**Answer the following questions: (50 marks)**

**Please note that the exam is in two pages**

**Question 1: (15 marks)**

1. Write a program that prompts the user to enter two numbers and then displays the larger of the two numbers.
2. Write a program that prompts the user to choose a geometric shape (circle, rectangle, or triangle) and then calculates and displays the area of the chosen shape. Use a switch statement to handle the shape selection.
3. Write a program that prints the numbers from 1 to 20, but skips the numbers that are multiples of 5. Use the continue statement to skip the numbers that are divisible by 5

**Question 2: (10 marks)**

1. Write a program that checks how many times a function was called from the main program. To do this, we will use a static variable inside a function which will be incremented each time the function is called in main().
2. Write a function called Order that order two float values passed to it by the calling program. (Note that this function orders the values of the variables in the calling program, not those in the function). You’ll need to decide how to pass the arguments. Create a main() program to exercise the function.

**Question 3: (15 marks)**

1. Create a function called calculateAverage() that accepts a variable number of integer arguments and returns their average. In the main() function, demonstrate the use of this function by calculating the average of 5, 10, and 15. May be you can use array to pass input to the function.
2. Define a function findMax() that takes two integer arguments and returns the larger of the two. Overload this function to accept two double arguments and return the larger double. In the main() function, use both versions of the findMax() function to find the maximum of two integers and two doubles.
3. Raising a number *n* to a power *p* is the same as multiplying *n* by itself *p* times. Write a function called power() that takes a *double* value for *n* and an *int* value for *p*, and returns the result as a *double* value. Use a default argument of 2 for *p*, so that if this argument is omitted, the number n will be squared. Write a main() function that gets values from the user to test it.

**Question 4: (10 marks)**

1. Correct the following program so that it can compile without errors:

#include<iostream>

using namespace std;

class Counter

{

private:

unsigned int c=0;

public:

void DisplayCount(){cout<<c};

}

int main ()

{

Counter c1

c1.c=0;

c1.DisplayCount();

return 0;

}

1. Write a C++ function that takes from the user an array of five integer values then it finds the element with the largest value. It returns to the caller program the index of the largest element. Write a main program to test this function.
2. Assuming var1 starts with the value 80, what will the following code fragment print out?

cout << var1++;

cout << --var1;

Best Wishes,

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