are required to run the code.

struct Pixel

{

int C, R;

};

void Display(Pixel P)

{

cout << "Col "<< P.C << " Row " << P.R << endl;

}

int main()

{

Pixel X = {40,50}, Y, Z;

Z = X;

X.C += 10;

Y = Z;

Y.C += 10;

Y.R += 20;

Z.C -= 15;

Display(X);

Display(Y);

Display(Z);

return 0;

}

Give the answer.

ANSWER:

Col 50 Row 50

Col 50 Row 70

Col 25 Row 50

------------------------------------------------------------------------------------------------------------------------------------------

2.Find the output of the following program. Assuming all the desired header files are already included, which are required to run the code.

struct Play

{

int score, bonus;

};

void calculate(Play &P, int N = 10)

{

P.score++;

P.bonus += N;

}

int main()

{

Play PL = {10, 15};

calculate(PL, 5);

cout << PL.score << ":" << PL.bonus << endl;

calculate(PL);

cout << PL.score << ":" << PL.bonus << endl;

calculate(PL, 15);

cout << PL.score << ":" << PL.bonus << endl;

return 0;

}

Give the answer.

ANSWER:

11:20

12:30

13:45

------------------------------------------------------------------------------------------------------------------------------------------

3. Find the output of the following program. Assuming all the desired header files are already included, which are required to run the code.

struct MyBox

{

int length, breadth, height;

};

void dimension (MyBox M)

{

cout << M.length << "x" << M.breadth << "x";

cout << M.height << endl;

}

int main ()

{

MyBox B1 = {10, 15, 5}, B2, B3;

++B1.height;

dimension(B1);

B3 = B1;

++B3.length;

B3.breadth++;

dimension(B3);

B2 = B3;

B2.height += 5;

B2.length--;

dimension(B2);

return 0;

}

Give the answer.

ANSWER:

10x15x6

11x16x6

10x16x11

------------------------------------------------------------------------------------------------------------------------------------------

4. Rewrite the following program after removing the syntactical errors (if any). Underline each correction.

struct Pixels

{

int color, style;

}

void showPoint(Pixels P)

{

cout << P.color, P.style << endl;

}

int main()

{

Pixels Point1 = (5, 3);

showPoint(Point1);

Pixels Point2 = Point1;

color.Point1 += 2;

showPoint(Point2);

return 0;

}

Give the answer.

#include<iostream>

using namespace std;

struct Pixels{

int color, style;

};

void showPoint(Pixels P){

cout<<P.color<<P.style<<endl;

}

int main(){

Pixels Point1 = {5, 3} ;

showPoint(Point1);

Pixels Point2 = Point1;

Point1.color += 2;

showPoint(Point2);

return 0;

}

------------------------------------------------------------------------------------------------------------------------------------------

5. Declare a structure to represent a complex number (a number having a real part and imaginary part). Write C++ functions to add, subtract, multiply and divide two complex numbers.

------------------------------------------------------------------------------------------------------------------------------------------

6. An array stores details of 25 students (rollno, name, marks in three subject). Write a program to create such an array and print out a list of students who have failed in more than one subject.

------------------------------------------------------------------------------------------------------------------------------------------

7. What should be output of below program? program is compiled on g++ compiler.

#include<iostream>

using namespace std;

struct student{

char a; char b; int c;

};

int main()

{

cout<<sizeof(student);

return 0;

}

Options:

(A) 4

(B) 6

(C) 8

(D) 12

Give the Answer: (C) 8

-------------------------------------------------------------------------------------------------------------------------------------

8. Which of the following statements assigns a value to the hourlyWage member of employee[2}?

Options:

(A) employee[2]->hourlyWage = 50.00;

(B) employee2.hourlyWage = 7.50;

(C) hourlyWage[2].employee = 29.75;

(D) employee[2].hourlyWage = 75.00;

Give the answer:

(D) employee[2].hourlyWage=75.00;

---------------------------------------------------------------------------------------------------------------------------------------

9. Which of the following statements outputs the value of the gpa member of element 1 of the student array?

Options:

(A) cout<<student1.gpa;

(B) cout<<firstStudent.gpa;

(C) cout<<student[1].gpa;

(D) cout<<student1 ->gpa;

Give the answer:

(C) cout<<student[1].gpa;

-------------------------------------------------------------------------------------------------------------------------------------

10. Which of the following statements outputs the value of the gpa member of element 1 of the student array?

Options:

(A) cout<<student1.gpa;

(B) cout<<firstStudent.gpa;

(C) cout<<student[1].gpa;

(D) cout<<student1 ->gpa;

Give the answer:

(C) cout<<student[1].gpa;

-------------------------------------------------------------------------------------------------------------------------------------