

# CSC 3501 Computer Organization and Design

## Homework #5 Solution

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### Chapter 4 Exercises

11.

**Fetch:** Load the PC into the MAR; fetch the instruction and place it into the IR; increment PC by 1;

**Decode:** Decode the instruction using IR[15-12]; if necessary, place IR[11-0] into MAR

and fetch operand, placing result into MBR;

**Execute:** Execute instruction

12.

MARIE can handle 16-bit data, so the AC must be 16 bits wide. However, MARIE's memory is limited to 4096 address locations, so the MAR only needs to be 12 bits wide to hold the largest address.

15(a).

(ii) Jump 00B

iii) Add 009

True or False

2. T

3. T

5. F

8. T