

```

LOOP:  IN ADCON      ;INPUT 4-BIT A/D RESULT
      ANI 0FH      ;MASK MS FOUR BITS
      MOV E,A      ;COMPUTE 16-BIT OFFSET IN DE
      MVI D,0
      LXI H, TABLE ;BASE ADDRESS OF TABLE IN HL
      DAD D      ;ADD OFFSET TO BASE
      MOV A,M     ;GET TABLE ENTRY
      OUT DSPLY   ;OUTPUT TO LEDS
      JMP LOOP    ;REPEAT
TABLE: DB 00H,01H,01H,03H,03H,07H,07H,0FH
      DB 0FH,1FH,1FH,3FH,3FH,7FH,7FH,0FFH
    
```

Figure 4.8-1c Program for liquid level indicator.

location 0000H, the program would run continuously after the microprocessor is reset.

4.8.2 Decoder Test System

The I/O port configuration for a system that functionally tests 74ALS138 and 8205, 1-out-of-8 decoders, is shown in Fig. 4.8-2a. The decoder is the device under test, DUT, and is placed in a 16-pin test socket. Since the decoder is a combinational circuit, a complete functional test is achieved by applying all possible input combinations and checking for the correct outputs. The decoder has six inputs and eight outputs. The inputs consist of three enable inputs and three select inputs. The

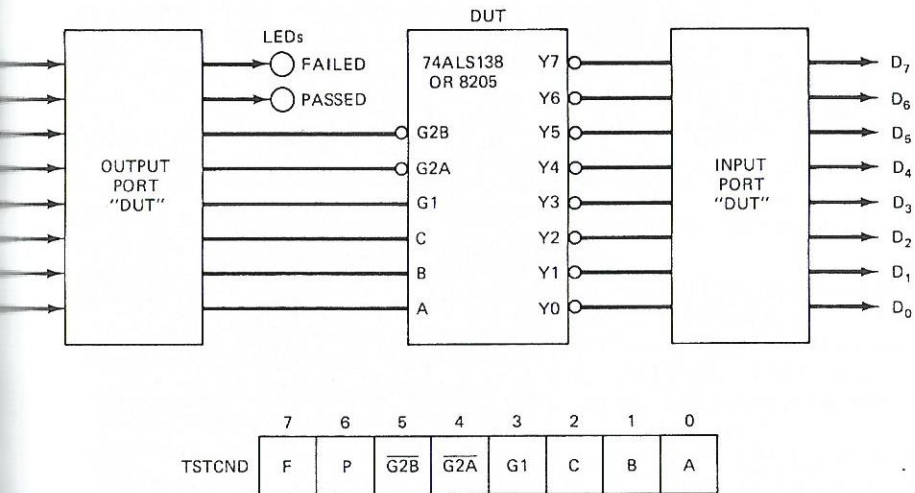


Figure 4.8-2a Input and output port configuration and TSTCND bit assignment for decoder test system.

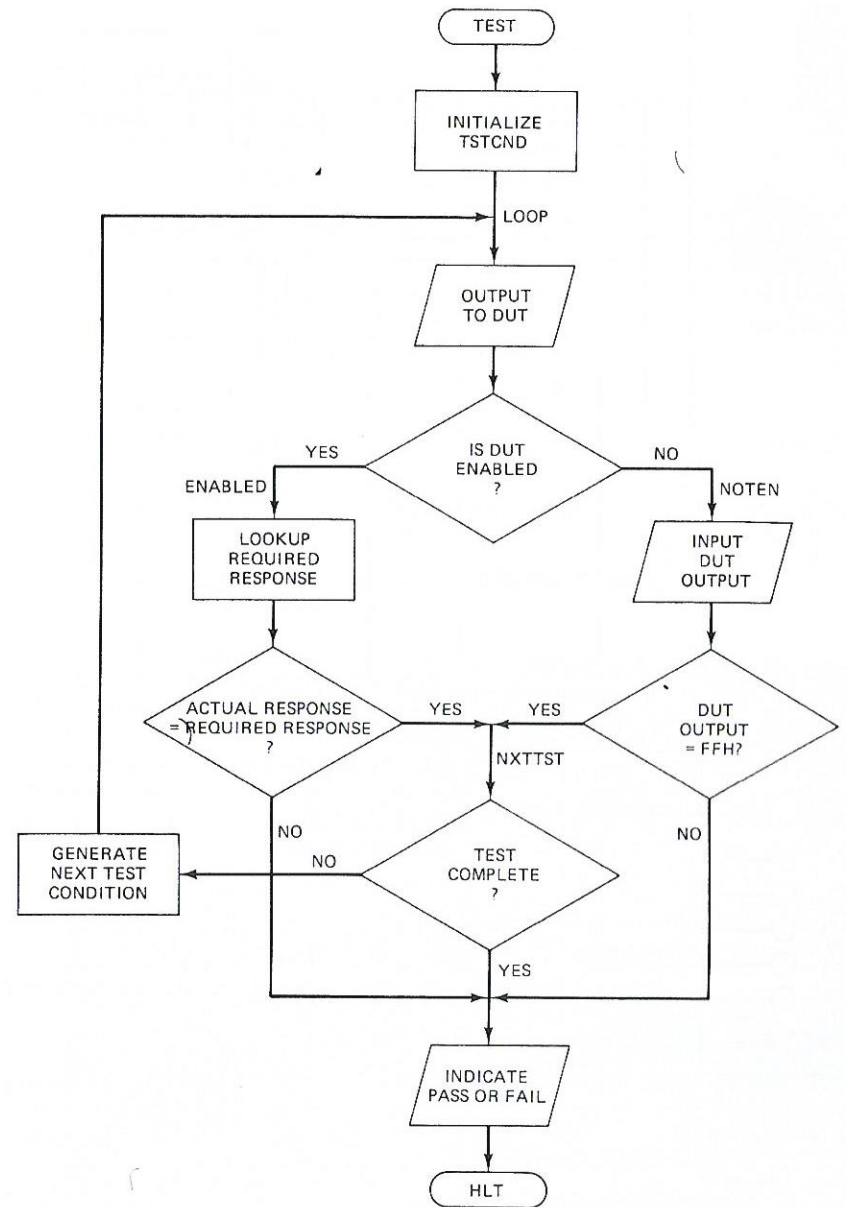


Figure 4.8-2b Flowchart for decoder test system.