Tutorial 5 (CSN-252)

1. In the following SIC/XE program add instructions for base register addressing after STL instruction. Use symbol LENGTH for base addressing. Write object code of each instruction. Also write the object program of the SIC/XE program.

```
COPY      START   0
FIRST     STL     RETADR
          LDA     HLO
          STA     BUFFER
          LDA     #3
          STA     LENGTH
          +JSUB   WRREC
          J       @RETADR
HLO       BYTE    C'HLO'
RETADR    RESW    1
LENGTH    RESW    1
BUFFER    RESB    4096
.         Subroutine to write record
WRREC     CLEAR   X
          LDT     LENGTH
WLOOP     TD      OUTPUT
          JEQ     WLOOP
          LDCH    BUFFER, X
          WD      OUTPUT
          TIXR    T
          JLT     WLOOP
          RSUB
OUTPUT    BYTE    X'05'
          END     FIRST
```

2. Consider the bit pattern 01A02D. Is it a valid instruction? Justify your answer.

3. Disassemble the following SIC/XE program.

```
HSUM   0010000000011
T00100001101000005000190102D000B3B2FF84F0000
E001000
```

What will be the contents of register A when RSUB instruction is executed?