Quiz 5
CSE 30
Winter 2008

1) Which part of the entire compilation sequence clear through to program execution is responsible for:

a) ensuring the bss segment is set up and zero-filled

b) creating an executable from multiple object files

c) translating C source code into assembly target code

d) resolving undefined external references with defined global references in other modules

e) getting the executable image from disk into memory

f) translating assembly source code into object target code

Order the following storage elements/types from fastest to slowest

A) RAM (Main Memory)  B) Registers  C) L2 cache
D) L1 cache  E) Hard disk  F) Tape

_____ (Fastest)
_____  _____
_____  _____
_____  _____  _____ (Slowest)

2) What gets printed if the following function is invoked as \texttt{recurse( 3, 11 )}?

\begin{verbatim}
int
recurse( int a, int b ) {
  int local = b - a;
  int result;

  if ( a < 6 )
    result = local + recurse( a + 1, b );
  else
    result = local + 2;

  printf( "\%d\n", result );
  return result;
}
\end{verbatim}

(over)
3) Given the following program, reorder the printf lines so that the values that are printed are sorted from smallest to largest if compiled and run on a Sun SPARC architecture. These lines print out the address of the different parts of the program (not the values assigned) with the printf() format specifier %p.

```c
int a;

int main( int argc, char *argv[] ) {
    int b;
    static int c = 404;

    /* 1 */ (void) printf( "b --> %p\n", &b );
    /* 2 */ (void) printf( "a --> %p\n", &a );
    /* 3 */ (void) printf( "main --> %p\n", main );
    /* 4 */ (void) printf( "argc --> %p\n", &argc );
    /* 5 */ (void) printf( "malloc --> %p\n", malloc(50) );
    /* 6 */ (void) printf( "c --> %p\n", &c );
}
```

This line number would print the smallest value

This line number would print the largest value

4) The keyword ________________ is used to turn off optimizations in C/C++/Java.

What question would you most like to see on the Final Exam?