

FYL_Fall 2021_Robot

HW2

1. Convert the following binary numbers to decimal: (20 points)

- (1) 1011
- (2) 1000
- (3) 1111
- (4) 10101.11
- (5) 11101.001

2. Convert the following decimal numbers to binary: (20 points)

- (1) 10
- (2) 8
- (3) 16
- (4) 52
- (5) 12.625

3. (20 points)

(a) Convert to Decimal: 17.2_8 . Round to two digits past the point.

(b) Convert your answer to binary.

(c) Convert to binary: $DEC.A_{16}$.

4. Complete the following logic expressions: (20 points)

$$AxA = \quad Ax0 = \quad Ax1 = \quad Ax A' =$$

$$A+A = \quad A+0 = \quad A+1 = \quad A+A' =$$

5. Complete the following logic expressions: (20 points)

$$A \times A \times A \times A =$$

$$A \times 1 \times 0 \times B =$$

$$((A + A) \times A) + A =$$

$$A + 1 + A + B + 0 =$$

$$(A \times A) + (A + A) =$$

$$1 + 1 =$$

$$A' + A + A' =$$

$$(A' + A) \times A =$$

$$A' \times (A + A \times B) \times 0 \times 0 =$$

$$1 + 0 =$$