

EE 409 MID TERM #1

3/4/10

CLOSED BOOKS AND NOTES

TOTAL POINTS 20

1 PAGE 8 1/2" X 11" ALLOWED

TIME 4:00 - 5:10 PM

Q1 FOR THE SYSTEM

$$y''(t) + 9y'(t) + 2y(t) = u(t)$$

1) DRAW THE BLOCK DIAGRAM

2) FIND  $h(t)$  ?

3) VERIFY YOUR SOLUTION

4) FIND  $H(j\omega)$ ,  $|H(j\omega)|$ ,  $\text{ARG}(H(j\omega))$  ?

Q2 IS THE SYSTEM LINEAR? SHOW YOUR STEPS TO THE ANSWER

(4)

$$y(k) = Au(k) + Bu(k-1) + c[u(k-2)]^2$$