SECTION IX

MISCELLANEOUS UTILITIES

9.1 ADD816

Calling Sequence:

```
LD    A, VALUE
LD    HL, ADDRESS
CALL  ADD816
```

Description:

ADD816 adds an 8-bit signed number in accumulator to a 16-bit unsigned number pointed to by HL; returns with altered 16-bit number at the HL address.

Parameters:

VALUE	8-bit signed number.

ADDRESS	Address pointing to a 16-bit unsigned number
Output:	Two-byte value at the address pointed to by the HL register pair.

Side Effects:

Destroys registers A, F and B.

9.2 DECLSN

Calling Sequence:

```
LD    HL, ADDRESS
CALL  DECLSN
```

Description:

DECLSN decrements least significant nibble of a byte pointed to by HL without affecting most significant nibble or HL. Returns with altered 8-bit number at HL address. Sets Z-flag if 0, C-flag if -1.

Parameters:

ADDRESS	Address pointing to an8-bit unsigned number.
Output:	A one-byte value at the address pointed to by the HL register pair.

Side Effects:

Destroys A and F.

9.3 DECMSN

Calling Sequence:

```
LD    HL, ADDRESS
CALL  DECMSN
```

Description:

DECMSN decrements the most significant nibble of byte pointed to by HL without affecting the least significant nibble or HL. Returns with altered 8-bit number at HL address. Sets Z-flag if 0, C-flag if -1.

Parameters:

ADDRESS	Address pointing to 8-bit unsigned number.
Output:	A one-byte value at the address pointed to by the HL register pair.

Side Effects:

Destroys A and F.

9.4 MSNTOLSN

Calling Sequence:

```
LD    HL, ADDRESS
CALL  MSNTOLSN
```

Description:

MSNTOLSN copies the most significant nibble of byte pointed to by HL to the least significant nibble of that byte. The routine returns the results at the location pointed to by HL.

Parameters:

ADDRESS	Address pointing to an 8-bit unsigned number.
Output:	A one-byte value pointed to by HL register pair.

Side Effects:

Destroys A, F and B.

9.5 RAND_GEN

Calling Sequence:

```
CALL  RAND_GEN
```

Description:

RAND_GEN is a 16-bit psuedo random number generator. It "exclusive OR's" the 15th and 8th bit together and then rotates the entire quantity to the left and inserts the "exclusive OR'ed" bit into the rightmost bit. Upon leaving, it stores the random number at global location RAND_NUM.

Output: The random number can be found in the HL register pair or RAND_GEN because RAND_GEN contains the value of L while RAND_GEN + 1 has the value of H, or in the accumulator because A = L before RET.

Side Effects:

Destroys registers AF and HL (return values).

9.6 LOAD ASCII

Calling Sequence:

```
CALL  LOAD_ASCII
```

Description:

LOAD_ASCII writes out the ASCII generator set to the pattern generator table. The ASCII table is located in Cartridge ROM starting at ASC_TABLE. INIT_TABLE must be called to set up the table addresses before using this routine.

Side Effects:
Destroys AF, DE, HL and IY.

Calls to other OS routines:
- PUT_VRAM