EE 354
Exam 3 Review 2

1. PWM is said to be the "poor man's D to A converter". What additions need to be made to the hardware to get an analog signal from a PWM signal?

2. If the reference voltage on the A to D converter is 3.3 volts and the user inputs an analog signal of 1.2 volts, what binary value appears in the A to D data register?

3. When we input from the A to D the data is shifted left by 6 places. The input statement typically looks like this:

   ```
   while (1)
   {
       AD0CR |= (1 << 24);   //Start conversion
       while (AD0DR0 < 0x7FFFFFFF);    //Wait for done bit
       TMR16B1MR0 = ((AD0DR0 & 0xFFC0) >> 6); //Data to PWM
   }
   
   Why is the data value anded with 0xFFC0? What does this do?
   
4. Calculate the correct values to put into U0DLM and U0DLL for a baud rate of 1200 baud if the UART clock divider is 2 and we neglect the fractional divider terms.

5. A function prototype is given below. Write a sample calling statement that could go into a main program to activate this function.
   ```
   float MyFunction(int d[], char sz);
   ```

6. If a C-program on the ARM calls an assembly program and an integer value is returned by the assembly program, explain how this data gets back to the C-code.

7. The ARM Cortex M0 has a 3-stage pipe. What happens in the pipeline of a conditional branch instruction is executed.