

CS 161 Exam 1:

FORM 2 (Please put your name and form # on the scantron!!!!)

True (A)/False(B) (2 pts each)

1. The following two statements could be used interchangeably in a C++ program.

```
// Program Payroll
```

```
/* Program Payroll */
```

> T

2. Most modern computers can understand and execute pseudocode.

F

3. You may use the exit() function to return the flow of control from a function back to main(), regardless of where the function was called from.

F

stops your program

return

4. The following statement sets sum1, sum2, and sum3 all to zero.
sum1 = sum2 = sum3 = 0;

T

=

exp

5. The following statement sets the value of total to -3.
total -= 3;

F

6. In C++ an expression that evaluates to 5, -5, or for that matter anything other than 0, is considered true by an if statement.

T

7. One reason for using functions is to break programs into a set of manageable units, or modules.

T

8. The following C++ test checks if the variable child is in the range 3-12.
if (child >= 3 && <= 12)

child

F

9. If the sub-expression on the left side of an && operator is true, the expression on the right side will not be checked.

||

F

10. You can nest a for loop inside another for loop, but cannot nest a while loop inside another while loop or a do-while loop inside another do-while loop.

2
F

11. An escape sequence must start with a forward slash (/).

F

12. The cin object lets the user enter a string that contains embedded blanks.

↵

F

getline()

13. The following statements both declare the variable num to be an integer.

```
#define INT int
```

```
int num;
```

```
int INT num;
```

T

14. The following statement s will not print anything.

```
x = 5;
```

```
if (x < 5) {
```

```
cout << "Hello ";
```

```
cout << "world \n";
```

F

15. In C++, the 5 basic arithmetic operators are ~~F~~ addition (+), subtraction (-), multiplication (*), division (/), and exponentiation (^{mod %}~~^~~).

16. A while loop is somewhat limited because the counter can only be incremented or decremented by ~~one~~ [?] each time through the loop. ~~F~~

17. A switch statement branches to a particular block of code depending on the value of a numeric (i.e. integer or floating-point) variable or constant. ~~F~~

C int char
Multiple Choice (3 pts each)

18. A _____ is used to mark the end of a complete C++ programming statement.

- A) comment
- B) closing brace
- C) new line
- D) period
- ☒ E) semicolon

19. The expression 7 / 2 evaluates to

- A) 7.2
- ☒ B) 3
- C) 14
- D) 3.5
- E) 1

20. An operation that copies a value into a variable is called a(n) _____ operation.

- A) copy
- B) cout
- C) equals
- ☒ D) assignment
- E) declaration

21. Which of the following is/are valid C++ identifiers?

- A) department_9
- B) aVeryLongVariableName
- C) last-name
- D) All of the above are valid identifiers.
- ☒ E) Both A and B are valid identifiers, but C is not.

22. The _____ statement causes a loop to terminate early.

- ☒ A) break
- B) stop
- C) quit
- D) terminate
- E) continue

23. If nothing within a while loop ever causes the condition to become false, a(n) _____ may occur.

- A) compiler error
- B) system crash
- C) null value
- D) unexpected exit
- ☒ E) infinite loop

24. The ideal type of loop to use if you want a user to enter exactly 20 values is a(n)

- _____ loop.
- ☒ A) for
 - B) nested
 - C) do-while
 - D) infinite
 - E) sentinel controlled

25. Three primary activities of a typical program are

- ☒ A) input, processing, and output.
- B) compiling, linking, and debugging.
- C) creating variables, operators, and keywords.
- D) executing lines, statements, and keywords.
- E) reading, writing, and arithmetic.

26. Creating a program requires many steps. Three of these are

- A) input, processing, and output.
- B) syntax, logic, and error handling.
- C) keywords, operators, and punctuation.
- ☒ D) program design, writing source code, and testing.
- E) none of the above.

27. The programmer usually writes source code for a computer using

- A) a preprocessor.
- B) a debugger.
- C) a compiler.
- D) a linker.
- ☒ E) none of the above.

