

Chapter 4

21. The initial value of (A2) is \$5000. The long word at that address is \$00AA5000. Describe the action of each instruction.

- (a) LEA \$5000,A5
- (b) MOVEA.W A2,A5
- (c) LEA (A2),A5
- (d) MOVEA.L (A2),A5

22. Give the value of A0 after executing each of the following instructions:

- (a) MOVEA.W #\$8000,A0
- (b) The value of A0 is initially \$42B01152
 - (i) ADDA.W #\$C000,A0
 - (ii) LEA (A0),A0
 - (iii) MOVEA.W #\$300,A0
 - (iv) SUBA.L #\$14,A0
- (c) Address register (A2) = \$001000. The long word in memory at address \$001000 is \$0010A00C. What is the resulting value of A2?
 - (i) LEA (A2),A2
 - (ii) MOVEA.L (A2),A2
 - (iii) MOVEA.W (A2),A2
 - (iv) ADDA.L (A2),A2

Chapter 5

1. Assume (D0.L) = \$4A7B and (D2.W) = \$D6AF for each of the following instructions. The CCR bits are X=1, N=0, Z=1, C=1, V=0. Give the value of the CCR bits after executing the instructions.

- (a) ADD.W D2,D0
- (b) AND.B D2,D0
- (c) MOVEA.W D0,A2
- (d) EOR.W D2,D0

2. If (D0.L) = \$45325587 and (D3.L)=\$17843215, what are the values for the condition code bits after each subtraction?

- (a) SUB.W D3,D0
- (b) SUB.W D0,D3
- (c) SUB.B D0,A3
- (d) SUB.L D3,D0

5. Let (D0.W) = \$67C5 and (D1.W)=\$D29E. Execute the following instruction:

- ```

 CMP.W D1,D0
(a) What are the following values in the CCR?
(b) With YES or NO answers indicate whether the following
branches will execute:
 (i) BPL <label>
 (iii) BGT <label>
 (iv) BCS <label>
 (v) BMI <label>

```

## Chapter 6

2. Suppose that (A2)=\$001078 and the initial conditions of memory are given as follows. Give the value of A2 and the contents of memory after executing the instructions.

| Address | Contents |
|---------|----------|
| \$1106  | \$1074   |
| \$1074  | \$1072   |
| \$1072  | \$1106   |
| \$1106  | \$1104   |
| \$1104  | \$1100   |
| \$1100  | \$1072   |
| \$1072  | \$1074   |
| \$1074  | \$1076   |
| \$1076  | \$1078   |
| \$1078  | \$107A   |
| \$107A  | \$107C   |
| \$107C  | \$107E   |

- ```

(a) CLR.W    (A2)+
(b) MOVE.W  -(A2),-(A2)
(c) MOVE.L  A2,(A2)+
(d) MOVE.B  (A2)+,(A2)+
(e) MOVE.W  (A2)+,-(A2)

```

7. Assume the following data is available for each of the indicated instructions. Give the resulting 32-bit contents of registers D2 and A3 and the contents of memory after executing the instructions.

Address	Contents
\$001010	\$0007
\$00101A	\$0006
\$00101C	\$FFFD
\$00101E	\$01A3
\$001020	\$000E

```

(D2) = $FFFF 0004
(A3) = $0000 101A

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- ```

(a) MOVE.L #$A3,(A3)+
(b) LEA (A3),A3
(c) MOVE.L (A3)+,(A3)
(d) ADD.W -(A3),D2
(e) ADD.L D2,(A3)+

```

OTHER:

Define the following terms:

- (i) backside cache
- (ii) memory mapped input/output
- (iii) polling

Describe how an infinite loop is used in lab#1.