This is a practice exam. The actual exam may be very different from this. Questions on this exam will likely not appear on the actual exam. Questions on the actual exam may not appear in this practice exam.

CS120 Computer Science I
First Exam
This is a closed note, closed book exam. It has five pages and seven problems.

1. (20 points) Fill in the blanks.

a) Conditional
b) Loop
c) Switch
d) Default
e) Break
f) Void
g) Library
h) Modulus
i) Integer

j) Double
k) Compiler
l) Executable
m) Argument
n) Return
o) Scope
p) Global

1) The keyword _____ is used to define the case in a switch statement that is not matched by any of the other cases.

2) A _____ is the programming construct that allows a program to repeat the same block of code until a specific condition is met.

3) A _____ is the programming construct that allows a program to execute or not execute a block of code depending on a condition.

4) A _____ is a program that translates a program written in a high level programming language into an executable program that a computer can run.

5) A _____ statement allows a function to pass an answer back to the main program.

6) The _____ of a variable defines where in a program the variable exists and can be accessed and used.

7) The keyword _____ is used to denote a function that doesn't return a value.

8) The _____ operator performs integer division and returns the remainder.

9) A _____ is a file consisting of code that is designed to be included and used in another program.

10) A _____ is a type of variable that can store numbers including a decimal value.

2. (20 points) Write the code to help young children learn about numbers. The user should be able to enter an integer and the program tells them about the integer. In particular the program should do the following:

a) get an integer value from the user
b) if the value is zero print "zero"
c) if the value is negative print "negative'
d) if the value is even print "even" (not including zero).
e) if the value is odd print "odd"

Note that the program may print several messages for the same number. For example, if a child enters -4, the program should print both "even" and print "negative".
The first part of the program is done for you:

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

int main(){
```

}

3. (8 points) What are the values of the following C++ expressions?

    a) 199/100

    b) 199.0/100

    c) 5 > 6 || 6 > 7

    d) 100 == 100 && 100 > 0

4. (16 points) Write a *function* called inputrange() to get an input value in a specified range from the user. The function should take two (integer) arguments. The first argument is the lowest acceptable value that the user can enter. The second argument is the highest acceptable value the user can enter. The function should return the value entered by the user, which is also an integer.
The function should begin by printing a message asking the user to enter a number in the correct range. If the user enters a value outside of the range the function should print a message and loop until the user enters an acceptable number. The prototype/declaration for the function is:

<p align="center">int inputrange(int, int)</p>

You only need to write the function code, you do not need to write main().

5. (10 points) What is printed by the following program?

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

int main(){
        int value;
        value = 1;
        while(value < 100){
                cout << value << endl;
                value = value * 2;
        }
}
```

6. (8 points) What does the following program print?

```cpp
#include<iostream>
using namespace std;
void function2(int);

int main(){
        int x = 7;
        function2(x);
        cout << x << endl;
}

void function2(int x);
{
        x = 9;
        cout << x << endl;
}
```

7. (18 points) Consider the following program:

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

double function1(double, double);

int main(){
        double x, y, b;
        cin >> x;
        cin >> y;
        b = function1(x,y);
        cout << x << " " << y " " << b << endl;
}

double function1(double a, double b);
{
        double x;
        if(a < b){
                x = a + b;
        }
        else{
                x = a – b;
        return x;
}
```

a) What is printed if the user enters the values 5.1 and 7.1, in that order?

b) What is printed if the user enters the values 5.1 and 5.1, in that order?