CISC 105 Fall 2005	Midterm 1	10/07/05
Name		
Circle section: 18 19 20 21	ТА	

General Instructions

- DO NOT PUT YOUR SSN ON ANYTHING!
- DO NOT WRITE YOUR NAME ON ANY PAGE EXCEPT THIS ONE!
- Turn off any noise making device, especially **CELL PHONES**. You may lose up to one letter grade if your device disturbs the peace of the exam.
- You have 50 minutes. Pace yourself, and pay attention to the point values.
- The exam is 41% multiple choice, and 59% programming and short answer.
- Do problems you are confident about first. If you finish the problems you know, write what you do know about other problems to gain partial credit; but erroneous information may detract from that credit or irritate the grader, so don't make stuff up.
- Read *all* the directions *carefully* on each problem.
- Often writing a fast, rough version of a program in English or pseudocode will make your C coding faster and more accurate. It also enables me to give partial credit in some circumstances.
- You may assume that input will not produce errors for the procedures described, unless the questions say otherwise.
- Do not do unnecessary testing. For example, testing for both x < 0 and x >= 0 instead of using one test and then else would be considered unnecessary testing.
- Go to it!

1. (2 pts) x = 6 % 10; (a) -4 (b) 0 (c) 3 (d) error (e) none of the above 2. (2 pts) x = 18 % 6; (a) 3 (b) 0 (c) 12 (d) error (e) none of the above 3. (2 pts) x = 4 * 6 - 2 * 7;(a) 154 (b) 112 (c) 10 (d) error (e) none of the above 4. (2 pts) y = 3 >= 3;x = (4 / 5) || !y;(a) 1 (b) 0 (c) 0.8 (d) 3 (e) error 5. (2 pts) x = 2 || -5;(a) 0 (b) -5 (c) -10 (d) error (e) none of the above 6. (2 pts) x = 5 % 3; (b) 1 (c) 3 (d) error (e) none of the above (a) 2 7. (2 pts) y = 3 != 2;x = !y;(a) 1 (b) -1 (c) 0 (d) error (e) none of the above

Multiple Choice: use scan sheet for your answers.

8. (2 pts) x = 8;x /= 2;(a) 4 (b) 8 (c) 6 (d) error (e) none of the above 9. (2 pts) $x = 4^{2};$ (a) 4 (b) 16 (c) 8 (d) error (e) none of the above 10. (2 pts) y = 6.4; x = y * 3;(a) 18 (b) 18.2 (c) 19.2 (d) error (e) none of the above 11. (2 pts) double z = 9;x = z / 6.0;(a) 1.5 (b) 0.75 (c) 1 (d) error (e) none of the above 12. (1 pts) y = 3; x = 5 / 4 || 12 / y - 3; (a) 0 (b) 1.25 (c) 1 (d) error (e) none of the above

- 13. (2 pts) Which of the following is a C expression for testing "x is a value from four to ten, inclusive"? Assume x is an integer.
 - (a) 4 <= x <= 10
 (b) 4 <= x and x <= 10
 (c) 10 >= x && x >= 4
 (d) !(10 < x || x > 4)
 - (e) none of the above
- 14. (2 pts) Which of the following is a C expression for testing "x is outside the range from 3 to 5"? Assume x is an integer.
 - (a) 3 > x && x > 5
 - (b) 3 > x || x < 5
 - (c) 6 <= x <= 2
 - (d) cannot be expressed in C
 - (e) none of the above
- 15. (2 pts) Why are we using type "double" in this class instead of "float"?
 - (a) float cannot represent decimals
 - (b) float is not as memory efficient as double
 - (c) a float may be less precise than an int
 - (d) unary type casts only work with double
 - (e) none of the above
- 16. (2 pts) Which kind of memory has its size often specified in kilobytes?
 - (a) cache
 - (b) registers
 - (c) CPU
 - (d) RAM
 - (e) disk

Use these choices to relate classroom discussions to the next two questions:

- (a) measured in megabytes or gigabytes
- (b) the fastest memory
- (c) located very close to the CPU
- (d) very slow, but lowest cost per byte
- (e) none of the above

17. (2 pts) The best description to associate with cache is:

- 18. (2 pts) The best description to associate with registers is:
- 19. (2 pts) The load stage of a C program is accomplished by which command?

(a) cc(b) a.out(c) pwd(d) emacs(e) none of the above20. (2 pts) The link stage of a C program is accomplished by which command?

(a) cc (b) a.out (c) pwd (d) emacs (e) none of the above

- 21. (2 pts) The execute stage of a C program is accomplished by which command?
 - (a) cc (b) a.out (c) pwd (d) emacs (e) none of the above

Short answers

- 22. (2 pts) Write a one line shell command to move up one place in the directory tree:
- 23. (2 pts) Write a one line shell command to create a directory named "temp":
- 24. (2 pts) Write a one line shell command to change the name of a.out to "george":
- 25. (3 pts) As discussed in class, what three things should you include in a program where you define and use your own function?
- 26. (2 pts) Where in the memory hierarchy is the file "a.out" after the load stage?
- 27. (4 pts) Convert the decimal number 148 to binary. Show your work.

28. (4 pts) Convert the binary number 010110101011 to hexadecimal. Show your work.

Code

29. (10 pts) Write a code fragment that prints "red" if the variable x is less than 4, and "blue" if x is greater than or equal to 4. Do not write a program. Do not declare any variables. Write only what is necessary to answer this question.

30. (6 pts) Write a function named sumTwoInts that takes two integer arguments and returns their sum. Write only the function definition.

31. (4 pts) Write a single line of code that shows how a main() function could use your function to display the sum of 3 and 4. Do not write main().

32. (20 pts) Write a **complete** C program that prompts the user for 100 integers and prints the sum of those integers. The program must prompt the user for each input.