1. (3 points) Convert the base-10 number 39 into:
   (a) Binary:
       
   (b) Hexadecimal:
       
   (c) Negate this number using two’s complement:
       
2. (2 points) Represent the number \(1 \frac{1}{4}\) in 8-bit floating point format.

3. (1 point) Perform the following unsigned binary addition:
   \[
   \begin{array}{c}
   10011101 \\
   + \quad 10111000 \\
   \hline
   10111000 \\
   \end{array}
   \]

4. (4 points) Name two of the three machine language instruction types, and give an example of each:

5. (3 points) Name three of the five processor components:
6. (2 points) Perform one of following operations:

| Perform a right circular shift of 3 bits on 0110001 | Complement the first bit of an 8 bit pattern using a logical operation and a mask. |

7. (1 point) A program in execution is called a

(a) semaphore
(b) time slice
(c) process
(d) program
(e) job

8. (1 point) A condition that occurs when two or more processes are competing for resources in such a way that none of them can continue executing is called:

(a) semaphore
(b) A critical region
(c) a halt
(d) deadlock
(e) a race condition

9. (3 points) Name three of the four components of the kernel: