

CODES:

VARIATION OF Kp:

```
s=tf('s');
P=10/(s^2+10*s+20);
Kp=50;
Ki=50;
Kd=2;
C=pid(Kp,Ki,Kd)
T=feedback(C*P,1)
t=0:0.01:2;
step(T,t)
hold on
Kp1=100;
C1=pid(Kp1,Ki,Kd)
T1=feedback(C1*P,1)
t=0:0.01:2;
step(T1,t)
hold on
Kp2=200;
C2=pid(Kp2,Ki,Kd)
T2=feedback(C2*P,1)
t=0:0.01:2;
step(T2,t)
legend
title('Variation in Kp');
```

Variation of Ki:

```
s=tf('s');
P=10/(s^2+10*s+20);
Kp=50;
Ki=50;
Kd=2;
C=pid(Kp,Ki,Kd)
T=feedback(C*P,1)
t=0:0.01:2;
step(T,t)
hold on
Ki1=100;
C1=pid(Kp,Ki1,Kd)
T1=feedback(C1*P,1)
t=0:0.01:2;
step(T1,t)
hold on
Ki2=200;
C2=pid(Kp,Ki2,Kd)
T2=feedback(C2*P,1)
t=0:0.01:2;
```

```

step(T2,t)
legend
title('Variation of Ki');

```

Variation of Kd:

```

s=tf('s');
P=10/(s^2+10*s+20);
Kp=50;
Ki=50;
Kd=2;
C=pid(Kp,Ki,Kd)
T=feedback(C*P,1)
t=0:0.01:2;
step(T,t)
hold on
Kd1=100;
C1=pid(Kp,Ki,Kd1)
T1=feedback(C1*P,1)
t=0:0.01:2;
step(T1,t)
hold on
Kd2=200;
C2=pid(Kp,Ki,Kd2)
T2=feedback(C2*P,1)
t=0:0.01:2;
step(T2,t)
hold on
Kd3=500;
C3=pid(Kp,Ki,Kd3)
T3=feedback(C3*P,1)
T=0:0.01:2;
Step(T3,t)
legend
title('Variation of Kd');

```