CS 161 - Final Exam Practice - Test 1

1. **F** T/F: Executable code is computer code that contains no errors.
2. **T** T/F: Syntax involves rules that must be followed when writing a program.
3. **T** T/F: If a new value is stored in a variable, it replaces whatever value was previously there.
4. **F** T/F: . Once a value has been stored in a variable it cannot be changed
5. **T** T/F: Assuming goodData is a Boolean variable, the following two tests are logically equivalent.
   if (goodData == false)
   if (!goodData)
6. **F** T/F: When a loop is nested inside another loop, the outer loop goes through all its iterations for each iteration of the inner loop.
7. **F** T/F: The following two C++ statements perform the same operation.
   regWages = regPay + overTime;
   regPay + overTime = regWages;
8. **T** T/F: C++ is a case-sensitive language.
9. **F** T/F: A variable of the char data type can hold a set of characters like "January".
10. **F** T/F: A boolean expression may evaluate to more than 2 values
11. **F** T/F: All nested if-else statements can be converted into switch statements.
12. **F** T/F: Variable names may begin with a number.
13. **F** T/F: A break statement in a switch stops your program.
14. **T** T/F: A semicolon by itself is a valid C++ statement.
15. **F** T/F: The break statement causes all loops to exit.
16. **F** T/F: . Every include directive must be followed by using namespace std;
17. **F** T/F: pow(2,3) is the same as pow(3,2).
18. **T** T/F: If the sub-expression on the left side of an || operator is true, the expression on the right side will not be checked.
19. **T** T/F: All of the relational operators are binary.
20. **F** T/F: To check if a variable has a particular value, use the = relational operator, as in the statement
    if (s = 3)
    cout << "S has the value 3";
21. **c** A variable definition always specifies the name of a variable and tells
    a) the part of the code where it will be used.
    b) what its starting value is.
    c) what type of data it can hold.
    d) how many times it will be used in the program.
    e) all of the above.
22. **d** #include <iostream> is an example of a(n)
    a) I/O statement.
    b) stream directive.
    c) comment.
    d) preprocessor directive.
    e) compiler option.
23. **d** A set of well-defined steps for performing a task or solving a problem is known as
    a) a solution engine.
    b) software engineering.
    c) a hierarchy chart.
    d) an algorithm.
    e) a flowchart.
24. **c** In the C++ statement
    pay = rate * hours;
    the rate variable is an example of
    a) a variable separator.
    b) an operator.
    c) an operand.
    d) syntax.
    e) none of the above.
25. **a** _____ is an example of volatile memory, used for temporary storage while a program is running.
    a) RAM
    b) A flash drive
    c) The CPU
    d) A hard disk
    e) The ALU
26. **a** Mistakes that allow a program to run, but cause it to produce erroneous results are called
    a) logic errors.
    b) syntax errors.
    c) linker errors.
    d) compiler errors.
    e) none of the above.
27. **b** Which control construct repeats a sequence of statements one or more times?
    a) while statement
    b) do-while statement
    c) switch statement
    d) if-else statement
    e) none of the above
28. **b** Which of the following is not true of the || operator?
    a) It has two operands.
    b) It can have one operand.
    c) It is the logical OR operator.
    d) It returns true if either operands is true.
    e) It uses short circuit evaluation.

29. **a** Before a variable in C++ is used, it must be
a) declared
b) initialized
c) used in some expression
d) begin with a capital letter
e) contain only letters, digits and underscores.

30. **b** Which of the following types is not built into the C++ language:
a) bool
b) real
c) short
d) long
e) double

31. **b** The value of the expression 20.0 * (9/5) + 32.0 is
a) 68.0
b) 52.0
c) incorrect expression so there is no value
d) 32.0
e) incorrect expression , the / should be %

32. **d** Assume this code fragment is embedded in an otherwise correct and complete program. What
should be the output from this code segment?
```
{
for( int i = 0; i < 10; i++)
{
. . .
}
cout << i << endl;
}
```
a) 10
b) 9
c) 0
d) The variable i is undefined in this scope, so this should not compile
e) none of the above

33. **e** In distinguishing an expression as true or false, C++ sees which of the following as
true?
a) true
b) The character 'F'
c) 1
d) Any non-zero value
e) all of the above

34. **a** . Which of the following determines the operator that is processed prior to another operator?
a) Operator precedence
b) Whether the operator is an arithmetic operator
c) None of these determine the order in which operators are processed.
d) none of the above
e) all of the above

35. **a** The statements int x = 1; int y; y = (++x)++;
a) Assign y the value 2;
b) Change the value of x to 2.
c) Assign y the value 0;
d) Assign y the value 1;
e) This doesn't work.

36. **d** Given the following code fragment, which of the following expressions is always true?
```
int x;
cin >> x;
```
a) if(x < 3)
b) if(x==1)
c) if((x / 3) >1)
d) if(x = 1)

37. **e** What is the output of the following code fragment?
```
int i=3;
switch(i)
{
case 0: i=15;break;
case 1: i=25;break;
case 2: i=35;break;
case 3: i=40;
default: i=0;
}
cout << i <<endl;
```
a) 15
b) 25
c) 35
d) 40
e) 0

38. **a** What is the value of the following expression?
(true && (4/3 || !(6)))
a) true
b) false
c) 0
d) illegal syntax

39. **d** . If this code fragment were executed in an otherwise correct and complete program, what
would the output be?
```
int a = 3, b = 2, c = 5;
if (a > b)
a = 4;
if ( b > c)
a = 5;
else
a = 6;
cout << a < endl;
```
a) 3
b) 4
c) 5
d) 6
e) None of the above, the cout statement belongs to the else and so is skipped.

40. **d** If the following code fragment is executed in an otherwise complete and correct program, which expression will be executed?
```
x = 0;
if (x = 12)
yes_statement;
else
no_statement;
```
a) The no_statement will be executed because x is not 12.
b) The statement has incorrect syntax so will not compile at all.
c) x=12 is illegal in the Boolean expression of an if statement.
d) The yes_statement will be executed.

41. **a** EC: What is the final value of x after the following fragment of code executes?
```
unsigned int x=0;
do
{
x++;
} while(x > 0);
```
a) 0
b) 9
c) 10
d) 11
e) infinite loop.

42. **d** EC: The _____ operator takes an operand and reverses its truth or falsehood.
a) !=
b) ||
c) relational
d) !
e) &&

43. **d** EC: What will the following expression evaluate to?
```
!( 6 > 7 || 3 == 4)
```
a) 6
b) 0
c) -1
d) true
e) false

44. **F** EC: T/F: If the sub-expression on the left side of an && operator is true, the expression on the right side will not be checked.

45. **c** EC: Two different variables in the same program may have the same name
a) if the second one is never declared.
b) if they always hold different values.
c) if they have different scope.
d) if the second one is initialized with a different value than the first one.
e) never. A program cannot have two variables with the same name.