Questions asked on the midterm exam will be similar in style to the following questions though the content of the questions is likely to differ in the exam itself:

1. (10 points) For each of the following code fragments, please write the letter of the phrase that best describes it next to it.

   a. n is initialized with the value 7  ___ int fnc(int n);

   b. n is assigned the value 7  ___ int n[7];

   c. n is an array of integers  ___ int const * n;

   d. n is an array of pointers to integers  ___ int fnc(int & n);

   e. n a pointer to a const integer  ___ n = 7;

   f. n is a const pointer to integer  ___ int * n[7];

   g. n is a reference to integer  ___ int fnc(int * n);

   h. n is an integer passed by value  ___ int * const n;

   i. n is an integer passed by reference  ___ int n = 7;

   j. n is an integer pointer passed by value  ___ int & n = p;
2. (5 points) Please write each of the following words into their correct places in the following sentences: (a) linker, (b) compiler, (c) editor, (d) Makefile, and (e) precompiler.

The _____________ copies the content of header files into the source files, which you created using an _____________. The _____________ turns those source files into object files that are then combined by the _____________ to form an executable program. On Linux these steps are managed by inference rules from the _____________ that invoke each step as needed.

3. (8 points) Please explain briefly (1) what is wrong with the following function and (2) what you would do to fix it:

```
// exchanges values of passed variables
void swap_integers (int i, int j)
{
    int temp = i;
    i = j;
    j = temp;
}
```
4. (4 points) Please describe briefly one important similarity between C style strings and C++ style strings:

Please explain one important difference between C style strings and C++ style strings:

5. (6 points) Please explain briefly (1) what is the output of the following program and (2) what does that say about the order in which elements are stored in a set container?

```cpp
#include <iostream>
#include <algorithm>
#include <iterator>
#include <set>
using namespace std;

int main (int, char * []) {
  set<string> s;
  s.insert(string("sample"));
  s.insert(string("midterm"));
  s.insert(string("question"));

  copy (s.begin(), s.end(),
       ostream_iterator<string>(cout,
                                 " "));
  cout << endl;
  return 0;
}
```