No assistance, no books, no computers (other than electronic notes); you may use your notes. By submitting an answer sheet to this exam, I acknowledge that I’ve followed these rules. If I’m found to have violated these rules my final course grade will be an E.

You have until 12:15 to complete the exam and submit your answers. 3 points off for every minute turned in late. I use the time in Canvas to determine submission time.

***Write all answers at the end of this exam or in a separate document.*** Your uploaded file’s name must be your name (i.e. BobMann.docx)

1. Write the command to compile two separate files in Unix at one time.
2. Name the three classes of user and three permission levels in a Unix system
3. State the Unix command used to change your password
4. Re-write this class method so it’s a template.

int MyClass::MyMethod() const {  
 return item;  
 }

1. Name the components of the software development life cycle.
2. Identify all the principles of OO Programming.
   1. Recursion
   2. Inheritance
   3. Function overloading
   4. Classes
   5. Data abstraction
   6. Encapsulation
   7. Variables
   8. Polymorphism
   9. Programming
3. What does acronym ADT stand for?
4. How does ADT differ from class?
5. What does acronym CRC stand for and what is it?
6. List all inheritance types
7. Draw a basic UML class diagram for a class to represent figures with length and width. The only methods are individual get/set functions.
8. Write the first line of the class definition of class child, showing it inherits from class parent
9. Create a class to represent bikes. A bike’s attributes are a string for color name and an integer for number of wheels. The only method you are to write is a default constructor, written as an in-line function definition, with default parameter values of “Black” and 2. Use a constructor initializer list. Display “\n\tConstructor called with values ” and display color and number of wheels.
10. What is Professor Mann’s golden rule of programming?
11. Define memory leak
12. Define dangling pointer
13. Define deep copy vs shallow copy
14. Modify this code to handle in main exceptions that are found in func. Generate error message “exam error” when x < 1. Also include catching all other errors in a default and display message “Unknown error caught in main”.  
      
     int main() {   
     int temp;  
     cout << “Enter a positive integer: “;  
     cin >> temp;  
     func( temp );  
     return 0;  
     }   
      
    void func(int x) {   
     cout << x << “ is >= 1” << endl;  
     }
15. Select all that apply: What are the types (classes) of errors in that occur in programs?
16. Syntax
17. Philosophical
18. Compiler
19. Run time
20. Logic
21. Execution
22. Thoughtless
23. Mistaken
24. Given:  
     int ary[ ] = {3, 7, 11, 17};   
     int \*ptr = &ary[2];  
     cout << ary[0] << ' ' << ary[1] << ' ' << ary[2] << ' ' << ary[3] << ‘ ‘;  
     cout << XXX << ‘ ‘;  
     cout << ary[0] << ' ' << ary[1] << ' ' << ary[2] << ' ' << ary[3] << ‘ ‘;  
     cout << \*ptr << endl;  
    show all output when XXX is replaced with:  
     a. (\*ptr)++  
     b. --(\*ptr)   
     c. ++\*ptr--
25. Write a recursive function that calculates exponential values for non-negative exponent values, using the following prototype. However, when the value of exponent is odd it multiplies by -base rather than base.  
      
    int Expon( int base, int exponent);

Answers to Mann CIS200 Midterm. Expand to use as much space as necessary:

1

2a.

2b.

2c.

2d.

2e.

2f.

3.

4.

5.

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11.

12.

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16.

17.

18.

19.

20a.

20b.

20c.

21.