



Assume any missing data....Exam is two pages.

Attempt the following questions:

Max. Marks (50)

Question 1:

(15marks)

(1-a) Solve the following difference equation:

(5marks)

$$C(k+2) + 6C(k+1) + 8C(k) = 3U(k)$$

Given that: $C(0) = 0, C(1) = 2$.

(1-b) Plot the following poles on Z-plane: $S_1 = 5 + j8, S_2 = -8 - j7$, where $T=0.2$ sec.

(5marks)

(1-c) Plot the following poles on S-plane: $Z_{1,2} = 4 \pm j5, Z_{3,4} = 0.4[\pm 50^\circ]$ and $T=0.2$ sec.

(5marks)

Question 2:

(10marks)

Find the pulse transfer function for the system shown in fig.1.

(10marks)

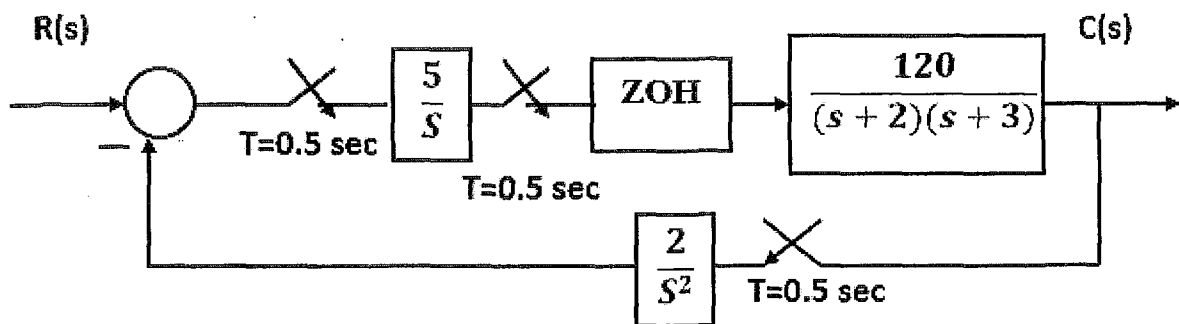


fig.1.

Question 3:

(15marks)

For the system shown in fig.2.

(15marks)

Find:

- 1- Damping ratio
- 2- Max-overshoot
- 3- Settling time for 2% error

Then compare these values with those of the same system when the ZOH is removed.