

Quiz 2

Microprocessor and Microcontroller

3+4+8

1. A smart door uses an 8-bit register **AUTH** to store user access rights.

AUTH = 11010110b

System events occur:

1. The system **shifts left** once to enable a high-security temporary mode.
2. It **toggles** visitor access bits using:
XOR **AUTH**, 29h
3. If the emergency flag is active (CF=1), it performs:
RCR **AUTH**, 1
Determine the **final AUTH register** (binary) and the final **CF**.

2. **AL** = 01101100b

1. Determine if **L3** is locked
2. Toggle **L5**
3. Rotate **AL right by 3** to simulate passing control to other lockers.
4. Show the final **AL**.

3. find the flag bits for the following instructions:

1. mov si, 0B9F6h

sub si, 9874h

2. mov dx, 0

dec dx

3. mov cx, -4097

add cx, 1001h

4. mov ax, 0FFFFh

inc ax

5. **AL** = 10110110b

AND **AL**, 11001100b