专业: 电气工程及其自动化

姓名:潘谷雨

学号: 3220102382

地点: 紫金港东三 406

浙江大学实验报告

课程名称: 微机原理与应用综合实验 指导老师: 胡斯登 成绩: _____

实验名称: 单片机指令系统 BCD 控制

一、实验代码

1.30H 与 31H 中存放 4 位 BCD 码数字,编写程序将数字倒序排列。

ORG 0000H

SJMP START

ORG 0030H

START:

MOV A,30H

SWAP A

MOV R0,A

MOV A,31H

SWAP A

MOV 30H,A

MOV 31H,R0

SJMP \$

2. 在 RAM31 单元存放一组 8 位带符号数,字节个数放在 30H 中,请编写程序统计出其中正数,负数以及 0 的数目,结果存放在 41H,42H 以及 43H 中。

ORG 0000H

SJMP START

ORG 0030H

START:

MOV A,30H

MOV R1,#31H ;address

LOOP:

CJNE @R1,#1000000B,JUG

INC 42H ;10000000B=-128

INC R1

DEC A

JNZ LOOP

SJMP \$

JUG:

JNC LOOP

JC LOOP0_a

RET

```
LOOP0_a:
CJNE @R1,#0000000B,LOOP_a
INC 43H
INC R1
DEC A
JNZ LOOP
SJMP $
RET
LOOP a:
INC 41H
INC R1
DEC A
JNZ LOOP
SJMP $
RET
LOOP:
INC 42H
INC R1
DEC A
JNZ LOOP
SJMP $
RET
3. 模拟下列逻辑运算编写程序并将运算结果转换为显示码后进行显示。
                                  Y = \overline{A \oplus B \bullet \overline{C}} \bullet \overline{D + A}
设:A=63H、B=82H、C=0C5H、D=36H,
ORG 0000H
SJMP START
ORG 0030H
START:
MOV 30H,#063H
                    ;A
MOV 31H,#082H
                    ;В
MOV 32H,#0C5H
                     ;C
MOV 33H,#036H
                    ;D
MOV A,30H
                    ;覆盖 B
XRL 31H,A
MOV A,32H
                   ;C 反
CPL A
ANL A,31H
```

CPL A

MOV 31H,A MOV A,30H ORL A,33H CPL A ANL A,31H MOV 40H,A

SJMP \$

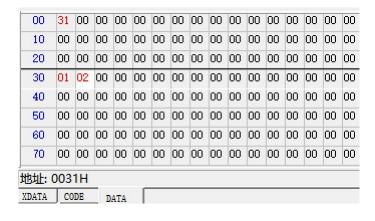
二、实验结果 1.输入 1:



输出 1:



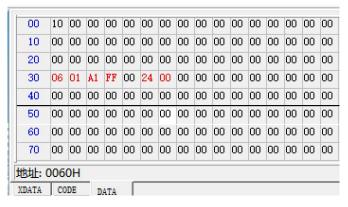
输入 2:



输出 2:

| 00 | 10 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
| 10 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| 20 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| 30 | 20 | 10 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| 40 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| 50 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| 60 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |
| 70 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | |

2. 输入1:



输出1:正数2个,负数2个,零2个。



输入 2:



输出2:正数3个,负数4个,零2个。



3.输出: 得到 Y=88H。