.cpp

IDE?
Notepad ++
dev C ++
vim
text editor

28. Characters or symbols that perform operations on one or more operands are

- ☒ A) operators.
- B) op codes.
- C) program ops.
- D) syntax.
- E) none of the above.

29. C++ is an example of a _____ programming language.

- ☒ A) high-level
- B) low-level
- C) non-structured
- D) binary
- E) mid-level

30. If a while loop has no braces around the body of the loop

- A) the loop body ends when the endwhile statement is encountered.
- B) there is no loop body.
- ☒ C) the loop body contains just one statement.
- D) the program will not compile.
- E) the program will compile, but not run.

31. If s1 and s2 are string objects, s1 == s2 is true when

A) s1 = "dog" and s2 = "DOG".

B) s1 = "lion" and s2 = "lioness".

C) s1 = "cat" and s2 = "cat_".

☒ D) None of these because in each case one or more characters in the strings have different ASCII codes.

E) None of these because string objects cannot be compared with relational operators.

32. The expression x < y is called a(n) _____ expression.

☒ A) relational

B) logical

C) binary

D) arithmetic

E) comparison

33. What will the following code print?

```
num = 5;
```

```
cout << num++ << " ";
```

```
cout << num-- << " ";
```

```
cout << --num;
```

A) 6 5 4

B) 5 6 5

☒ C) 5 6 4

D) 5 4 3

E) 5 5 4

num 5 6 4

n-1
n-
n=n-1
differ
same

34. A void function is one that

A) is never called.

B) has an empty function body.

☒ C) returns no value.

D) returns a zero.

E) has no parameters.

void fun () {

return ?

35. In the statement

```
cout << sqrt(22.0);
```

22.0 is

A) a parameter.

☒ B) an argument.

C) a memory location.

D) a default value.

E) an lvalue.

argument {

36. A function _____ is a statement that causes a function to execute.

A) header

B) definition

C) parameter list

D) prototype

☒ E) call

37. The ideal type of loop to use for repeating a menu is a(n) _____ loop.

- ☒ A) do-while
- B) sentinel controlled
- C) for
- D) infinite
- E) nested

38. What will the following statement do if x equals 17 and answer = 20?

`answer = x > 100 ? 0 : 1;`

- A) Assign 1 to x.
- ☒ B) Assign 1 to answer.
- C) Assign 0 to x.
- D) Assign 0 to answer.
- E) Assign 17 to answer.

39. To use the `sqrt()` function, or other mathematical library functions, you must `#include` the _____ header file in your program.

- A) algebra
- B) mathlib
- ☒ C) math
- D) iostream
- E) iomanip

Extra Credit (2 pts each):

40. A variable as an l-value

- ☒ A) is an expression that can be only be placed on the left of any operator such as +, *, /, etc.
- ☒ B) is assigned a value
- ☒ C) can never have a value fetched from it
- ~~D) is designed for use by a left-handed person~~
- ☒ E) both b and c

41. True(A)/False(B): Given the declaration

`int x = 0;`

The following expression causes a divide by zero error:

`(x == 0) || (2/x < 1);`

~~3 = x~~
F short circuit

42. A definition of a variable outside any function is called a

- A) local function definition
- ☒ B) global variable definition
- C) global function header
- D) global function definition
- E) local variable definition

// do not define/declare
globals
- 10

43. Which control construct repeats a sequence of statements zero or more times?

- ☒ A) while statement
- B) do-while statement
- C) switch statement
- D) if-else statement
- E) none of the above

44. Which of the following statements about named constants is/are true?

- A) The initial value of a named constant, cannot be changed during the program execution.
- B) The identifier name of a named constant can only contain capital letters and underscores.
- C) A named constant must be initialized with a value at the time it is declared.
- D) All 3 of the above statements are true.
- E) Statements A and C are true, but B is not.

dub, it's a constant

const int I = 0;

~~I = 0;~~