Codes

1.c)

plot(tout, NOMx1.signals.values, tout, NOMx2.signals.values); legend('x1','x2'); title('Nominal Operating Time Trace Plot'); xlabel('Time');ylabel('Value');

plot(tout, UPx1.signals.values, tout, UPx2.signals.values); legend('x1','x2'); title('Step Up Operating Time Trace Plot'); xlabel('Time');ylabel('Value');

plot(tout, DOWNx1.signals.values, tout, DOWNx2.signals.values); legend('x1','x2'); title('Step Down Time Trace Plot'); xlabel('Time');ylabel('Value');

1.d)

plot(NOMx2.signals.values, NOMx1.signals.values); title('Nominal Operating Phase Portrait Plot'); xlabel('x2');ylabel('x1');

plot(UPx2.signals.values, UPx1.signals.values); title('Step Up Operating Phase Portrait Plot'); xlabel('x2');ylabel('x1');

plot(DOWNx2.signals.values, DOWNx1.signals.values); title('Step Down Operating Phase Portrait Plot'); xlabel('x2');ylabel('x1');

2c)

plot(tout, OUTy1.signals.values, tout, OUTy2.signals.values); legend('y1','y2'); title('Nominal Operating Time Trace Plot'); xlabel('Time');ylabel('Value');

plot(OUTy2.signals.values, OUTy1.signals.values); title('Nominal Operating Phase Portrait Plot'); xlabel('y2');ylabel('y1');