

Figure 2: The Mic-1 microarchitecture. Relevant to subject 5.

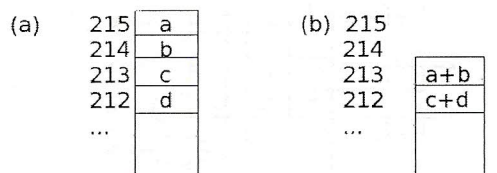


Figure 3: Variable frame (a) before, (b) after. Relevant to subject 5.

8. Describe the one's complement integer representation (on 8 bits). Give the range of numbers that can be represented, also the representation of 0, maximum value, minimum value. How is addition in one's complement done? Perform the following operations (in one's complement):

$$\begin{array}{r}
 11111111 \\
 +11111111 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 10110111 \\
 -10110111 \\
 \hline
 \end{array}
 \quad
 \begin{array}{r}
 11110111 \\
 +11110111 \\
 \hline
 \end{array}$$

Motivate in each case whether the answer is correct or not.