Question 7:

Pseudocode:

1. START
2. SET num as integer.
3. PRINT " Enter the 7-digit number."
4. INPUT num
5. If num ==1111110 THEN
6.    PRINT "0".
7. ELSEIF num ==0110000 THEN
8.    PRINT "1"
9. ELSEIF num =1101101 THEN
10.    PRINT "2"
11. ELSEIF num= 1111001 THEN
12.    PRINT "3"
13. ELSEIF num== 00110011 THEN
14.    PRINT "4"
15. ELSEIF num== 1011011 THEN
16.    PRINT "5"
17. ELSEIF num== 1011011 THEN
18.    PRINT "6"
19. ELSEIF num== 1110000 THEN
20.    PRINT "7"
21. ELSEIF num==1111111 THEN
22.    PRINT "8"
23. ELSEIF num== 1110011 THEN
24.    PRINT "9"
25. ELSE
26.    PRINT "E"
27. END IF
28. END

| INPUT | PROCESS | OUTPUT |
|---|---|---|
| num | If num=1111110 then Print '0'. | 0 |
| | If num=0110000 then Print '1' | 1 |
| | If num=1101101 then print '2' | 2 |
| | If num=1111001 then print '3' | 3 |
| | If num=0110011 then print '4' | 4 |
| | If num=1011011 then print '5' | 5 |
| | If num=1011111 then print '6' | 6 |
| | If num=1110000 then print '7' | 7 |
| | If num=1111111 then print '8' | 8 |
| | If num=1110011 then print '9' | 9 |
| | Else print 'E' | E |

```
                    ( START )
                        │
                    ┌───────┐
                    │  num  │
                    └───────┘
                        │
                  ◇ num == 111110 ───→ "0" ───────────┐
                        │                              │
                  ◇ num == 011 0000 ──→ "1" ──────────┤
                        │                              │
                  ◇ num == 1101101 ──→ "2" ───────────┤
                        │                              │
                  ◇ num == 1111001 ──→ "3" ───────────┤
                        │                              │
                  ◇ num == 0110011 ──→ "4" ───────────┤
                        │                              │
                  ◇ num == 1011011 ──→ "5" ───────────┤
                        │                              │
                  ◇ num == 1011111 ──→ "6" ───────────┤
                        │                              │
                  ◇ num == 1110000 ──→ "7" ───────────┤
                        │                              │
                  ◇ num == 1111111 ──→ "8" ───────────┤
                        │                              │
                  ◇ num == 1111011 ──→ "9" ───────────┤
                        │ NO                           │
                    ┌───────┐                          │
                    │  'E'  │                          │
                    └───────┘                          │
                        │                              │
                    ( END ) ←──────────────────────────┘
```