Question-1:

$$
\begin{array}{r}
1 \\
9F \\
+\ 8E \\
\hline
①\ 2D \\
\end{array}
$$

↙ Discarded.

F = 15, E = 14, F + E = 15 + 14 = 29
29/16 = 1, remainder = 13 = D

1 + 9 + 8 = 18,
18/16 = 1, remainder = 2

1. Carry flag, CF = 1, [System has a carry].

2. Zero flag, ZF = 0, [the result is NOT zero.]

3. Parity flag, PE = 1 [, 2D = 0010 1101
   Number of 1's = 4 Even
   Even number of 1's is ~~odd~~ Parity]

4. Auxiliary Carry flag, AC = 1, [4-bit computation has a carry]

Question-2:

$$1 \text{ second} \longrightarrow 2.1 \times 10^9 \text{ cycles.}$$

$$10 \quad '' \quad \longrightarrow \left(2.1 \times 10^9 \times 10 \right) \text{ cycles}$$

$7 \text{ clock cycles} \quad \text{for} \quad 1 \text{ instructions}$

$$\left(2.1 \times 10^9 \times 10 \right) \text{ cycles} \quad \text{for} \quad \frac{2.1 \times 10^9 \times 10}{7} = \underline{3 \times 10^9 \text{ instructions}}$$

Question 3 :

1. Place the address 1AC34045 into the address bus.

2. Assert the processors RD(Read) pin

3. Wait 1 cycle for memory chip to respond

4. Copy the data from data bus into destination operand.