CS1411 - 160 - Fall 04 - Test 2

October 25, 2004

1. After execution of the code fragment

```
int arr[5];
int i;

for (i = 0; i < 5; i++)
{
    arr[i] = i + 2;
    if (i >= 3)
        arr[i-1] = arr[i] + 3;
}
```

what is contained in arr[3]?
A) 9
B) 8
C) 5
D) 3
E) none of the above

2. When used with an output file stream, which of the following statements about the open function is false ?
A) It associates the name of a stream variable with the name of a physical disk file.
B) It sets the writing marker at the beginning of the file.
C) It erases the old contents of the file if the file already exists.
D) It creates a new, empty file if the file does not already exist.
E) none of the above

3. Given the declarations

```
float  x;
float* ptr = &x;
```

what does the following statement do?

```
*ptr = 24.9;
```

A) It stores 24.9 into ptr.
B) It stores 24.9 into the variable pointed to by ptr.
C) It stores 24.9 into x.
D) b and c above
E) a, b, and c above

4. The values in an array are accessed by an index, whereas the values in a struct are accessed by a member name.
A) True
B) False

5. What is the output of the following program fragment?

```
int alpha[5] = {100, 200, 300, 400, 500};
int i;

for (i = 4; i >= 0; i--)
    cout << alpha[i] << ' ';
```

A) 400 300 200 100 0
B) It cannot be answered from the information given.
C) 500 400 300 200
D) 4 3 2 1 0
E) 500 400 300 200 100

6. Assuming that the internal representation of the character 'e' is the integer 101, what is the output of the following code fragment?

```
char ch = 'e';

cout << ch << ' ' << static_cast<int>(ch) << endl;
```

A) e e
B) 101 101
C) e 101
D) 101 e

7. If ptr is a variable that points to an object of type

```
struct InventoryType
{
    int   quantity;
    float itemCost;
};
```

then which of the following correctly accesses the itemCost member of the object pointed to by ptr?

A) c and d below
B) c, d, and e below
C) ptr->itemCost
D) (*ptr).itemCost
E) *ptr.itemCost

8. You have created some useful type declarations and constant declarations and have stored them into a file named mystuff.h. Which of the following would you use to insert the contents of this file into a program?

A) #include <mystuff.h>
B) #include "mystuff.h"
C) #insert mystuff.h
D) #include mystuff.h

9. In C++, pointers are declared using the reserved word pointer.
A) True
B) False

10. Which of the following cannot be used to store the string "Mary" into nameStr?
A) char nameStr[5] = "Mary";
B) char nameStr[5];
strcpy(nameStr, "Mary");
C) char nameStr[] = "Mary";
D) char nameStr[5];
nameStr = "Mary";

11. In C++, a struct can be passed as a parameter either by value or by reference.
A) True
B) False

12. If the word const precedes the declaration of an array in a function heading, the function is prevented from modifying the array.
A) True
B) False

13. What is output by the following program fragment?

```
int  alpha = 35;
int  beta = 50;
int* ptr1 = &alpha;
int* ptr2 = &beta;

*ptr1 = *ptr2;
cout << *ptr1 << ' ' << *ptr2 << endl;
cout << alpha << ' ' << beta << endl;
```

A) 50 50
50 50
B) 35 50
50 50
C) 35 50
35 50
D) 50 50
35 50

14. You are writing a program to count the frequencies of characters that are read from a data file. (The computer uses the ASCII character set, which defines 128 different characters.) Which of the following array declarations is appropriate, given that input characters will be used to index into the freqCount array?
A) int freqCount[char];
B) char freqCount[128];
C) char freqCount[int];
D) int freqCount[128];
E) none of the above

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15. In a C++ program, 't' denotes a single character, whereas "t" denotes two characters.
A) True
B) False

16. Dynamic data can be deallocated during program execution, but static data remains until the program terminates.
A) True
B) False

17. When choosing a data structure, the best structure to use is the simplest one that accurately reflects the problem and the processing.
A) True
B) False

18. If a program contains the declaration

```
int salePrice[100][100];
```

then the statement

```
cout << salePrice[3];
```

outputs all the values in row 3 of the array.
A) True
B) False

19. C++ operators that may be applied to struct variables are assignment (=), equality testing (==), and member selection (.).
A) True
B) False

20. Given the declaration

```
char myName[4] = "Ben";
```

which of the following does not output "Ben"? (Warning, trick question!)
A)

```
for (i = 0; i < 3; i++)
      cout << myName[i];
```

B)

```
i = 0;
   while (myName[i] != '\0')
   {
      cout << myName[i];
      i++;
    }
```

C)

```
for (i = 0; i < 3; i++)
      cout << myName;
```

D)

```
cout << myName;
```

E) none of the above–they are all valid

21. The members of a struct can be of any type except float.
A) True
B) False

22. The new operator automatically initializes the newly allocated data to zero.
A) True
B) False

23. A rental car company needs to keep track of the number of cars that are being rented at any given time by make and year. Which of the following data structures is most appropriate for this problem?
A) a two-dimensional array
B) a three-dimensional array
C) parallel one-dimensional arrays
D) a one-dimensional array

24. To select a member of a struct, you specify the member name, then a dot, and then the struct variable name.
A) True
B) False

25. Which of the following is not one of the things a programmer must do in order to use files in a C++ program?
A) Prepare each file for reading or writing by calling the open function.
B) Declare each file stream in a variable declaration.
C) Specify the name of the file stream in each input or output statement that uses it.
D) Erase the contents of each output file before running the program.
E) Use a preprocessor directive to include the header file fstream.

26. Unlike other C++ arrays, a string need not be output by the programmer one array element at a time.
A) True
B) False

27. Given the declaration

```
char message [10];
```

which of the following statements is invalid?

A) cin >> message;
B) strcpy (message, "Welcome");
C) if (strcmp(message, "Picnic") == 0)
cout << "Hooray!";
D) message [2] = 'g';
E) none of the above–they are all valid

28. When encountering the statement

```
char myString[] = "Adios";
```

the C++ compiler allocates an array of 5 elements.
A) True
B) False

29. What is the output of the following code:

```
namespace A {
void doIt() {
   cout << "in A";
}
}

namespace B {
void doIt() {
   cout << "in B";
}
}

void doIt() {
   cout << "in default";
}

int main() {
   using namespace B;
   doIt();
}
```

A) in A
B) in B
C) in default
D) a compile-time error

30. Convert the number 99_H into decimal
A) 63
B) 99
C) 153
D) this is impossible